




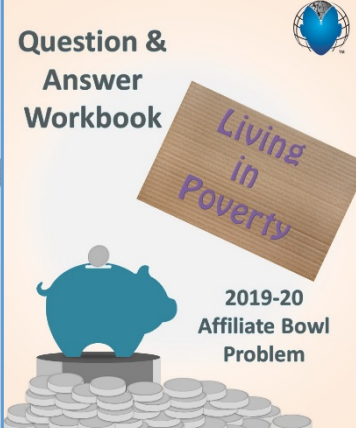
2019-20 READINGS, RESEARCH, AND RESOURCES + Q&A

For the topics:
International Travel • Sleep Patterns
Gamification • Living in Poverty

<p>Readings, Research, & Resources</p>  <p>2019-20 Practice Problem #1</p>	<p>Question & Answer Workbook</p>  <p>2019-20 Practice Problem #1</p>
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<p>Readings, Research, & Resources</p> <p>2019-20 Practice Problem #2</p> 	<p>Question & Answer Workbook</p> <p>2019-20 Practice Problem #2</p> 
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<p>START</p> <p>2019-20 Qualifying Problem</p> <p>Readings, Research, & Resources</p> <p>GAMIFICATION</p>	<p>START</p> <p>2019-20 Qualifying Problem</p> <p>Question & Answer Workbook</p> <p>GAMIFICATION</p>
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<p>Readings, Research, & Resources</p> <p>Living in Poverty</p> <p>2019-20 Affiliate Bowl Problem</p> 	<p>Question & Answer Workbook</p> <p>Living in Poverty</p> <p>2019-20 Affiliate Bowl Problem</p> 
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**Future Problem Solving
Program International, Inc.**

Readings, Research, & Resources



2019-20
Practice
Problem #1

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Future Problem Solving Program International (FPSPI)

We hope you find this edition of *Readings, Research, and Resources* to be a valuable resource as your students gather knowledge about *International Travel*.

This publication should be used as a starting point for research. By the time it is printed and distributed, some of the information may change or become out-of-date. Keep in mind, however, that observing and studying the changes that take place in a given subject area over a few months or years can be an incredible asset to problem solvers who work with scenarios set in the future.

A concerted effort was made to find recent articles from as many different perspectives as possible. While FPSPI attempts to present a balance in the range of opinions, some sides of an issue are often more represented than others. This does not mean that FPSPI supports that position. FPSPI supports no position. Information contained in this publication is a summary of the original article. It is up to the reader to determine which “facts” to accept.

FPSPI encourages coaches to preview the article summaries and links to determine whether all information is appropriate for their students. Efforts were made to minimize the sensitivity of the summaries’ contents; however, different standards of acceptability apply to each individual student, coach, and community. Please use your discretion with these materials.

At the end of this publication you will find an appendix containing a topic-related Future Scene from past years and a “Use the Tools” section dedicated to helping problem solvers apply creative thinking tools to their research.

About Topic Selection:

FPS topics are determined with the input of students, coaches, researchers, futurists and many others. FPSPI participants are encouraged to submit topics for consideration. Annually, the FPS community votes for their top five topics from three general themes: Science/Technology, Social/Political, and Business/Economics. The results of the voting determine which topics FPSPI uses each year. Information on topic submission and voting can be found at www.fpspi.org/topic-submission.

Acknowledgments:

This publication is a compilation of the hard work of many people. Special thanks are extended to the following dedicated individuals involved in the production of this edition of *Readings, Research, and Resources*:

Chapter Authors:	Emily Miller and Kylo Hart
Editing:	Brad Persinger and Deana Bindel
Proofreading:	April Dennis
Layout and Desktop Publishing:	Brad Persinger

About Themes & Concepts and Internet Resources:

Themes and Concepts serve as content organizers for each topic of study. Common themes are obvious in most subject matters or topics. Concepts represent mental images, constructs, or word pictures that help people to arrange and classify fragmented and isolated facts and information. Themes and Concepts assist in organizing a lot of information into manageable threads or ideas, providing a complete picture or understanding of the subject.

Coaches may wish for younger students to utilize the provided Themes & Concepts for each topic as a reference and starting point in their research. Coaches of older and/or more advanced problem solvers may encourage students to take the research and develop their own Themes & Concepts for each topic.

Highly engaging curricular lessons to expand research, teach the problem solving process and explore the current topics are available. The [Topic Activity Units](#) are excellent resources for teachers and coaches alike, for both use in the classroom and after school. They incorporate best practices and provide step by step lesson plans for research based independent and collaborative work.

Readings, Research, and Resources includes specific web site addresses; however, site changes occur continuously. Some of the articles cited in this publication may be found by going directly to the source of the article; however, some articles can only be accessed by using an on-line database such as EBSCO or Cengage. Digital resources are checked at the time of publishing to ensure that the links are active, however, by the time you have purchased the publication these links may have changed.

Caution: We strongly advise coaches to review their educational organization's policies on appropriate content, and to screen any materials before making them available to students.

About Zappar:

Some sections feature an augmented reality (AR) code called a zap code. These codes, when scanned using the Zappar app, will give users an AR experience that provides more information about the publication and the topics inside.

You can download the app from your app store on iPhone and Android devices. Go to your app store and search for "Zappar", once you download it you can scan the codes found in this publication.



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PASSPORT



Terms & Definitions



These Terms and Definitions are also available online with interactive games at:

https://quizlet.com/_5pgt4d

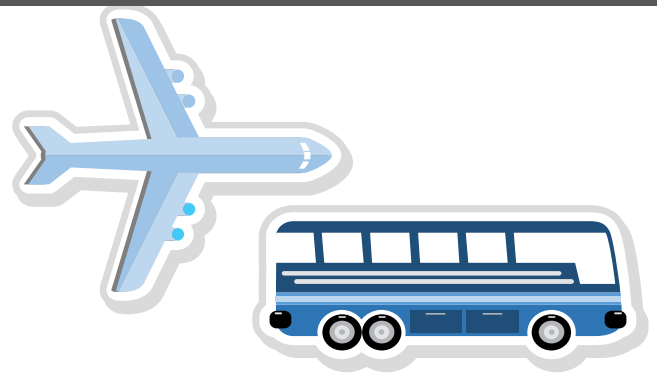
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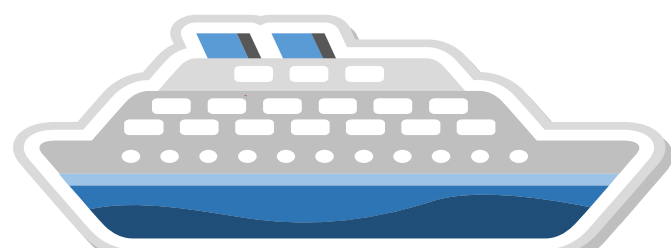


The Quizlet password is part of the copyright of this publication. Only share this password with the students of a single coach.

- **accommodation:** a room in which someone stays or lodges while traveling
- **aircraft:** a machine that is capable of flight
- **amenity:** a desirable feature of a place or travel site
- **anxiety:** feelings of worry and fear
- **augmented reality (AR):** a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view
- **biometric security:** security processes that rely on unique individual characteristics — such as individual voice patterns, fingerprints, or patterns in the eye — to confirm a person's identity
- **bleisure:** combining business and leisure activities into the same trip while traveling
- **blockchain:** an extremely secure process for encrypting, protecting, and sharing data that potentially can be used to strengthen the entire process of international travel validation
- **budget:** the amount of money available to cover expenses for a specific purpose, such as an international trip
- **carbon emissions:** the release of harmful greenhouse gases into the atmosphere
- **culture:** the arts, beliefs, customs, and practices associated with particular places and their inhabitants
- **culture shock:** the feeling of disorientation when visiting an unfamiliar place or culture
- **currency:** the system of money used in a specific country
- **disposable income:** income remaining after necessary expenses have been paid and therefore available to be spent in more desired ways
- **duty of care:** the legal obligation of companies to keep track of and help safeguard their employees while they are traveling on company business
- **ecotourism:** tourism intended to support the conservation of endangered natural environments



- **epidemic:** a sudden increase in the total number of cases of a specific infectious disease that is widespread across multiple areas
- **ergonomic:** designed to maximize efficiency and comfort
- **food poisoning:** illness caused by eating contaminated food
- **frequent traveler program:** a loyalty program offered by an airline or hotel to reward and encourage future travel for regular airline customers
- **global citizen:** an individual who identifies as being part of the world community and feels the need to safeguard its well-being through his or her personal actions and values
- **globetrotter:** a person who engages frequently in international travel
- **health:** the condition of being well and disease-free
- **hospitality:** the practice of receiving and entertaining visitors in warm, generous, and memorable ways
- **immersive:** something that is deeply engaging
- **itinerary:** a detailed plan for a specific journey
- **jet lag:** a physiological condition that results from alterations to the body's circadian rhythms caused by rapid, long-distance, trans-meridian (east–west or west–east) travel
- **long-haul travel:** travel routes that exceed 4,000 kilometers (~2,500 miles)
- **luggage:** bags used to carry one's belongings while traveling
- **luxury:** something typically expensive that is pleasant to enjoy but not necessary
- **mixed reality (MR):** the combining of real and virtual worlds to create a new, experiential environment
- **overtourism:** excessive tourism that is harmful to the quality of life of local residents and results in negative experiences for visitors



- **passport:** an official, government-issued document that confirms a person's identity and enables a citizen to travel to and from foreign countries
- **sharing economy:** an economic model that relies upon individual-to-individual sharing of desired goods or services through an online platform, such as lodging options available through online sites operated by Airbnb and VRBO
- **supersonic jet:** an advanced aircraft capable of traveling at speeds that exceed the speed of sound
- **sustainable:** using something in ways that ensure it can continue regenerating without permanent depletion
- **sustainable tourism:** tourism practices that are committed to having minimal impact on local cultures and environments while providing financial and other benefits to local residents
- **tourist:** an individual who travels to another place for pleasure
- **travel insurance:** insurance coverage for travel-related risks that may be common while visiting a foreign country
- **vaccine:** a substance designed to stimulate antibody production and provide immunity against a specific disease
- **virtual reality (VR):** computer-generated simulation of an environment that seems realistic to a person who is interacting with it
- **visa:** an official endorsement that allows a traveler to enter and remain in a specific country for a specified period of time
- **voluntourism:** a specific form of tourism that requires travelers to provide voluntary labor (often for a charity) as part of their trip
- **well-being:** the state of being happy and healthy



NEW YORK

In 2016,
New York had
approximately
12.7 million
international
visitors.

The city
generated
around
\$9 billion (US)
in tourism
revenue.

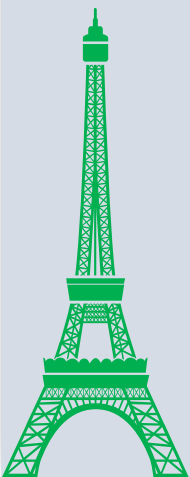


In 2017, Rome had approximately 9.6 million international visitors. The city generated roughly \$6.7 billion (US) in tourism revenue.

ROME



Topic Overview



PARIS

In 2013, Paris welcomed approximately 15.6 million international visitors. The city generated around \$17 billion (US) in tourism revenue.



TOPIC OVERVIEW

It's true, people love to travel, but traveling internationally is not always easy. While exploring new places throughout the world is exciting, travelling can also bring difficulties.

For starters, International Travel can be expensive. One of the biggest costs is transportation from one destination to another. Quality lodging in certain cities and meals can also cost a good deal of money. If you arrive at your destination without local currency, exchange rates are not always favorable. Many credit cards also charge fees for every purchase made while abroad. When taking a taxi, a driver who senses you are not a local may take you on a longer route in order to charge more money.

The logistics involved with International Travel can also be challenging. A common pre-departure problem is discovering you forgot to bring a passport. Which requires heading back home to collect it or miss your flight. Although you may have picked your preferred airline seat, you could find yourself surrounded by unpleasant passengers once you board. You may have planned to rely on an in-flight entertainment system only to find that the screen at your seat is not functioning. In other instances, one or more flights, cruises, or trains on your itinerary may be rescheduled, delayed, or even cancelled. Leaving you stranded or vulnerable in an unfamiliar place.

There are also a variety of potential safety issues involved with International Travel. Acts of terrorism are of growing concern. It is advisable to research potential travel advisories pertaining to the countries you will visit. Know how to reach your embassy and always keep an eye out for suspicious activity. Pickpockets and thieves are common in many areas that attract large numbers of tourists, so keep careful watch over your wallet and personal belongings. Some travelers have their passports or other items stolen from their rental cars or hotel rooms. Numerous types of scammers lurk in the shadows, hoping to take advantage of well-intentioned but naïve tourists. When you are unfamiliar with the local area, it is easy to find yourself wandering into dangerous parts of cities and towns. This can be even more troublesome at night or when you are alone.



SYDNEY

**In 2017, Sydney had approximately
4.1 million international visitors.**

**The city generated around
\$9.5 billion (US) in tourism revenue.**



**In 2016, London had approximately
19.1 million international visitors.**

**The city generated around \$15.3 billion in
tourism revenue.**

LONDON

International Travel can also pose risks to your physical and psychological well-being. As a result, it's advisable to always conduct research to determine what vaccinations you may need. In many areas it is essential to avoid drinking the local water to keep from ingesting microorganisms or other contaminants. You need to ensure that any food items you eat have been properly prepared in order to avoid food poisoning. It can be extremely expensive to obtain medical care while visiting another country, so travel insurance is an important step in planning your journey. From a psychological standpoint, International Travel sometimes makes individuals feel disoriented, lost, or lonely. Making connections and talking with locals may be a good thing to do.

Thankfully, there are a variety of approaches that can help make International Travel go as smoothly as possible. For example, you should leave plenty of travel time to get from your starting point to your departure location. To avoid missed flight connections, a traveler should also leave time between flights rather than scheduling tight connections. To avoid being denied entry into another country, check country requirements on passport renewals. Also, be certain to obtain any required visas in advance. To save a bit of money, consider taking advantage of the "sharing economy". To safeguard our planet, always strive to be a greener, more sustainable traveler. Engage in environmentally friendly travel practices and respecting cultural sites and natural habitats. Spending your travel dollars in ways that benefit the local communities you visit also helps.

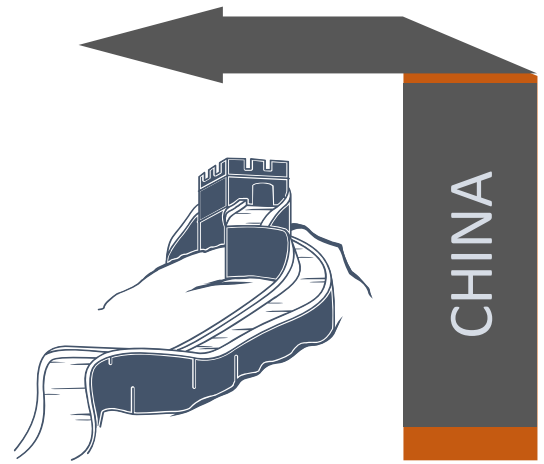
In the coming years, travel advances such as supersonic aircraft and super-trains, will get travelers to new places faster than ever before. Will they be a good option or will their impacts outweigh the benefits?



Discussion Questions



In 2016, China had approximately 28.1 million international visitors, generating around \$57 billion (US) in tourism revenue.



Pre-Research Questions:

1. Have you personally ever traveled to another country? If so, what did you like best about your travel experiences? What did you like least?
2. Why do you think International Travel is so appealing to so many people?
3. What sorts of challenges do you believe are commonly associated with International Travel, and how might they be overcome?
4. It can cost a lot of money to travel to another country. In your opinion, is International Travel worth all of the expenses involved? Why or why not?
5. Concerns pertaining to terrorism sometimes discourage people from traveling to other countries. To what degree (if at all) do you share such concerns, and why do you feel the way that you do?
6. A globetrotter is a person who engages frequently in International Travel. Do you consider yourself to be a globetrotter, or would you like to be one someday? Why or why not?

Post-Research Questions:

1. What are five specific things international travelers can do to help keep themselves safe while visiting other countries?
2. Many travelers do not realize they may need to get vaccinations before departing for international destinations. In your opinion, what can be done to most effectively spread the word about this?
3. In the past, it was common for international travelers to stay in hotels while visiting other countries. In recent years, the “sharing economy” and lodging options through companies like Airbnb and VRBO have grown in popularity. What are the advantages and disadvantages of staying in a hotel while traveling abroad and how do these compare with renting someone else’s home or apartment?
4. What is meant by the term “sustainable tourism”? What are some ways to explore the world in sustainable ways? What may be developed in the future to make travelers aware of their impacts?
5. What do you think the future of International Travel will look like, and what sorts of things have led you to those conclusions?

Themes

&

Concepts



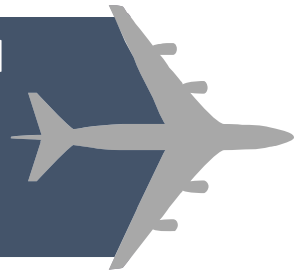
Central Theme #1: The travel industry continues to thrive.

Even as technological alternatives (such as virtual reality) provide people with access to destinations remotely, the travel industry continues to grow. A dual focus on technology and personalization will help draw in customers for the foreseeable future.

MAJOR CONCEPTS:

- The global travel industry reached \$8.27 trillion (US) in 2017, making it one of the largest and fastest-growing sectors in the world.
- The number of international travel departures across the globe has more than doubled, growing from roughly 600 million to 1.3 billion over the past two decades.
- Travel and tourism now account for an impressive 10.2% of global gross domestic product (GDP) with projections displaying continued growth.
- The International Air Transport Association predicts that, by 2035, there will be 7.2 billion international passengers; similarly, the number of active aircraft is expected to double by 2033 according to Plunkett Research, a firm specializing in the travel industry.

According to the World Travel & Tourism Council (WTTC), global tourism generated \$7.6 trillion (US) for the global GDP in 2014, making it one of the world's fastest growing and largest sectors.



Central Theme #2: Sustainable travel is an area of focus for the future.

Sustainable travel is becoming increasingly more important to individuals who travel the world and to the companies seeking their business. It involves finding and implementing ways to maintain tourism long-term without harming natural and cultural environments.

MAJOR CONCEPTS:

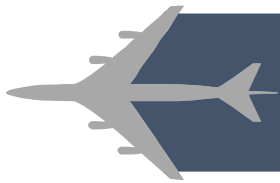
- The World Tourism Organization, a United Nations agency, declared 2017 the Year of Sustainable Tourism.
- Although voluntourism (or volunteering as a tourist) is popular, research shows that short-term, unskilled volunteers do more harm than good most of the time. As a result, rather than having unskilled individuals volunteer time on projects, they should be encouraged to donate money to charities and organizations that responsibly funnel such funds into communities.
- Research is key: a lot of businesses claim they are green but may not necessarily be taking realistic actions to help the planet.
- Around the world, uneducated travelers continue to engage in harmful practices such as riding elephants, wearing sunscreen that is not reef-safe, and disrespecting local traditions. "Tourism remains one of the biggest providers of revenue, jobs, and, of course, enjoyment around the globe. However, all of this can come at a cost," said Geoff Bolan, CEO of Sustainable Travel International.

Central Theme #3: Travel will become faster, more personalized, and more innovative.

Increasingly, consumers today are demanding faster, more personalized, and more innovative, global travel options. The typical hotel is in competition with alternatives such as Airbnb. Technologies that create personalized experiences are preferable to one-size-fits-all travel packages. Tools and technologies that make travel easier, more enjoyable, and faster are desired.

MAJOR CONCEPTS:

- Evolving technologies and data-driven personalization are shaping the future of travel and redefining the relationship between customer and brand.
- Traditional businesses and business models are being forced to adapt, evolve, and become more innovative in order to attract customers.
- Virtual and augmented reality technology can now enable travelers to discover secluded, “Instagram-friendly” places, continuing the steady demand for long-haul flights. In contrast, the market for short-haul services is expected to shrink in the coming years as competition from alternative modes of transport (such as high-speed rail, self-driving cars, and cruises) grows.
- Supersonic jets may soon reduce journey times between major cities by approximately half (e.g., Sydney to Los Angeles from 15 hours to just 7.5 hours).
- Security measures — including facial recognition, retinal scanning, and fingerprint identification — will operate through artificial intelligence and reduce wait times.



Less than 1% of the world's population has ever ventured to Antarctica.

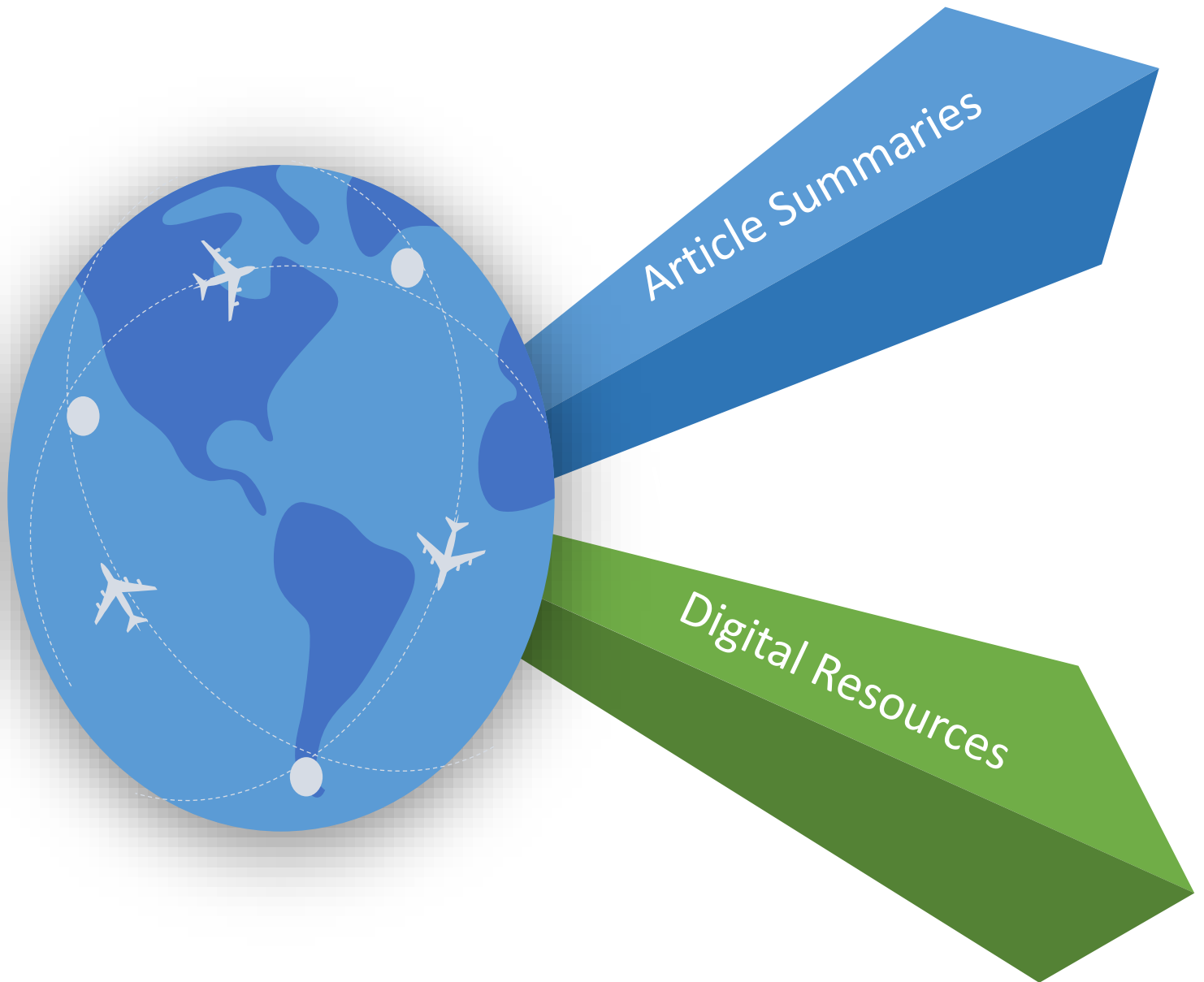
Central Theme #4: Traditional business models will shift.

Corporations will need to evolve in order to support the continued interest in, and shift toward, global tourism. Increasingly, people seek full experiences, which challenge traditional corporations to go beyond providing hotel rooms or travel accommodations and to think about the whole package they offer. At the same time, experts are being forced to consider the damage tourism does to fragile sites and reconsider the best ways to expose travelers to unique and delicate locations (increasingly, virtual reality and “fake landmarks” provide alternatives to in-person experiences).

MAJOR CONCEPTS:

- The Airbnb business model is expected to continue to grow because it offers value, combining more space and home-like amenities at an affordable price.
- To stay competitive in the evolving travel landscape, operators of hotels and resorts will need to create and offer products with entire vacation experiences (rather than simply lodging) in mind.
- Some believe virtual travel may replace real-world travel; however, travel-industry experts hope that people who sample virtual snippets of places and experiences will be persuaded to splurge on the real thing.
- Backlash against accommodations managed by amateurs and ground transportation operated by part-time drivers has already begun. It may continue to build momentum as travelers become frustrated with options that are not managed by professionals.
- The travel and tourism markets are subject to volatility from multiple sources, including climate change, economics, geopolitics, and innovation. Continuous evaluation of how to provide what customers most want and need from their travel experiences is essential to stay competitive.

Resources & Summaries



While we strive to ensure that these resources are suitable for all ages, you should review them before sharing with your students. Links and content can change over time and are beyond our control.

You may also get new articles from our Facebook page:
www.facebook.com/fpspi.

Avakian, T. (2018, April 2). Here's everything you need to travel the world. *Time*.

International travel requires a good deal of planning and money. When preparing to travel the world, sturdy luggage and a current passport are needed. Make sure the passport is valid for at least six months after the trip will end. Visas may be required to enter various countries. Meanwhile, security checkpoints at airports can take a lot of time. U.S. travelers can speed the security process a bit by signing up for TSA PreCheck or Global Entry. Certain credit cards offer travel rewards and do not charge foreign-transaction fees.

It is a good idea to book foreign travel several months in advance. Transportation options include airline flights, cruises, trains, and buses. To help travelers save money, some of the major airline alliances — such as OneWorld (including American Airlines, British Airways, Cathay Pacific, and Qantas) and Star Alliance (including Air Canada, Air China, Air New Zealand, Austrian Airlines, Lufthansa, and United Airlines) — offer round-the-world tickets. Train travel is often cheaper than air travel. For example, the Eurail Global Pass allows unlimited travel in 28 different countries.

To save money once you reach your destination, look for city-pass offerings. For a small fee, many cities provide discounted — or even free — admission to popular tourist attractions. While abroad, be aware that international calling fees and roaming charges can be expensive. To save money while communicating with loved ones back home, try using apps like Skype and WhatsApp, or purchase a local SIM card for your cellphone. Dining out for every meal while traveling can also be expensive. To spend less, try not to eat in restaurants near tourist attractions, because they tend to charge more. Experts also recommend making lunch the biggest meal of the day because prices are lower than at dinner time.

Retrieved from <http://time.com/5166659/how-to-travel-the-world/>

Bloomberg. (2017, December 27). 6 important ways that luxury travel changed in 2017. *Fortune*.

Over the course of 2017, the world changed significantly for globetrotters. A number of natural disasters caused travelers to seek out new places to visit. They included three incredibly powerful hurricanes that caused major damage to parts of the Caribbean, Puerto Rico, and the United States. Unfortunately, recovering areas need tourism dollars. They are less likely to receive these much-needed funds as luxury travelers pursue alternative destinations such as Bermuda, New Zealand, and Mexico's Los Cabos.

New airline policies in 2017 made travel less appealing. For example, in July, United Airlines, Inc. announced that it would resell fliers' seats to others for more money. In September, Jet Blue shrunk the size of its seats. Months later, British Airways introduced a policy that requires passengers who pay the least for their tickets to board aircraft last.

In 2017, cruise companies launched new ways to attract younger passengers. Some sent their oceangoing ships to uncharted Arctic territories; others offered open-water kayaking off the Alaska coast. Cruise ships also worked to make their dining and entertainment options more appealing to younger travelers.

Over the course of 2017, many luxury travelers sought out destinations that could allow them to “unplug” and avoid the ever-increasing amount of breaking news. Their desire for seclusion led many to Antarctica, the Maldives, Nepal, and South Africa. The focus shifted from massages and facials to holistic wellness and emotional well-being.

Closed borders became more common throughout 2017 in places such as Germany, Great Britain, and the United States. This caused many people to fear that we are no longer living in a “borderless world.” The trend was most visible in President Donald Trump's travel ban, which prevented visitors of eight countries — six with mostly-Muslim populations — from entering the United States with enhanced airport security and screenings.

Overtourism became more common across 2017 in areas such as Peru and Venice, Italy. It is the concept that, while tourism typically provides economic benefits, too much tourism can become destructive. To deal with the effects of overtourism, Dubrovnik, Croatia capped the number of visitors to its medieval walled city to 4,000 per day. Similarly, Peru found it necessary to limit the number of daily visitors to Machu Picchu in order to reduce the harmful effects of too much foot traffic.

Retrieved from <http://fortune.com/2017/12/27/ways-luxury-travel-changed-2017/>

Butler, A. (2017, September 27). World Tourism Day: Learn how these destinations are promoting sustainable travel. *Lonely Planet*.

Tourism around the globe is increasing. As a result, the World Tourism Organization, a United Nations agency, declared 2017 the Year of Sustainable Tourism. The goal was to motivate countries throughout the world to think about ways to ensure that tourism benefits, rather than harms, their communities.

Destinations around the world are already encouraging sustainable travel. Amsterdam recently decided to increase its tourist tax by 10 euros per night. Based in Venice, Venezia Autentica teaches individuals how to travel responsibly throughout the historic Italian city. In Lisbon, We Hate Tourism Tours offers recommendations for how visitors can better interact with local residents. The island nation of Palau, in Micronesia, hopes to fend off the negative effects of mass tourism by allowing only five-star hotels to operate there.

Retrieved from <https://www.lonelyplanet.com/news/2017/09/27/world-tourism-day-sustainable-travel/>

Chaphalkar, M. (2018, June 13). Blockchain and borders – the passport of the future. *Information Age*.

In 2015, several British tourists arrived in Turkey only to find that their e-visas were fake. They were denied entry until they purchased visas at a significantly higher price on the spot. As a result, they lost both valuable time at the airport and additional money. It is hoped that, in the near future, technology can be used to avoid this sort of situation.

Consider the following scenario: “Imagine a system where the details of a visa issued by country ‘A’ are made available on a need-to-know basis to specifically identified stakeholders; typically, other participating countries (let’s call them ‘B’ and ‘C’), along with travel companies and airlines.” If that kind of situation can be achieved, it will strengthen the entire international-travel validation process. Blockchain, the platform for making it happen already exists.

Blockchain is already being used throughout the financial world. Experts say it is an ideal application to handle decentralized travel authorization because it is highly secure and effective for complicated security checks. It could also be used to track information about lost, damaged, or stolen passports and to monitor certain kinds of criminal activity.

Retrieved from <http://www.information-age.com/blockchain-passport-of-the-future-123472310/>





Chavez, I. (2018, June 21). The future of luxury vacations in the face of the ‘sharing’ economy. *Forbes*.

In the global economy, the travel and leisure industry continues to grow. However, the associated growth of the “sharing economy,” led by companies such as Airbnb, Home Away, and VRBO, poses challenges to traditional hotels and resorts. These companies, and others, allow travelers to rent and stay in people’s homes or apartments for short periods of time.

Despite the appeal of the shared economy, luxury hotels and resorts still offer various advantages to vacationers. Luxury hotels and resorts strive to provide their guests with beautiful, memorable travel experiences. Many offer unique designs, delicious meal options, and distinctive, local adventures. They also typically provide 24/7 access to service staff who can fulfill guest requests. In contrast, many “shared economy” listings may not be well-suited to individuals who expect special treatment while they are traveling.

There are differences between staying at a luxury hotel/resort and in private lodgings. For starters, quality control is less consistent when renting and staying in private lodgings. Perks such as on-site dining options or nanny services, which are frequently provided at luxury hotels and resorts, do not exist regularly within private lodgings. Nevertheless, experts say the Airbnb business model will continue to grow because it provides a good deal of space and home-like touches at an affordable price. Staying in single-family residences also feels more casual and authentic to many travelers.

Retrieved from <https://www.forbes.com/sites/forbesbusinessdevelopmentcouncil/2018/06/21/the-future-of-luxury-vacations-in-the-face-of-the-sharing-economy>

Christ, C. (2017, July 11). 6 ways to be a more sustainable traveler. *National Geographic*.

Sustainable travel requires: (1) environmentally friendly practices, (2) protecting cultural and natural spaces and places, and (3) providing economic and other sorts of benefits to local communities. Restoring historic sites and safeguarding endangered species helps to protect cultural and natural heritage. Ensuring fair wages for employees and protecting the rights of indigenous peoples are examples of ways to benefit local communities.

There are a variety of other things globetrotters can do to help minimize their impact on our planet. For starters, they can choose to travel by train rather than by plane whenever possible, reducing their carbon footprint. Rather than handing out sweets or clothing items to individual children or villagers, they can instead make donations of money or goods to reputable local organizations or international groups. They can “say no to plastic” by carrying drinking water in recyclable glass bottles and use tote bags (to avoid the need for plastic ones) while shopping for souvenirs. When purchasing souvenirs, they can support the local economy by seeking out locally made crafts and gifts, and they can avoid buying wildlife products (such as a hat made from real wolf fur). When choosing a tour operator, they can seek one that intentionally protects and supports wildlife or cultural heritage.

Retrieved from <https://www.nationalgeographic.com/travel/lists/sustainable-travel-tips/>

Clinic offers one-stop travel vaccinations (2018, March 23). *The Telegram*.

When people start planning their international travel, they usually think about the best time of year to go, where they will stay, and how they will get there. In the process, they often overlook the need for vaccinations. There are various health risks associated with international travel. As a result, some countries require proof of mandatory vaccinations before a traveler can enter. Others recommend vaccinations to provide peace of mind to travelers.

To help travelers determine and receive all of the vaccinations they may need, the Avalon Travel Clinic serves as a one-stop shop. Based in St. John's, Newfoundland, this full-service travel clinic is staffed by registered nurses and an on-site physician. It offers all of the prescriptions, vaccinations, and medical advice that any individual traveler may need based on his or her itinerary. It also offers information about what sorts of food items will be safe to eat and how to deal with local drinking water in order to prevent illness.

Retrieved from <http://www.thetelegram.com/more/clinic-offers-one-stop-travel-vaccinations-196201/>

Dickinson, G. (2018, June 12). The curious rise of the fake landmark — and why it could be the future of travel. *The Telegraph*.

Hundreds of replicas of the Eiffel Tower, the Pyramids of Giza, and the Statue of Liberty already exist throughout the world. Such replicas are sometimes called “fake landmarks,” and they attract visitors on a regular basis. Some people find these sorts of replica landmarks to be tacky, they can't figure out why someone would want to visit the Leaning Tower of Niles, Illinois.

“We increasingly value ‘authenticity’ on our holidays, so you would have thought that the appeal of crafting a replica Stonehenge out of foam (yes, that really does exist in Virginia, USA) would be dying out,” explained travel writer Greg Dickinson. “Quite the contrary. The fake landmark industry is not only booming, but it could well play a significant part in the future of travel.”

One advantage of fake landmarks is that they help to preserve the originals. Sometimes, prized possessions are no longer shown to the public in order to keep them from becoming damaged beyond repair. In such instances, access to replicas can serve as the next best thing. For example, in 2013, a replica of King Tutankhamun's tomb was unveiled in Egypt not far from the original burial site.

Another advantage is that fake landmarks continue to draw travelers to areas that benefit from tourist dollars. Take the full-scale Parthenon in Nashville, Tennessee for example. It was originally constructed in 1897 for that city's Centennial Exposition yet remains a proud centerpiece of the “Athens of the South” to this day. In the not-too-distant future, these sorts of replica landmarks may be accessed through advanced forms of virtual reality rather than in person.

Retrieved from <https://www.telegraph.co.uk/travel/comment/fake-replica-landmarks-the-future-of-travel/>



Elliott, C. (2018, June 17). Are travelers cooling to the sharing economy? *USA Today*.

Travelers may be growing tired of the sharing economy. While many have opted to book accommodations through companies like Airbnb and transportation through companies like Uber, these trends may be shifting. In summer 2018, a growing number of travelers revealed preferences for staying in a hotel, renting a car, or taking mass transit. Some believe this may be the start of a “backlash against accommodations managed by amateurs and ground transportation options operated by part-time drivers.”

The Allianz Travel Insurance Vacation Confidence Index provides a yearly measure of traveler sentiments. In 2017, that index showed that 26% of Americans were “very likely” to use sharing-economy services while on summer vacations. In 2018, however, that number dropped to 19%. “This is the first time we have seen a dip in consumer sentiment since we started asking about shared services,” said Allianz spokesperson Daniel Durazo. It seems that more and more travelers are becoming tired of the “unknown” associated with the sharing economy: Will the home they’ve rented actually look like the one online? Will their ride arrive on time?

Ryan Shauers, author of the book *Big Travel, Small Budget*, believes that bad traveler experiences are leading to cooling in the sharing economy. “It seems that, as sharing sites grow in popularity, more people are signing up solely with the intention of using it as a money-making platform rather than also being interested in the hospitality and personal aspects which made it so amazing early on,” he said. The cure for “sharing fatigue” includes booking rooms in hotels with high standards and, rather than ride-sharing, taking a taxi or mass transit.

Retrieved from <https://www.usatoday.com/story/travel/advice/2018/06/17/travelers-wary-private-vacation-rentals-ridesharing/703147002/>

Gelber, E. (2018, April 25). What is sustainable travel: A primer. *Green Matters*.

People often hear that they should travel sustainably, but many have no idea what that means. According to the United Nations World Tourism Organization, sustainable tourism “takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities.”

That definition is a bit wordy and complex. To make things simpler, sustainable travelers are expected to do the following four things: (1) make direct connections with local people and find out what they think; (2) safeguard the local environment in order to preserve it for future generations; (3) respect the local culture and its heritage by sharing in the same activities as local residents; and (4) spend money to benefit the local economy. Rather than traveling on a large tour bus, for example, sustainable travelers should opt to travel in small-group vehicles and visit attractions at off-peak times of the day. The overarching goal of all sustainable travel is to prevent “overtourism,” which endangers the quality of life for local residents as well as the quality of experiences for tourists.

Retrieved from <https://www.greenmatters.com/travel/2018/04/25/Z201LPO/what-is-sustainable-travel>





Greenberg, A. (2016, August 5). Fake boarding pass app gets hacker into fancy airline lounges. *Wired*.

Przemek Jaroszewski, head of Poland's Computer Emergency Response Team, is a big fan of airlines' fancy status lounges. He recently used his hacker skills to ensure that he can get into these airline lounges all across Europe. In about 10 seconds, his program creates and displays fake QR codes on his cellphone, resembling those of an actual airline boarding pass. To date, however, he has not tested the program elsewhere, so he has no idea if it would work at U.S. airports. Jaroszewski is confident that it cannot be used to get somebody onto an actual aircraft and is not planning to publicly release this software.

Retrieved from <https://www.wired.com/2016/08/fake-boarding-pass-app-gets-hacker-fancy-airline-lounges/>

Griggs, B. (2015, October 8). 'Teleporting' to Hawaii: How virtual reality is changing travel. *CNN*.

Advances in virtual reality (VR) can enable individuals to travel the world without ever leaving home. For example, Oculus Rift is a VR headset that provides high-definition, 3-D travel experiences. Its users can experience the sights and sounds of London without actually traveling there. They can also experience a wide range of virtual destinations throughout the world.

At the moment, virtual travel is still in its early stages, and it is not considered to be mainstream. However, the travel industry remains interested in its long-term potential. Virtual travel is not intended to replace actual travel. Instead, its developers hope it will provide users with glimpses of real-world places that they will then choose to visit in person.

Retrieved from <http://www.cnn.com/travel/article/virtual-reality-travel/index.html>

Ha, A. (2016, October 11). Remote Year raises \$12 million to combine remote work and global travel. *TechCrunch*.

Remote Year provides a unique approach to international travel. Participants spend an entire year working abroad, relocating to a different city and country every month. They pay \$5,000 as a down payment, along with an additional \$2,000 per month for the first 11 months, to cover costs associated with their travel and housing accommodations.

In the 2014 initial offering of the Remote Year program, 25,000 individuals applied, competing for just 75 spots. Since then, the company has grown to include 500 participants in six traveling programs. Because of the intensity of the experience, not everybody who begins the yearlong program actually finishes it. "We don't believe we can make a bad employee into a good remote employee, but we can make a good employee a good remote employee," said Greg Caplan, Remote Year's founder and CEO.

Retrieved from <https://techcrunch.com/2016/10/11/remote-year-series-a/>

Houghton, M. (2018, April 29). 6 ways to be a sustainable traveler. *Forbes*.

The choices people make while traveling affect the world around them. Sustainable travel helps globetrotters to reduce their personal carbon footprints and respect our planet. The goal is to make a positive impact on the environment, society, and economy of other areas while visiting them as a tourist. Becoming an effective sustainable traveler requires doing research about the places one will be visiting in order to make good choices.

One priority of an effective sustainable traveler is to always minimize pollution and waste. This, in turn, helps to reduce the rate of climate change. Another priority is to do what one can to conserve natural environments, recognizing that tourists tend to consume far more than local residents. Supporting local people by buying locally produced items is essential, respecting and helping to preserve the local culture, which involves respecting and celebrating local traditions and adhering to local norms pertaining to dress code and personal behavior. Animal welfare must also be considered. For example, sustainable travelers should not engage in elephant rides or play with dancing monkeys. Giving back is another important aspect, ensuring that one's contributions will actually make a positive difference.

Retrieved from <https://www.forbes.com/sites/monicahoughton/2018/04/29/6-ways-to-be-a-sustainable-traveler>

Karantzavelou, V. (2018, June 18). PeriscopeVR virtual reality experience center arrives at JFK Terminal 4. *Travel Daily News*.

PeriscopeVR is now open in Terminal 4 of New York's John F. Kennedy International Airport. It is the first virtual reality (VR) experience center of its kind that can be accessed at an airport. For a six-month period, it will offer immersive entertainment experiences to traveling passengers.

"As a frequent traveler, I recognized there was a gap in the market for this kind of airport entertainment," said Lynn Rosenthal, PeriscopeVR's founder and CEO. Pricing ranges from \$1 to \$2 per minute, with the typical user experience lasting from five to ten minutes. The center's offerings "transport" users to a variety of exotic destinations. Games, musical offerings, and sculpting and painting tools are also available.

Retrieved from <https://www.traveldailynews.com/post/periscopevr-virtual-reality-experience-center-arrives-at-jfk-terminal-4>

Kushner, J. (2016, March 22). The voluntourist's dilemma. *The New York Times Magazine*.

Voluntourists are individuals who travel abroad for a week or two to complete a special project, such as building a school or establishing a temporary medical clinic. By 2008, approximately 1.6 million people were already providing volunteer services during their vacations. But just how admirable are their contributions? For example, how effective is it for untrained individuals to work on constructing a building abroad, when local builders could actually get the job done far more effectively and quickly?

Donating funds may be more useful than being a voluntourist. The funds that voluntourists use for their own travel could instead be used to provide local workers with a decent wage for short periods of time, helping a bit to ease global poverty. In addition, sometimes voluntouring ends up unintentionally causing real harm. Some volunteers possess and use specialized skills; however, we would be fooling ourselves to assume that most travelers offer these skills. At the same time, it is hard for many people to accept the truth: as amateurs, even the most well-intentioned individuals often do not have much to offer.

Retrieved from <https://www.nytimes.com/2016/03/22/magazine/the-voluntourists-dilemma.html>

Langford, G. & Weissenberg, A. (2018, March 1). Now boarding: The future of the travel, hospitality industry. *The Wall Street Journal*.

The global travel industry is one of the world's biggest and fastest-growing business sectors. Over the past two decades, the number of international travel departures throughout the world grew from approximately 600 million to 1.3 billion. In 2018, travel and tourism accounted for just over 10% of the global gross domestic product (GDP). Such ongoing growth is the result of factors including healthy consumer spending and continual demand for corporate travel.

Artificial intelligence (AI), automation, and voice technology will play important roles in the future of travel. AI, for example, is being used to provide increasingly more personalized experiences for individual travelers. Robotics and process automation are leading to the creation of driverless cars, approximately 10 million of which are expected to be traveling along roadways by 2020. Voice technology is enabling the growing use of digital home assistants as well as the installation of AI assistants in hotel rooms. Nevertheless, despite the ever-increasing contributions of technology to the travel ecosystem, international travel will still remain a people-to-people experience.

Retrieved from <http://deloitte.wsj.com/cio/2018/03/01/now-boarding-the-future-of-the-travel-hospitality-industry/>

Leighton, M. (2018, June 17). 15 travel purchases that made my experience with international travel a lot less stressful. *Business Insider*.

A wide range of products and tools already exist to make international travel easier. For example, the Skyroam Solis WiFi Hotspot and Power Bank, working with Skyroam day passes, provides a portable Wi-Fi hotspot that works around the globe. For \$25 per day of one's trip, Journy plans all of the day's travel details, ranging from researching local restaurants to identifying the best lodging options. Incipio's Stowaway credit card case keeps a traveler's ID, metro pass, debit and credit cards, and related items in one easy-to-carry place, as does the Classic Passport Case from Cuyana.

When it comes to packing, the Away Bigger Carry-On bag with 360-degree rotating wheels offers plenty of storage space, and the Dakota Backpack from Dagne Dover is perfectly designed for day trips around any country. Looking for high-quality earbuds that take up very little space in one of these bags? If so, the Jaybird RUN True Wireless In-Ear Headphones are a great choice. In need of a reading app that offers offline reading for your in-flight entertainment? Scribd offers unlimited reading of a large book library for only a few dollars per month.

To keep yourself looking your best during any trip, Ethique's Hair Sampler provides shampoo, conditioner, lotion, and other products in the form of solid beauty bars. Stowaway Cosmetics' Every Day Kit provides a range of makeup essentials. Mighty Patch Hydrocolloid Dots serve as a quick-and-easy blemish concealer. Your teeth will appreciate the Boie Antimicrobial Toothbrush, which you can use before drinking Som Sleep to help you fall asleep faster. Your feet will relish in the comfort of Bombas travel socks as well as Vivobarefoot Kanna, a type of "barefoot shoes" that roll into a ball about the size of a pair of socks.

Retrieved from <http://www.businessinsider.com/international-travel-must-haves-packing-list-recommendations-2018-6>

McCartney, S. (2018, May 30). A new level of security on your business trip. *The Wall Street Journal*.

A growing number of companies now track their employees while they are traveling. Employers send travellers cellphone updates to warn about things like emergency situations and terrorist attacks. This process is referred to as “duty of care.” It is becoming quite common in the areas of security and corporate travel. Knowing where employees actually are is important for managing a company’s risk.

In 2016, approximately 54% of U.S. companies had established a strict travel-safety policy. By 2017, that number had increased to 74%. Duty of care practices can inform employees about everything from natural disasters to major traffic jams. However, questions currently remain as to whether companies are responsible for sending such updates when an employee adds a few days of leisure travel to the end of a business trip.

Retrieved from <https://www.wsj.com/articles/a-new-level-of-security-on-your-business-trip-1527685866>

Millard, R. (2018, June 22). Is a house swap holiday the secret to saving money (and living like a local)? *The Telegraph*.

Want to save money while traveling abroad? Consider a house swap. That is when you live in another family’s home while they spend time in yours. Doing so is a nice way to experience life like a local rather than a tourist. However, you need to be cautious when engaging in a house swap. House swapping companies can help you find the ideal place, but all agreements are made between the two homeowners.

Here’s how the process works to exchange homes. First, you sign up for an annual membership with the house swapping company of your choice. Then, you add information about your own property to the company’s website and begin searching the listings of others. Once you find a place where you’d like to stay, you contact the other homeowner directly to arrange the home exchange. But beware: house swap companies do not actually visit the properties listed on their sites. This means you must study all online photos and read all online reviews very carefully before moving forward.

Retrieved from <https://www.telegraph.co.uk/travel/advice/Guide-to-house-swap-holidays/>

Mohn, T. (2018, May 31). 5 tips to sleep better on your next trip. *The New York Times*.

People who change time zones while traveling internationally can have trouble sleeping, both on the plane and after they arrive. To help themselves sleep better on such trips, they should start adjusting their bedtime before leaving so that it will be more in sync with the local time of their destination. While in the air, they should then load up on carbohydrates and avoid both caffeine and wine. Once on the ground, they should avoid the temptation to take a long nap the day they arrive. Using simple items like sleep masks and headsets can also help an individual to get a better night’s sleep upon arrival.

Retrieved from <https://www.nytimes.com/2018/05/31/travel/sleep-travel-tips.html>





Morello, C. (2018, January 10). State Department updates travel advisories to make them more understandable. *The Washington Post*.

In January 2018, the U.S. State Department updated its system of travel advisories. The previous system used a combination of “travel alerts” and “travel warnings,” but most people never really understood the difference between the two. The new system uses common-sense language to make everything much clearer.

The new system features four levels of advisories. Level 1 is the lowest advisory, and it urges travelers to “exercise normal precautions” when visiting other countries. Level 2 suggests that travelers should “exercise increased caution” when visiting specific countries. Level 3 advises individuals to “reconsider travel” to countries that are currently experiencing serious risks. Level 4 is the highest-level advisory, and it is used for countries with a “greater likelihood of life-threatening risks,” such as in areas where the U.S. government would have limited ability to assist travelers who encounter such risks.

For travelers desiring just a bit more information about specific risks, the new advisory system also uses one-letter codes. The letter “C,” for example, is used to indicate risks pertaining to crime. In addition, “E” is used for special events, “H” is used for health risks, “T” is used for terrorism, and “U” is used for civil unrest. For anything that does not fall into one of those categories, the letter “O” is used to indicate some other reason.

Retrieved from <https://www.washingtonpost.com/world/national-security/state-department-updates-travel-advisories-so-theyre-understandable>

Morris, H. (2018, April 17). Project Sunrise: The battle to fly non-stop to any city in the world. *The Telegraph*.

In March 2018, Qantas offered its first 8,991-mile flight between London and Perth. It represented the first direct flight between the United Kingdom and Australia. The Australian airline is currently engaged in what it calls Project Sunrise. It involves the development of a plane that can fly from any one place in the world to any other destination without having to land in between. In other words, Qantas’ ultimate goal is to make all parts of the world reachable on a non-stop basis from anywhere else. The airline recently challenged aircraft manufacturers Airbus and Boeing to help it build a plane capable of doing so.

Retrieved from <https://www.telegraph.co.uk/travel/news/project-sunrise-ultra-long-haul-flights/>

Pardes, A. (2017, May 2). How to prep your phone for international travel. *Wired*.

In the past, using a cellphone while abroad was tricky. Today it is easier than ever. One way to avoid foreign cellphone charges is to only use your device in Wi-Fi mode while traveling. For greater connectivity, you can add a global package to your regular cellular plan. This allows you to use your cellphone the same way while traveling as you do at home. If you plan to use your device a lot, consider replacing its SIM card with one that you purchase from a local service provider while abroad.

Retrieved from <https://www.wired.com/2017/05/prep-phone-international-travel/>

Parker, L. (2017, May 31). AI and voice search — 2018’s top travel trends. *Forbes*.

The role of technology in international travel continues to grow. It allows companies in the travel industry to sort through and analyze all kinds of data. In addition, artificial intelligence (AI) is making it easier to identify meaningful trends in the information that exists. AI is helpful in providing quicker and more personalized service to individual travelers. It also helps both travelers and travel-related businesses conduct meaningful voice searches for data they need.

In the coming decades, China will play an important role in the future of international travel. Currently, only 6% of Chinese people have a passport, and the majority of China’s residents have never set foot on an airplane. Containing the world’s largest population, China is expected to become a major source of international travelers in the near future.

Natural disasters, terrorist attacks, and other global events seem to have greater impact on the global travel industry today than in the past. Safety and security are growing concerns for travelers. Political instability of destination countries is also a growing concern. Some people believe the sharing economy will put traditional hotels out of business, but travel experts disagree. Instead, they point out that traditional hotels will adapt in order to compete.

Retrieved from <https://www.forbes.com/sites/lauraannaparker/2017/05/31/a-i-and-voice-search-2018s-top-travel-trends>

Reints, R. (2018, June 21). Orlando becomes first airport to require face scans of all international travelers. *Fortune*.

Florida’s Orlando International Airport is the first U.S. airport to require face scans of all travelers arriving from and departing on international flights. This security measure sends the facial images to U.S. Customs and Border Protection (CBP), which compares the images to those of photos already on file (from passports and driver’s licenses). In five seconds or less, the CBP database confirms if the traveler is actually whom he or she claims.

Privacy advocates have expressed concern about this new security measure. They point to a lack of rules about how the data collected will actually be used or what will happen to travelers who are blocked in error from boarding flights. “We’re not talking about one gate. We’re talking about every international gate, which is a huge expansion of the number of people who will be scanned,” said Harrison Rudolph, an associate with Georgetown University’s Center on Privacy and Technology. “Errors tend to go up as uses go up.”

Retrieved from <http://fortune.com/2018/06/21/orlando-first-airport-face-scans-international-travelers/>



Reiss, R. (2016, February 8). Travel leaders reveal what's next for the \$7 trillion global travel sector. *Forbes*.

Figures from the World Travel and Tourism Council (WTTC) show that global tourism generated \$7.6 trillion in 2014. In recent years, consumers have begun to expect greater service, personalization, and value in their travel experiences. As a result of ongoing advances in digital technologies, travelers are in the process of transitioning from being *takers* of travel experiences to being *co-makers* of them. In other words, they have ever-increasing opportunities to customize their own travel plans to best meet their personal desires and needs.

When it comes to value, "The key is deeply understanding customer needs and meeting them perfectly," said Terry Jones, chairman of Wayblazer and founder of Travelocity.com. Laura Fink, vice president of global marketing and communications with American Express Travel and Lifestyle Services states, "Travelers want a personalized experience. When we spoke to people about their expectations for the future, they indicated a strong willingness to supply more personal information in order to receive a [better travel] experience."

According to travel experts, the future of travel will be simpler and easier for those who engage in it. Different kinds of travel-related companies, such as airlines, hotels, and rental car companies, will need to work together. "What we are seeing is a battle for the edge; everyone is pushing further and further to capture you," Jones said. "The true winner will be the person whose ethos will be to come up with a seamless application that is both my 'digital and personal assistant' and also involves some kind of human interaction."

Retrieved from <https://www.forbes.com/sites/robertreiss/2016/02/08/travel-leaders-reveal-whats-next-for-the-7-trillion-global-travel-sector>

Sachs, A. (2017, May 18). What is 'green travel,' anyway? A beginner's guide to eco-friendly vacation planning. *The Washington Post*.

Green travel involves making environmentally sound choices. Doing so has a positive effect on the places a traveler visits. Choosing a green destination is a great way to start. This is a city or country that is deeply committed to planet-friendly practices and policies. For example, Namibia makes it a priority to protect natural resources and habitats. Uzbekistan emphasizes outdoor culture and offers more than 1,000 varieties of locally grown apples. Norway, Sweden, and Finland consistently rank among the top green destinations in the world. Green communities prioritize ample public transportation, designated bike lanes, farmers markets, and walkable neighborhoods.

Green transportation is also important. That is why numerous adventure-tour operators offer walking, hiking, and cycling vacations. Buses and trains help to limit negative effects on the environment. Some of the greenest transportation options run on electric power and alternative fuels. Countries such as Japan and Switzerland use hydroelectricity to power hybrid buses and trains. The cruise industry is currently investing billions of dollars in new technologies and fuels. Airplanes, however, are considered the "black sheep" of transportation options. That is because currently there really are not any green ways to fly.

Once you arrive at your international destination, try to stay in a green hotel. No matter where you stay, greener practices include participating in a hotel's linen-and-towel reuse program and refilling your own glass beverage container rather than drinking water from plastic bottles. Decline daily housekeeping and avoid buffets at meal time, because they waste plenty of uneaten food. In your leisure time, participate in green activities. These include birdwatching, hiking, kayaking, sailing, scuba diving, and swimming. If you decide to take a tour, select one that employs local tour guides and donates part of its proceeds to a local charity or conservation group.

Retrieved from <https://www.washingtonpost.com/news/style/wp/2017/05/18/how-to-plan-an-eco-friendly-vacation-from-start-to-finish/>

Toesland, F. (2018, May 31). Five futuristic modes of transport transforming travel. *Raconteur*.

Futuristic modes of travel transportation are already being developed today. Hyperloop, for example, uses reduced-pressure tubes and pressurized capsules to transport passengers quickly (such as from San Francisco to Los Angeles in only 35 minutes, at speeds up to 700 miles per hour). Still a few years from being perfected, autonomous helicopters will soon be similar to “self-driving cars of the skies.” Super-trains, which use vacuum tubes to reduce air friction, will transport passengers faster than ever before. Networks of elevated cycle paths above city streets will keep cyclists safer while also reducing roadway congestion. Smart roads will enable wireless communication between roadways, and smart cars will make vehicle transportation safer than ever before.

Retrieved from <https://www.raconteur.net/business/five-futuristic-transport-modes>

Westerman, K. (2018, May 31). 5 top reasons you should travel with your kids. *Forbes*.

The percentage of U.S. residents who travel internationally with their children has been decreasing in recent years. The high cost of international travel is one big factor in this decline. Another big factor is that it is often easier to leave the little ones at home. In part, that is because children are not always welcome by travel-service providers. In addition, many people frown upon children behaving badly in restaurants and airplanes, especially on long international flights.

There are at least five good reasons why parents should travel internationally with their children whenever possible. First, doing so helps to make them citizens of the world. Children are more adaptable than adults. Exposing them to otherness in its various forms makes them more accepting as they mature. Second, it is good to expose them to the unique foods offered throughout the world. Third, exposing their brains to other languages helps children develop their English-speaking skills more quickly. Fourth, traveling internationally with children serves to build their confidence and independence while they are young. Kids tend to adapt well to new environments and are quick to adopt new habits. Fifth, doing so increases children’s tolerance for discomfort, training them to build patience and engage in various forms of problem-solving from an early age.

Retrieved from <https://www.forbes.com/sites/kimwesterman/2018/05/31/5-top-reasons-you-should-travel-with-your-kids>

Zain, A. (2018, June 21). Take vaccines one month before travel: Experts. *Khaleej Times*.

Planning an international summer vacation? If so, health officials recommend getting all necessary pre-travel vaccinations at least one month before you depart. This helps to ensure the effectiveness of the vaccines you receive. In some countries, such as the United Arab Emirates, traveler’s clinics even provide the vaccinations free to their residents and at discounted rates for expatriates. “We wanted to make it affordable and ask people to take care of their health,” said Dr. Fatma Al Attar, head of the traveler’s clinic team of the United Arab Emirates’ Ministry of Health and Prevention (MoHAP).

Many people today need to be educated about the health risks they might encounter when visiting other countries. Required vaccines differ depending on where individuals plan to visit. International tourists need to know that, often, more than one vaccine is required to keep them healthy while traveling. They also need to realize that, in order to be effective, many vaccinations require a second dose two or more weeks before they depart.

Retrieved from <https://www.khaleejtimes.com/news/uae-health/take-vaccines-one-month-before-travel-experts>

Zhang, C. (2018, January 31). The four breakthroughs that will revolutionize long-haul flights in 10 to 15 years. *Australian Broadcasting Company*.

According to estimates from the International Air Travel Association, the number of international passengers will grow from approximately 3.8 billion in 2016 to a whopping 7.2 billion by 2035. Between now and then, several trends will help to revolutionize their flying experiences. For starters, long-haul and ultra-long-haul flights from one international destination to the next will become the norm. In addition, supersonic aircraft will increasingly operate alongside today's current aircraft. The supersonic jets will be able to transport passengers much more quickly, such as from Tokyo to San Francisco in only five hours (rather than the 11 hours such a flight typically takes today). Airplane cabins will be improved with more comfortable designs, better food options, and enhanced entertainment systems. Advanced technologies, such as facial recognition and retinal scanning, will operate using artificial intelligence to improve and speed up security procedures.

Retrieved from <http://www.abc.net.au/news/2018-02-01/flight-of-the-future/9380290>



Digital Resources: International Travel

30 BEST TRAVEL TIPS

Description: 7-years ago, Matthew sold all of his belongings and began traveling the world; this blog post contains his top 30 tips for travel.

Karsten, M. *My 30 Best Travel Tips After 7 Years Traveling the World* [Blog Post]

Retrieved from <https://expertvagabond.com/best-travel-tips/>

A LOOK AT SUSTAINABLE TOURISM

Description: This animated video shows two versions of travel: one in which the main character disregards sustainable tourism and another in which he discovers culture and lifestyles while positively impacting and respecting the local environment.

Universitat de Barcelona. (2017, December 17). *Animated Science. Episode 4. Sustainable Tourism* [Video File]

Retrieved from <https://www.youtube.com/watch?v=I73nMGS1IK0>

AIRPORT SECURITY

Description: An explanation of the machines a person will encounter as they go through airport security

SciShow. (2017, December 08). *The Science of Airport Security* [Video File]

Retrieved from https://www.youtube.com/watch?v=bXNbe_jsoMg

APPS FOR SAVVY TRAVELERS

Description: An overview of the best travel apps to help international travelers save money and time while finding the best sites and food.

Dealchecker.co.uk. *Must Have Apps for the Savvy Traveler* [Infographic]

Retrieved from <http://www.dailyinfographic.com/helpful-apps-for-the-savvy-traveller>

AURA, THE ROOM SERVICE ROBOT

Description: This webpage includes an article, video, and photo gallery showcasing AURA, the hotel robot.

Street, F. CNN Travel. (2017, August 15) *Introducing AURA, the Room Service Robot*

Retrieved from <https://www.cnn.com/travel/article/singapore-room-service-robot-aura/index.html>

BEST TRAVEL PODCASTS: A COLLECTION OF PODCASTS*

Description: This collection of podcasts covers a range of topics from weekly travel news to where to visit and what to do in places around the world.

Travel Roundup Podcasts. (2018, July) *PlayerFM*

Retrieved from <https://player.fm/featured/travel-roundup>

THE FUTURE OF TRAVEL*

Description: This “Future of Travel” special by CNN is an interactive collection of videos covering topics related to the future of travel, including virtual reality, supersonic travel, jet engines, and more.

CNN. *The Future of Travel*

Retrieved from <http://www.cnn.com/interactive/2014/11/specials/future-of-travel/>

GROWING INDUSTRIES

Description: This infographic provides a data-based look at the hospitality and tourism industries.**

Sehnaoui, K. (2016, December 29). *Hospitality and Tourism: A Growing Industry* [Infographic]

Retrieved from <http://infographic.ly/infographic-hospitality-tourism-growing-industry/>

THE HARM OF VOLUNTOURISM**

Description: This news report highlights how voluntourism causes more harm than good, especially in orphanages.

The Feed. (2017, September 18). *Voluntourism: More Harm Than Good* [Video File]

Retrieved from <https://www.youtube.com/watch?v=jr3Kp9v9j2g>

HOW TO TRAVEL WITH KIDS

Description: This dynamic “how-to” website outlines how to travel with kids from start to finish. It includes packing lists for children from infants to teenagers and provides guidance for picking a destination and planning an itinerary.

Vora, S. *New York Times.* (2018) *How to Travel with Children*

Retrieved from <https://www.nytimes.com/guides/travel/travel-with-kids>

HOW VIRTUAL REALITY COULD CHANGE TRAVEL

Description: A quick look at how virtual reality could change “travel” in the future; the website includes a full article and a photo gallery.

Griggs, B. *CNN Travel* (2015, October 08). *'Teleporting' to Hawaii: How Virtual Reality is Changing Travel*

Retrieved from <http://www.cnn.com/travel/article/virtual-reality-travel/index.html>

NATIONAL GEOGRAPHIC INSTAGRAM

Description: This is National Geographic's official Instagram account, where you can experience the world through the eyes of National Geographic photographers.

National Geographic @NatGeo

Retrieved from <https://www.instagram.com/natgeo/>

PREPARE FOR EVERYWHERE

Description: This infographic provides general best practices for travel preparation from the Centers for Disease Control and Prevention.

CDC. *Prepare for Everywhere - Travel Preparedness.* [Infographic]

Retrieved from <https://www.cdc.gov/phpr/infographics/pfe-travel.htm>

THE SHARING ECONOMY

Description: This video describes the sharing economy and includes a brief article.

Lieberman, M. *Travel & Leisure.* (2016, July 27). *The Spotlight: How Will the Sharing Economy Change Travel?* [Video File]

Retrieved from <https://www.travelandleisure.com/tags/videos-travel-tips/how-sharing-economy-will-change-travel>

STAY HEALTHY WHEN YOU TRAVEL

Description: This short video provides tips for staying healthy while traveling.

Bowman, K. (2018, July 02). *Stay Healthy When You Travel* [Video File]

Retrieved from <https://www.cnn.com/travel/videos/travel/2018/07/02/stay-healthy-when-you-travel.cnn>

SUPERSONIC TRAVEL

Description: This video explains the challenges and possible future of supersonic travel.

SciShow. (2016, March 09). *The Future of Air Travel.* [Video File]

Retrieved from <https://www.youtube.com/watch?v=OoetqEJafy0&t=258s>

TIPS FOR INTERNATIONAL TRAVEL

Description: This infographic shares best practices for international travelers.

Nationwide. *Tips for International Travel*. [Infographic]

Retrieved from <https://www.nationwide.com/international-travel-tips.jsp>

TRAVEL MONEY TIPS

Description: This short infographic shares tips about money and payments when traveling internationally.

MasterCard. *International Travel Money Tips*. [Infographic]

Retrieved from <https://newsroom.mastercard.com/photos/infographic-travel-money-tips/>

THE ULTRA LONG HAUL FLIGHT, REIMAGINED

Description: This short (8-minute video) describes how Qantas helps travelers of the 'Kangaroo Route' avoid jet lag and includes history on why Singapore has been a traditional stop on this route

CNN. (2018, April 04). *The Ultra Long Haul, Reimagined*. [Video File]

Retrieved from <https://www.cnn.com/travel/videos/travel/2018/04/28/business-traveller-kangaroo-route-qantas-singapore-jetlag-b.cnn>

VOLUNTOURISM

Description: This article shares a positive look at voluntourism as an option during travel.

NBC. (2016, July 10). *Voluntourism Allows People to Vacation with a Purpose*. [Video File]

Retrieved from <https://www.nbcnews.com/video/voluntourism-allows-people-to-vacation-with-a-purpose-722180675742>

WHAT TRAVELERS NEED TO TRAVEL INTERNATIONALLY

Description: This blog provides an overview of considerations travelers should keep in mind when traveling internationally.

VitalChek. *What Travelers Need to Travel Internationally*. [Infographic]

Retrieved from <https://blog.vitalchek.com/wp-content/uploads/2017/10/What-travelers-need-for-international-travel-vs4.jpg>

**not all content has been screened for use in classroom*

***may be best for older or more advanced audiences*



Appendix

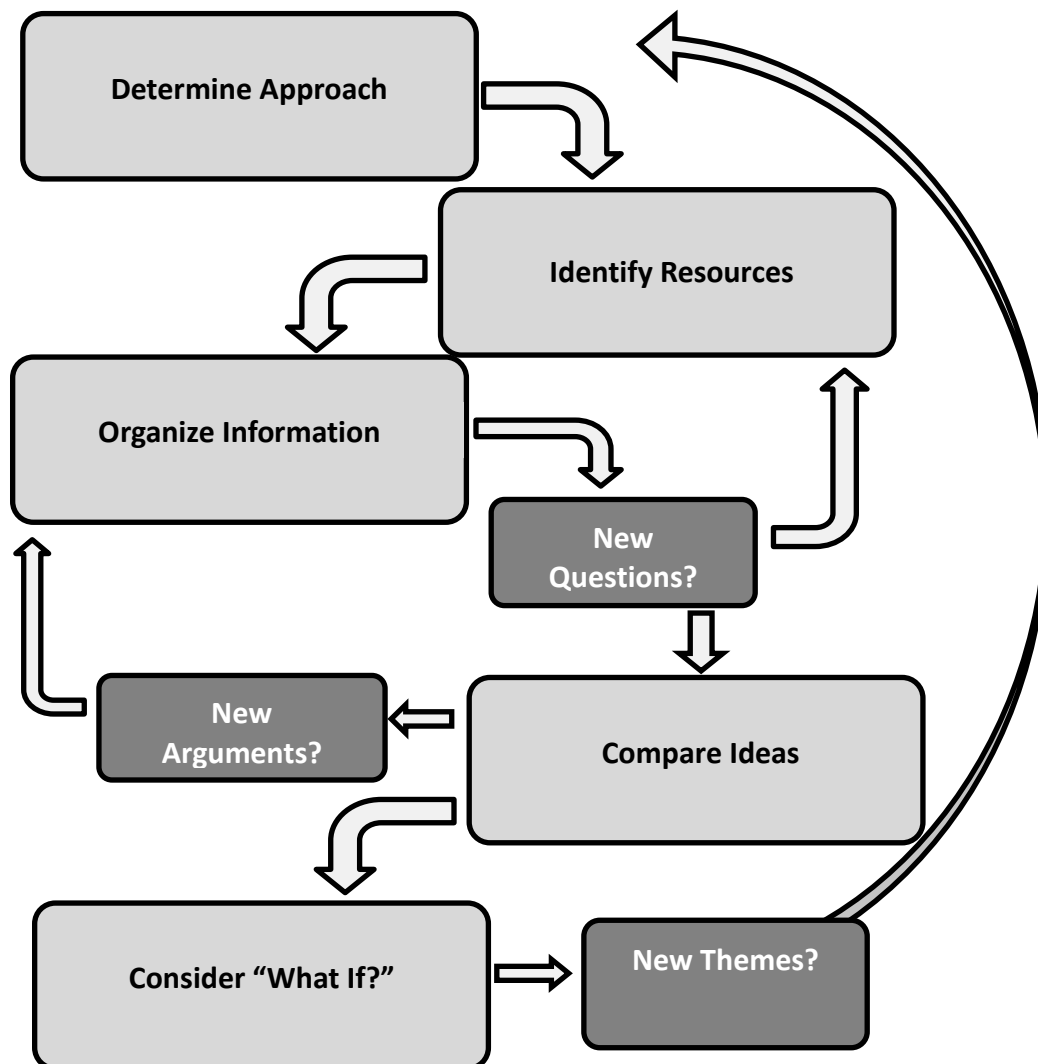
Research
Strategies,
Problem Solving
Tools, &
Practice Future Scene



Strategies for Research

It has been said that research is the “unofficial” first step of the problem solving process. Research gives an understanding of the topic and a “jumping-off point” when presented with a Future Scene. Although students do not use every piece of information they find for each topic, a broad base of knowledge is important. A well-rounded understanding of the past and current status of a topic allows students to better extrapolate those concepts into the future. A solid knowledge base serves students well beyond FPS competitions and often sparks ideas for school projects, creative writing, and beyond. The Categories of Knowledge section that follows can be applied to each step of the research process to expand thinking and approach themes from new or nonobvious directions.

A goal of Future Problem Solving is to understand the topic from which the problem arises, as well as the problem itself. Gathering knowledge is a life-long pursuit and thus a never-ending cycle. There are effective strategies to follow logical paths of inquiry and manage the information gained in a useful manner.



Determine Approach

Determine what you already know about the topic. Generate thoughts about your knowledge as a group. Discuss thematic vocabulary that will help you locate and understand your resources. At the beginning of each topic, consider an online collaboration site to gather and organize main concepts discovered by research.

- If more than one person is working on the topic, divide up the research responsibilities. One person might do interviews, one person might search through magazines, one person might search for videos.
- Organize bookmarks and use them. Every time you find an article, video, or infographic on the topic, save the information to your online account to share with your team.
- Set time limits on your research. Deadlines often create higher productivity and efficiency.
- Online collaboration tools are beneficial to organize and discuss information.
 - www.nowcomment.com
 - www.diigo.com
 - Virtual Classrooms – [Google](#), [Microsoft](#), etc.
 - www.edmodo.com
 - www.slack.com
 - www.livebinders.com

Identify Resources

Researching a subject thoroughly goes well beyond a single article or a chapter in a book. Consider a wide range of sources to gather a wide range of ideas and opinions.

Articles – Read everything you can get your hands on - both online and in print. Magazines, books, pamphlets, newspapers, and blogs are a few suggestions. Specific sources may include:

- News articles – consider local, national, international, and specialty papers
- Futuristic periodicals – The Futurist, Discover, Futurism, etc.
- Library searches – librarians can identify sources you did not even know exist
- Internet searches – use key terms and concepts you know to search a larger spectrum

People – Talk with the people around you. Interview topic stakeholders, people who impact and are impacted by a topic. Other students, parents, teachers, librarians, and professionals in the field possess both research information and a wealth of creative ideas and opinions.

Contacting people is an excellent way to compile a variety of ideas.

- Researchers
- Professionals
- Decision-makers
- General public

Media – Watch and listen to the things around you - videos, movies, TV shows, commercials, radio shows, podcasts, etc., to gather valuable information on a topic. Look for nonfiction as well as fiction.

- Newsmagazine shows – NZ Story, 60 Minutes, 20/20, Frontline, Panorama

Organize Information

After collecting a large volume of information, the organization process helps one to make sense of all the ideas. It also serves as a useful way to help one remember new knowledge. Similar items may be grouped together. Or consider pairing competing ideas. One of the best ways to organize information is to categorize it. As you organize ideas new questions may arise or underrepresented concepts may emerge. Identify new resources to help fill in these gaps.

Compare Ideas

Think about and discuss the reliability of the information gathered. Are you gathering the information with any kind of personal bias about the topic? Are sources of information about the topic biased in any way? In order to know what to trust, it's important to consider the source and slant of the information being gathered. When examining resources, discriminate between those with hard facts and those that offer only biased opinions. While both types of information can be useful, keep in mind that fact and opinion are not necessarily interchangeable.

- Who is presenting the argument? Do they have a personal interest?
- Who has endorsed or requested the information?
- Are all opinions represented?

Consider "What If?"

Understanding the present allows students to move forward in identifying future images. Future images can be structured in many ways – possible, probable, preferable, and unfavorable. With the knowledge gained from your research, consider what the future might look like.

- What do you want the future to look like?
- What do you hope does not happen?
- What happens if a likely advancement occurs? What if it doesn't?
- What would an unexpected future look like?

Categories of Knowledge

Organizing information helps make sense of the knowledge gained, to see how it all fits together. The goal of categorizing is to highlight connections between various pieces of information. Several types of category lists exist. You might pick one of the following ways to generate a list of people to contact for interviews. Another might help you identify common themes among the research you have collected. Categories are useful in understanding the information you gather.

Categories prepared for a specific subject

A Concept Map is beneficial in organizing information. Issues relating to the topic are organized under the topic with like items recorded together. A Concept Map example (Futures Wheel) is located in the Appendix.

The FPS Category List

Almost any issue will fit into at least one of the categories on the FPS Category List provided on the next page. The FPS Category List usually serves as a sufficient starting point for identifying categories for any topic. Keep in mind, however, not every topic has information related to every category on this list.

Categories you generate on your own

You may decide to generate your own category list by generating a sufficient number of categories to classify the information. Are there consistent subsets of a topic that emerge from your research? Do not divide the information into so many parts that the category list becomes a useless form of classification.

Categories that are generic systems of classification

When categories are not emerging easily, turn to some “tried and true” systems of classification. “Animal, Vegetable, Mineral” is an example of a generic system of classification. “Causes, Effects” is another. “Physical, Mental, Spiritual” is a third. You may want to make a list of other generic systems of classification you could use if more specific systems do not cause trends in the information to emerge.

FPS Category List

Arts & Aesthetics



Basic Needs



Business & Commerce



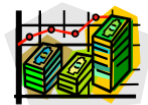
Communication



Defense



Economics



Education



Environment



Ethics & Religion



Government & Politics



Law & Justice



Miscellaneous



Physical Health



Psychological Health



Recreation



Social Relationships



Technology



Transportation



Tools for Generating

Generating tools are used to create new and unique ideas. Although they are often used in creating challenges and solution ideas during the problem solving process, these tools are useful when researching a topic. The most commonly known generating tool is brainstorming and its variations. As you read articles in *Readings, Research, and Resources*, use these tools to help you generate ideas to examine a wide range of ideas.

Generating Guidelines

When generating ideas, it is important to keep four guidelines in mind:

- **No Evaluation** should be given while generating ideas. Both criticism and praise are ruled out. Evaluation of ideas comes at a later time.
- **Quantity** is important. The larger the number of ideas, the greater the chance of reaching the best ideas!
- **Hitchhiking** is encouraged. Combining and improving ideas leads to great possibilities. When generating ideas, the sum is definitely greater than its individual parts.
- **Wild and Crazy** ideas can be very productive. Offbeat and silly ideas may trigger practical breakthroughs.

Ladder of Abstraction

When considering a concern or challenge, this tool is used to broaden or narrow the search for possibilities and new options. Broader or more abstract ideas emerge as you state your concern at the bottom of the ladder and work up the ladder, asking “why;” narrower or more specific options emerge as you work down the ladder, asking “how” you will address your concern.

Morphological Matrix

Using a chart with 4 columns and 6 rows, team members identify four major aspects (for example - people, setting, obstacle, goal) of the topic and place across the top row (one per column). Next ten specific topic related elements of each heading are listed in the columns. Random combinations are then formed to create new and interesting possibilities.

SCAMPER

This tool is used to change the attributes of an idea by: **S**ubstituting, **C**ombining, **A**dapting/**A**dding/**A**ltering, **M**inifying/**M**agnifying, **P**utting to other uses, **E**liminating/**E**laborating, **R**eversing/**R**earranging/**R**educing.

Silent Brainwriting

Each team member has a sheet of paper with 3 columns and 4 rows (12 boxes). Each person generates three ideas related to the topic, writing one idea in each of the boxes in the first row. Next, the sheets are passed around the group so the ideas can be read and new ideas are added, row by row, until all sheets are filled and all ideas have been read.

Tools for Focusing

Focusing tools are used to evaluate, compare, categorize, and highlight ideas. Simply gathering a large volume of information is not helpful, if you are not able to analyze it and focus on central concepts.

Focusing Guidelines

Focusing tools aid in selecting an idea that is workable, relevant, and unique. The following guidelines will help you focus:

- **Use affirmative judgment** to be thorough but positive when analyzing, refining, or choosing possibilities.
- **Follow a plan** and use the tools that assist in focusing.
- **Keep an eye on the goal** to focus on what is wanted and needed in order to accomplish the goal.
- **Stay open to all ideas** that might be workable. Look for new and unusual possibilities.

Identifying Hits

Read through your generated ideas and identify those which are on target for your goal. Develop your “hits” into complete ideas.

Hot Spots

Identify clusters of ideas that share common elements. Discuss how the ideas are similar. How are they different? Which will be most useful for your needs?

Advantages, Limitations (to overcome), Unique Potentials (ALoU)

Consider the advantages of each idea and the limitations you will need to overcome when dealing with the topic. Look for unique potentials one idea may have as compared to another.

Sequencing

Arrange options or possibilities in logical order. One example is time frame for completion (short range, medium range, long range). This is especially useful in developing an Action Plan.

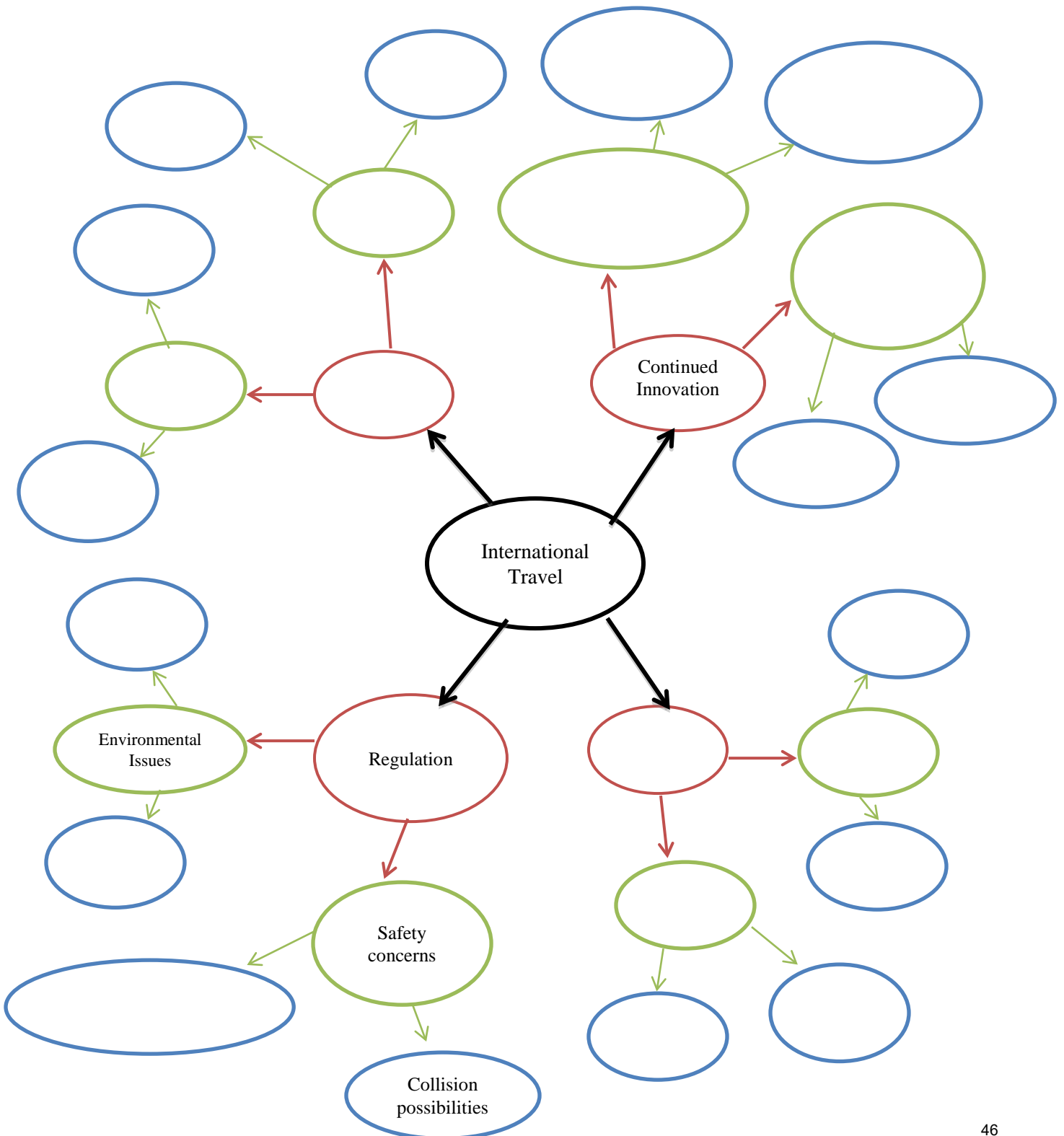
Paired Comparison Analysis (PCA)

When considering multiple possibilities, compare one possibility against another idea, one pair at a time, until all possible pairs have been analyzed. (Comparing A, B and C: A and B would be compared, then A and C, and finally, B and C.) As the favorite option is determined in the pair, a rank of 1, 2, or 3 is assigned according to degree of importance.

The Appendix contains examples of generating and focusing tools applied to the current topics. More resources can be found at www.creativelearning.com.

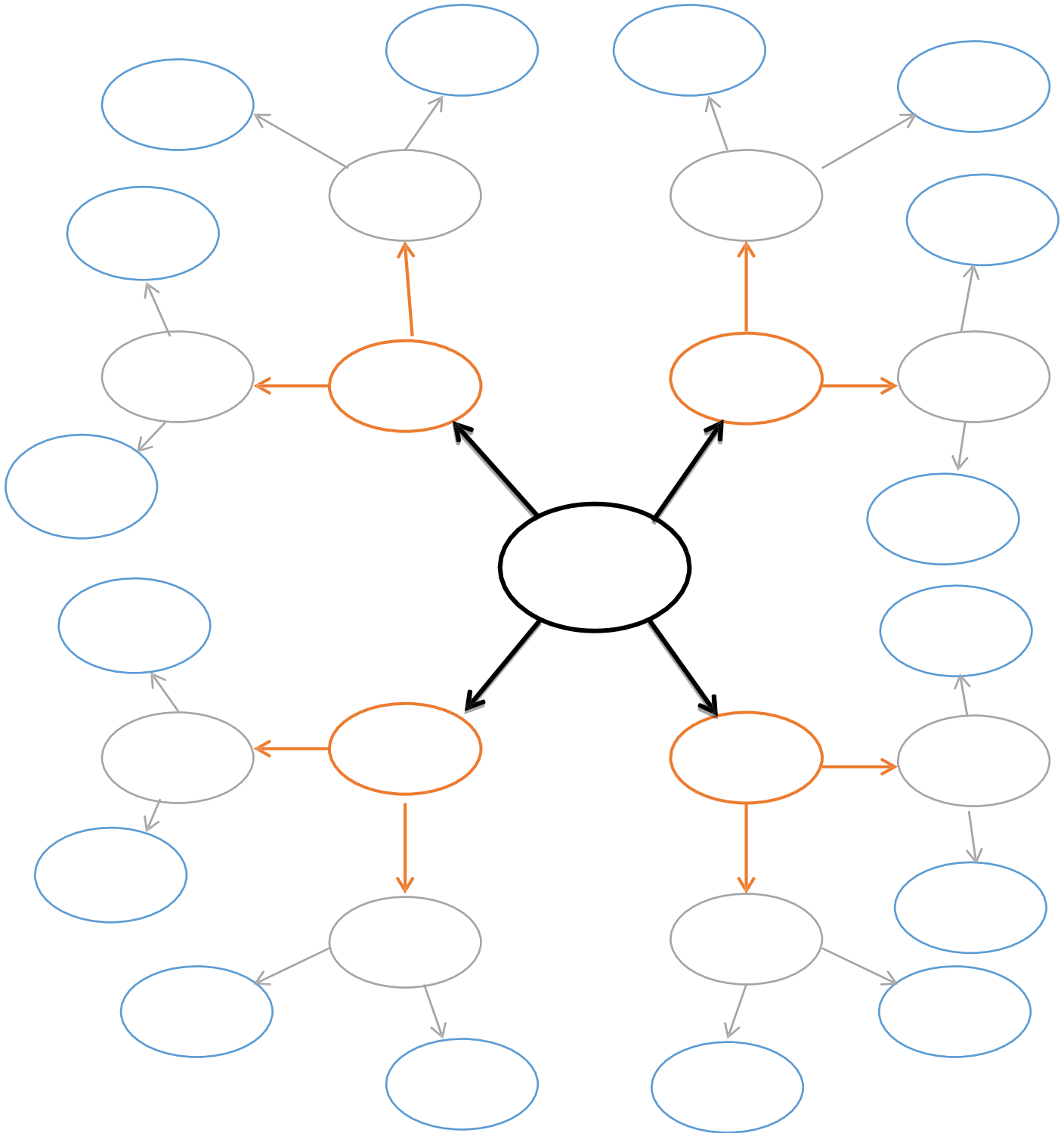
FUTURES WHEEL

A Futures Wheel is a tool that allows you to predict future events. Using the knowledge you have of the current situation, consider positive and negative results of an idea, event or trend. The starting idea is in the center of the page in the black circle. Fill in the red circles with first-order effects that could result from the starting idea. For each first-order effect identify two second-order effects (green circles). Repeat for the second-order effects to identify third-order effects (blue circles). After completing the Futures Wheel discuss which ideas on your wheel could be challenges and others could be solutions.



FUTURES WHEEL

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Dear Problem Solvers,

Last year, in 2056, Lunar Safari Inc. led almost 1,300 tourists on hikes through the Sea of Tranquility. These first moon tourists gladly paid \$35,000 each for a 5-day trip, including transportation, lodging, meals and space suit rental. But more than anything, they were paying for the privilege of saying they were among the first civilians to set foot on the moon.

Since the first commercial earth-orbiting flight launched in 2022, the space tourism industry has made almost \$20 million a year. Space travel and tourism is projected to reach annual revenues of \$10 billion per year.

My company, Lunar Safari, made a breakthrough in the industry by offering the first moon tours. Our clients traveled and stayed in the “Royale Lunar Cruiser,” a huge spacecraft with facilities to support 50 guests and ten crewmembers on each voyage. Though its name is intended to remind travelers of the luxurious ocean liners that carry people through the Caribbean, the Royale is more like a small modular home. Ten guests sleep in each of the five cramped guestrooms, and the travelers and crew share minimal dining and bathroom facilities.

Everyone on the cruiser eats packaged meals similar to those provided for U.S. astronauts. Tourists wear regulation space suits on moon ecotours, available exclusively to Lunar Safari through a special arrangement with NASA.

At first, the demand for our vacation package was overwhelming — every trip was booked. However, as we enter our second year in this business, we are already noticing a decrease in reservations. Travelers who can afford a \$35,000 vacation are accustomed to a much greater degree of comfort than we provide.

Market research shows that to attract new customers, and to encourage adventurers to return to the moon, we need to create more comfortable, familiar facilities. To that end, we are beginning the construction of a permanent luxury hotel on the moon. We’re calling it Casa de Luna.

The architects have produced a plan and scale model for a hotel that accommodates 200 people, including staff, and we are looking into companies for the construction work. The hotel will use solar energy, and compressed oxygen will be supplied. From the outside, it will look a little like existing orbiting space stations, with tubes and tunnels connecting a series of living modules, and docking bays at each end to connect with our commercial space shuttles. Inside, we want the Casa de Luna to have all the comforts of the best hotels on earth, plus some special facilities possible only on the moon. For example, we are working on designs for a zero-gravity swimming pool and special courts for weightless racket ball.

We are confident about the future of Casa de Luna. We are also aware of the problems any adventure vacation company must deal with, like environmental impact, pollution, etc. Unlike the earth tourism industry, we must confront the unique obstacles presented by space travel and the moon’s environment.

Lunar Safari seeks your help in identifying and meeting the challenges that lie ahead of us in this new space tourism venture. Generate challenges faced by Lunar Safari in developing workable tourism practices for the moon.

Thank you for your help,
Karen Silverman, CEO, Lunar Safari Inc.

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Thank you for your help,
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Utilizing Quizlet



You can use Quizlet with or without creating a Quizlet account. There is also a Quizlet mobile app that you can download from your mobile app store.

When you follow to the links provided in the packet and enter the password you will see a screen with a header (as the picture shows).

International Travel - RRR Terms



The icons shown here allow you to do different things.



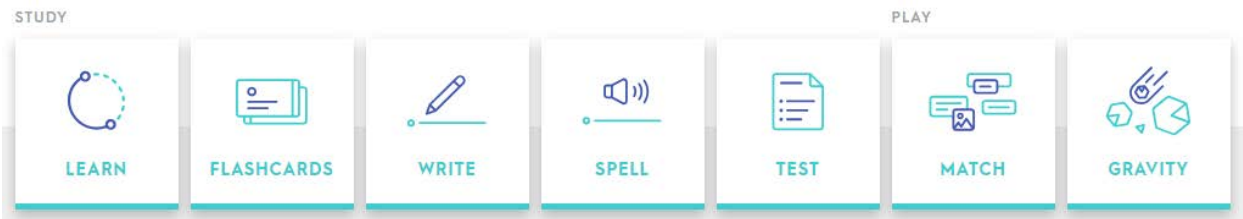
These buttons allow you to copy the set, if you have your own Quizlet account. Share the set, which should only be shared to your students. Or get information about the set.



If you hover over this button you will get options such as; scores, print, combine, export, and embed.

- The “scores” option would allow you to track your scores on games, if you were in your own Quizlet account.
- The “print” option allows you to print the set in many different formats, including printing them as flashcards on your own printer.
- The “combine” option will allow you to combine sets into 1 large group.
- The “export” option will allow you to export the set to a word file.
- The “embed” option will allow you to embed the set on your own website, but should not be used unless that website is password protected and for your students only, as it would violate the copyright if they were made accessible to anyone.

The next row of icons on the screen look like this.



These are divided into two parts; study and play.

In the study section you see icons for learn, flashcards, write, spell, and test.

- The “Learn” option will give students short quizzes using some questions. The more they answer correctly the more points they receive.
- The “Flashcards” option allows students to flip through the cards as flashcards and quiz themselves on the questions and answers.
- The “Write” option will allow your student to type in the answers to the questions presented. (To set this up, click on options on the bottom left and in the pop-up window change “Answer With” to “Definition”)
- The “Spell” option reads the question while displaying the answer, and allows students to type what they hear.
- The “Test” option will test the student on their knowledge. (To set this up, click on options on the bottom left and in the pop up window, only check “Written” in the question type section and set the number of questions you wish to be tested)

In the Play section you have the match and gravity options.

- The “Match” option randomly selects about 5 questions and asks students to match up the question with the proper answer by moving the items on the screen.
- The “Gravity” option lets student race against the clock to answer the questions as they fall like asteroids. Each correct answer gives you points and causes the asteroid to disappear, each incorrect answer deducts points and lets you keep answering until you get it correct, if you fail to answer before the asteroid falls the game will prompt you with the correct answer and no points are awarded.

Question & Answer Workbook



2019-20
Practice
Problem #1

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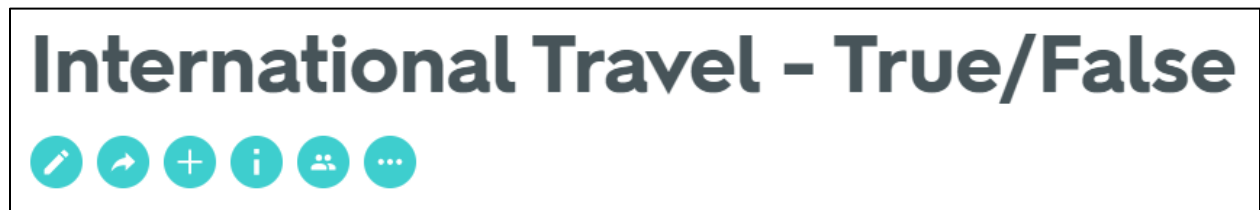
www.fpspi.org

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You can use Quizlet with or without creating a Quizlet account. There is also a Quizlet mobile app that you can download from your mobile app store.

When you follow to the links provided in the packet and enter the password you will see a screen with a header (as the picture shows).



The icons shown here allow you to do different things.



These buttons allow you to copy the set, if you have your own Quizlet account. Share the set, which should only be shared to your students. Or get information about the set.



If you hover over this button you will get options such as; scores, print, combine, export, and embed.

- The “scores” option would allow you to track your scores on games, if you were in your own Quizlet account.
- The “print” option allows you to print the set in many different formats, including printing them as flashcards on your own printer.
- The “combine” option will allow you to combine sets into 1 large group.
- The “export” option will allow you to export the set to a word file.
- The “embed” option will allow you to embed the set on your own website, but should not be used unless that website is password protected and for your students only, as it would violate the copyright if they were made accessible to anyone.

The next row of icons on the screen look like this.



These are divided into two parts; study and play.

In the study section you see icons for learn, flashcards, write, spell, and test.

- The “Learn” option will give students short quizzes using some questions. The more they answer correctly the more points they receive.
- The “Flashcards” option allows students to flip through the cards as flashcards and quiz themselves on the questions and answers.
- The “Write” option will allow your student to type in the answers to the questions presented. (To set this up, click on options on the bottom left and in the pop-up window change “Answer With” to “Definition”)
- The “Spell” option reads the question while displaying the answer, and allows students to type what they hear.
- The “Test” option will test the student on their knowledge. (To set this up, click on options on the bottom left and in the pop up window, only check “Written” in the question type section and set the number of questions you wish to be tested)

In the Play section you have the match and gravity options.

- The “Match” option randomly selects about 5 questions and asks students to match up the question with the proper answer by moving the items on the screen.
- The “Gravity” option lets student race against the clock to answer the questions as they fall like asteroids. Each correct answer gives you points and causes the asteroid to disappear, each incorrect answer deducts points and lets you keep answering until you get it correct, if you fail to answer before the asteroid falls the game will prompt you with the correct answer and no points are awarded.

Online/Mobile App Interactive Study Feature

International Travel

This workbook and the accompanying interactive features allow you to use the Question and Answer publication in a variety of ways with your students. Pages can be used as worksheet, flashcards can be printed from the Quizlet system, and students can play games with the content provided.

QUIZLET ONLINE

1. Go to the link below.

True/False

https://quizlet.com/_5sd63q

Multiple Choice

https://quizlet.com/_5sdalm

Fill-in the Blank

https://quizlet.com/_5sd86n

2. Use this password:
1920PP1asp

MOBILE APP

1. Download the “Zappar” App from the app store.
2. Scan the code below.



3. Click on the type of question you want to study.
4. Use this password:
1920PP1asp

True/False Section



2019-20 PP1
International Travel

International Travel

True/False Questions

1. Some countries may deny entry of international tourists even if their passport has not yet expired.
2. Restaurants near tourist attractions tend to charge higher prices than restaurants located further away from tourist-centered areas.
3. Luxury hotels and sharing economy companies like Airbnb and VRBO are equally consistent in strong quality control.
4. Voluntourism is considered to be more cost-effective than providing funding toward projects headed up by local workers.
5. Global travel and tourism, in 2018, was responsible for roughly 10% of the world's gross domestic product (GDP).
6. Between 2016 and 2017, the number of U.S. companies carrying travel-safety policies increased by twenty percent.
7. To ensure integrity of their house listings, most house-swap companies will deeply investigate, or visit personally, all properties on their website.
8. While aboard international flights, the use of alcohol and caffeine typically helps adults avoid jet lag.
9. Under the U.S. State Department's previous system of travel advisories, there was no difference between "travel alerts" and "travel warnings."
10. The U.S. State Department would advise individuals to "reconsider travel" during a Level 1 travel advisory.
11. If the U.S. State Department issues an "H"-coded advisory, people with compromised immune systems may want to reconsider travel.
12. If a country is war-torn by terrorist forces, it may not be surprising to see the U.S. State Department declare a Level 4 "T" advisory for that location.
13. In 2018 it is possible to take a direct flight between Perth (Western Australia) and London (England) without landing to refuel in between.
14. Australia's Project Sunrise has already developed an aircraft that can fly nonstop from any one spot to any other location in the world.
15. Only 6% of Chinese citizens had a passport in 2018.
16. As of 2018, at least one U.S. airport required the collection of facial scans in order for passengers to travel abroad.

17. It takes five seconds for U.S. Customs and Board Protection (CBP) to access their image database and confirm if an individual in front of them is the person whom he or she claims on their travel documents.
18. Artificial intelligence (AI) has the ability to sort through massive amounts of travel data and recognize trends in that data.
19. Travel experts predict that the sharing economy will cause many traditional hotels to close.
20. To be mindful of environmental impacts while selecting a destination and building their itinerary is to practice "green travel."
21. In Switzerland and Japan, hybrid trains and buses run on hydroelectric power.
22. One of the industries most sincerely invested in alternative fuels is the cruise industry.
23. It is possible to sample over 1,000 types of locally-grown apples in Uzbekistan, making it a great potential destination for foodies or horticulturists.
24. Among green practices, it is recommended that travelers seek out a buffet-style meal whenever possible.
25. Scuba diving is considered to be a green activity while traveling.
26. Cyclist paths of the future will likely be suspended above paved streets.
27. The technology of autonomous helicopters has already been perfected for commercial use.
28. According to Forbes Magazine, more and more families from the U.S. are traveling abroad with their children.
29. Khaleej Times recommends getting all pre-travel vaccines one week prior to travel.
30. Typically, most adult vaccines for travel are administered in a single dose.
31. By 2035, the International Air Travel Association expects the number of passengers traveling internationally to rise to 7.2 billion.
32. According to the Australian Broadcasting Company, trips between Tokyo and San Francisco are expected to be shortened by six hours using supersonic jets as opposed to traditional aircraft.
33. In the next twenty years, it is expected that non-stop flights between distant locations will become much more common.
34. Retinal scanning and facial recognition technology will rely on artificial intelligence (AI) to operate.
35. Among present-day travel improvements, no noticeable commitment has been made to designing more comfortable cabin designs or improving mid-flight meals served.
36. Currently, it is thought that artificial intelligence (AI) will likely carry out security procedures at the same rate as humans.

37. Only a small fraction of countries banned from sending visitors to the United States contained primarily Muslim populations.
38. In 2017, Germany opened its borders to immigrants and international visitors.
39. Thanks to technological advances and global efforts, carbon emissions in the 2010s are no longer of concern when planning travels.
40. As of 2018, it is legal for airlines to resell airplane seats at a higher price.
41. As of 2018, it is illegal in the United States for airlines to shrink the size of seats and to reduce legroom.
42. Travel by train tends to be cheaper than travel by plane.
43. Airlines have the freedom to indirectly publicize how much customers paid for their tickets by allowing those who paid most board first and leaving those who paid least to board last.
44. Cruises to the Arctic were designed mostly to keep elderly populations, who were more likely to have traveled to most other continents, engaged in their excursions.
45. Poor security features for e-visas in recent years have led to some travelers arriving to their destination only to find that their web-purchased travel documents were fraudulent.
46. Blockchain could be used to track lost or stolen passports so as to reduce fraudulent use.
47. Shared economy lodgings are expected to provide 24/7 access to service staff and special pampering services.
48. Replica landmarks do not provide much in the way of tourist dollars for local communities.
49. Some countries may deny entry if the tourist does not provide proof of vaccination.
50. Over time, USA Today argues that owners of shared economy lodgings have become more focused on hospitality and less focused on making money.
51. Consumers are responding to "sharing fatigue," or negative experiences with shared economy options, by returning to the practice of reserving hotel lodgings.
52. Most U.S. citizens prefer mass transit and cabs to rides presented by the shared economy.
53. Remote Year believes that poor employees can be inspired enough abroad to become good remote employees.
54. Ultimately, it is intended that virtual reality (VR) would replace actual, in-personal travels.
55. Disposable income is the portion of a person's budget reserved for necessary living expenses.
56. A person could consider him or herself a global citizen without ever setting foot on foreign lands.
57. According to The New York Times, voluntourists can actually cause harm to local communities due to the frequent application of amateur skills.

58. Digital home assistants and AI hotel room assistants are now growing in use thanks to advances in voice technology.
59. Thanks to hotspots, a Skyroam day pass can provide portable internet anywhere in the world.
60. An entire industry has risen around keeping travels low-stress for globetrotters by serving as digital concierges.
61. Employers are still firmly responsible for employee safety if the employee opts to extend his or her business trip to leisurely explore a destination once formal business has concluded.
62. Most of the responsibility for contractual agreements falls upon homeowners in the case of house-swapping.
63. Currently, there are no "green" ways to fly in an airplane.
64. Green hotels should promote that their visitors request daily housekeeping.
65. Arguably, ecotourists should only take wildlife-involved excursions if the touring organization is mindful of their environmental footprint and/or donates to conservation efforts.
66. Hyperloop travel gives the capability of traveling at 700 miles per hour.
67. Smart roads will have the ability to communicate information from one roadway to another.
68. According to Forbes Magazine, traveling with children hinders their brain development and language skills.
69. According to Forbes Magazine, traveling with children increases patience, problem-solving, and tolerance of discomfort.
70. Vaccines may require at least one month of time post-inoculation for the body to show effective immune response in their travels.
71. Travelers' clinics within the United Arab Emirates provide free resident vaccines along with vaccines at discounted rates for expatriates.
72. Forbes Magazine declares that, thanks to digital technology advancements, travelers will progressively become "takers" of experiences less and less and "co-makers" of experiences more and more.
73. Despite the fact that technological alternatives to travel are increasing, the travel industry is still considered a thriving global industry.
74. In order to claim to be "green," a business must also be taking realistic steps to protect the health of the planet and/or local environment.
75. One of the common applications of virtual and augmented reality technologies is helping potential travelers discern whether or not a place is "Instagram-friendly" enough to visit.
76. Despite reduction in luxury amenities offered, the Airbnb business model is expected to grow in success.

77. It could be argued that virtual reality (VR) may replace some degree of actual travel over time.
78. The collective shared economy has not yet faced much backlash for concerns over the quality of its drivers or property managers.
79. If you were to hail a car via Uber or Lyft services, you would be partaking in shared economy services.
80. Amenities in lodging may include features like included access to a hot tub, swimming pool, washing machine, dryer, and refrigerator.
81. The day-by-day plan for how time will be spent on a vacation is known as a budget.
82. Financial planners would advise that luxuries be traditionally covered by a person's disposable income.
83. Artificial intelligence (AI) is expected to be able to utilize scans of fingerprints, retinas, and/or the face to quickly confirm identities during travel.
84. Long-haul flights are expected to hold steady in prevalence if not increase in the future.
85. Over time, long-present corporations that have been focused on short-haul travel and/or traditional hotel management may need to break into smaller companies that are separately managed or sold off in order for the work of such legacy companies to thrive
86. Much of the harm caused by travelers is likely due to lack of education.
87. A sign of overtourism could be a continued lack of respect shown to local traditions by tourists, which may lead to poor relationships between residents and tourists.
88. Vaccines will protect tourists from most foodborne illness.
89. Virtual reality is a great way for those with aviophobia to experience the world.
90. According to Forbes Magazine, adults are considered to be more adaptable to new situations than children.



Multiple Choice Section



2019-20 PP1
International Travel

International Travel

Multiple Choice Questions

1. In recent years, lost _____ has been a common problem for travelers of Heathrow's largest airline, British Airways.
 - A. iPods
 - B. luggage
 - C. security
2. To utilize travel that surpasses 4,000 km (or roughly 2,500 miles) is called _____.
 - A. globetrotting
 - B. jetting
 - C. long-haul travel
3. Which of the following is considered the least harmful for local citizens?
 - A. bleisure
 - B. overtourism
 - C. voluntourism
4. The document that allows an individual to reside in a different country for a set time range is called a _____.
 - A. itinerary
 - B. passport
 - C. visa
5. Making the effort to safeguard culture and natural spaces, be environmentally friendly, and contribute to the economy of a local community are the tenets of _____.
 - A. duty of care
 - B. long-haul travel
 - C. sustainable travel
6. According to the Allianz Travel Insurance Vacation Confidence Index, the index of Americans "very likely" to utilize sharing-economy services on vacation shifted from 26% in 2017 to _____ in 2018.
 - A. 35%
 - B. 29%
 - C. 19%

7. In 2016, member of Poland's Computer Emergency Response Team was able to generate QR codes to break into _____.
- A. airline lounges
 - B. luggage storage facilities
 - C. secure flights
8. For those wishing to work and life abroad while relocating to a new country each month, the upfront cost of participating in the Remote Year program is roughly _____, followed by \$2,000 for the next 11 months.
- A. \$1,000 USD
 - B. \$5,000 USD
 - C. 10,000 USD
9. The first virtual reality (VR) experience center accessible within an airport was
- A. AppReal-VR
 - B. PeriscopeVR
 - C. VirSpaces
10. In 2008, there were roughly _____ people serving as voluntourists during their vacations.
- A. 12 million
 - B. 7 million
 - C. 1.6 million
11. While aboard an international flight, adults should avoid _____ to reduce jet lag.
- A. carbohydrates
 - B. caffeine
 - C. sleep masks
12. Which of the following is NOT one of the U.S State Department's specific risks noted in their advisory system updated January 2018?
- A. Civil Unrest (U_
 - B. Crime ("C")
 - C. Food Contamination (F)
13. A defining feature of Hyperloop technology is the use of _____ to speed up travel.
- A. hydroelectricity
 - B. magnets
 - C. pressurized capsules

14. Hyperloop travel envisions a trip between San Francisco and Los Angeles would take a matter of _____.

- A. 15 minutes
- B. 35 minutes
- C. 70 minutes

15. Super-train technology speeds up travel by reducing _____.

- A. air friction
- B. fuel weight
- C. track maintenance

16. _____ people traveled internationally in 2016.

- A. 1.2 billion
- B. 2.4 billion
- C. 3.8 billion

17. To combine both virtual and real worlds into an experiential environment is to experience a _____ reality.

- A. altered
- B. fragmented
- C. mixed

18. The specific feeling of disorientation one encounters in visiting a drastically different environment or culture from their daily life scenarios.

- A. anxiety
- B. bleisure
- C. culture shock

19. Which source would most likely be used to promote biometric security?

- A. eye patterns
- B. handwriting
- C. lie detection

20. The legal obligation a company has to protect the safety of traveling employees is called duty of _____.

- A. awareness
- B. care
- C. surveillance

21. Blockchain is a _____.

- A. currency
- B. secure data encryption and protection process
- C. style of short-haul travel

22. As of 2017, the medieval walled city of Dubrovnik, Croatia limited its number of tourists entering to _____ a day.
- A. 400
 - B. 1,000
 - C. 4,000
23. Utilizing the Eurail Global Pass, a traveler may pass through _____ different countries without limit.
- A. 12
 - B. 28
 - C. 42
24. An agency of the United Nations known as the World Tourism Organization declared 2017 the Year of _____ Tourism.
- A. Frequent
 - B. Sustainable
 - C. Virtual
25. To assist efforts of building more sustainable travel, _____ recently increased their tourist tax by 10 euros per night stayed.
- A. Amsterdam
 - B. London
 - C. Venice
26. In order to reduce mass tourism's negative impacts, Palau, an island nation of Micronesia, only allows _____.
- A. five-star hotels
 - B. researchers to visit
 - C. a set number of visitors per year
27. The following are features of Blockchain EXCEPT _____.
- A. creating a digital travel footprint
 - B. being able to securely share data
 - C. connecting to the physical world without a physical tag or microchip.
28. Travelers tend to select "shared economy" lodgings for their _____.
- A. authenticity
 - B. nanny services
 - C. on-site dining options

29. Which of the following is tenet of sustainable travel?
- A. having enough money to last the whole trip
 - B. providing monetary benefit to the local economy
 - C. relying upon disposable income that won't make the traveler go into debt
30. Globetrotters are most advised by National Geographic to _____.
- A. distribute clothing items to individual villagers
 - B. distribute candy and toys to local villagers
 - C. donate money and goods to reputable charities
31. National Geographic advised globetrotters NOT to _____.
- A. purchase wildlife souvenirs
 - B. use local glass over plastic
 - C. use totes bags
32. One of the most overlooked aspects of international travel is _____.
- A. what flights a person will take
 - B. what vaccinations the person may need
 - C. where the person will stay upon arrival
33. According to GreenMatters, to be a sustainable traveler, one must be fully mindful of his or her " _____, social, and environmental impacts" on a community.
- A. aesthetic
 - B. cultural
 - C. economic
34. By creating fake _____, it's been possible for hackers to enter private airport spaces.
- A. Blockchain
 - B. biometric screenings
 - C. QR codes
35. In its first year of existence, 2014, the Remote Year program had roughly _____ people apply for 75 hired positions.
- A. 5,000
 - B. 25,000
 - C. 100,000
36. Over the last twenty years, then number of international trips grew from 600 million to _____.
- A. 800 million
 - B. 1.3 billion
 - C. 2.1 billion

37. For _____ US dollars a day, the personal travel planning service Journy can plan your daily itinerary, dining options, and best lodging choices.
- A. 12
 - B. 25
 - C. 47
38. Between 2016 and 2017, the number of U.S. companies that had safe travel policies for their employees jumped from _____ to 74%.
- A. 14%
 - B. 33%
 - C. 54%
39. People traveling across multiple time zones should avoid _____ to reduce jet lag.
- A. napping upon arrival
 - B. carbohydrates
 - C. headsets
40. If the U.S. State Department releases an "E"-coded advisory, it means that the destination is experiencing _____.
- A. an emotional hardship
 - B. an epidemic
 - C. a special event
41. Finland, Sweden, and _____ continue to be some of the most green destinations in the world.
- A. France
 - B. Norway
 - C. the United States
42. An expatriate is someone who _____.
- A. lives outside of their nation of citizenship
 - B. is a temporary globetrotter
 - C. is a voluntourist
43. 12.7 million international visitors brought \$9 billion in revenue to _____ in 2016.
- A. New York
 - B. Seoul
 - C. Tokyo
44. 15.6 million people generated \$17 billion in revenue in this city in 2013.
- A. Moscow
 - B. New York
 - C. Paris

45. To continue pulling in customers for the foreseeable future, it is advisable that the travel industry maintain a dual focus upon
- A. luxury and personalization
 - B. luxury and technology
 - C. personalization and technology
46. Plukett Research expects the number of active aircraft around the world to double by _____.
- A. 2022
 - B. 2033
 - C. 2038
47. Which of the following is considered a harmful tourist decision?
- A. wearing sunscreen that may not be certified as reef-safe
 - B. paying to ride a local elephant
 - C. both A and B
48. _____ personalization is now changing the relationship between tourists and the brands they purchase.
- A. Data-driven
 - B. Demand-driven
 - C. Location-based
49. Fewer than _____% of the global population have visited Antarctica
- A. 5%
 - B. 3%
 - C. 1%
50. One recommendation for traditional hotels to succeed in their shifting industry is to provide more _____.
- A. additional meals
 - B. of an all-inclusive experience
 - C. luxury lodging options
51. Which of the following contributes to the concept of geopolitics?
- A. foreign policy
 - B. varying geography
 - C. both A and B
52. it is expected that _____ services will decrease over time with increased availability of self-driving cars and high-speed rail systems.
- A. long-haul travel
 - B. short-haul travel
 - C. both A and B

53. International travel experience is shown to create more tolerance of _____ in children.
- A. otherness
 - B. unique foods
 - C. both A and B
54. Which of the following is NOT provided as a reason Forbes explains why adults do not tend to travel with children internationally.
- A. Other passengers frown upon misbehaving or upset children during travels.
 - B. Parents are afraid of spoiling their children.
 - C. The cost is simply too high.
55. The city of _____ generated \$9.5 billion in revenue from its 4.1 million global visitors in 2017.
- A. New York
 - B. Seoul
 - C. Sydney
56. Rome welcomed _____ visitors in 2017, bringing in \$6.7 million of revenue.
- A. 1.8 million
 - B. 9.6 million
 - C. 22 million
57. London's 19.1 million visitors in 2016 generated roughly _____ in revenue.
- A. \$92 million
 - B. \$2 billion
 - C. \$15.3 billion
58. _____ generated \$57 billion in revenue in 2016 from 28.1 tourists.
- A. China
 - B. The United Kingdom
 - C. the United States of America
59. When traveling alone, it is advisable to do all of the following except _____ to cut down on potential anxiety.
- A. make local connections with residents
 - B. to be aware of one's surroundings
 - C. schedule flights close to one another to maximize efficiency
60. Which of the following, though expensive, could be effectively addressed once you reach an international destination?
- A. Exchanging currency
 - B. Updating one's passport and visa
 - C. Obtaining vaccines

Fill-in Section



Fill in the

Blank

2019-20 PP1
International Travel

International Travel

Fill-in the Blank Questions

1. In a war-torn area, where two groups are fighting one another, the U.S. State Department would likely issue a Level 4 advisory with a special "U" code for _____.
2. The largest goal of sustainable travel is to prevent _____ from occurring.
3. When someone is experiencing jet lag, it means their swift travel between time zones has disrupted _____.
4. To reduce carbon emissions, it is recommend that globetrotters traverse by _____ whenever possible.
5. When traveling internationally, it is important to make sure one's passport will be valid for a minimum of _____ months following the trip.
6. Volunteers who travel internationally to construct buildings or clinics are known as _____.
7. It expected that as many as _____ driverless cars could be on the roads by 2020.
8. Prior to shifting to another time zone, in order to reduce jet lag, it's advisable to adjust one's _____ to more closely resemble what others would follow at the local destination.
9. Even though most of its citizens have never stepped on a plane, in the future, it is expected that the country of _____ will play a large role in international travel.
10. According to a researcher at Georgetown University, _____ tends to increase as usage increases.
11. In 2014, \$7.6 trillion dollars were generated by the industry of _____.
12. According to an executive of American Express Travel & Lifestyle services, most world travelers desire a _____ kind of travel experience.
13. Destinations that value public transit, walkability, bike lanes, and farmers markets tend to be considered _____ communities.
14. The Washington Post advises that green-conscious travelers _____ fresh towels and linen each day.
15. When a family is struggling to make ends meet, they are more likely to lack the _____ income needed to fund leisure-based travel.
16. The branch of the travel industry designed to mindfully support the protection of endangered ecosystems is known as _____.
17. Items designed with both bodily comfort and efficient function in mind are considered to be _____.

18. The famous site of _____ in Peru has placed a cap on the number of visitors who can visit to the site in order to reduce the harms of foot traffic.
19. International calling fees, also known as _____ charges, can be a major consequence to not planning ahead for the use of cell phones in other countries.
20. To avoid the heftiest cell phone charges overseas, one could simply consider purchasing a local _____ card for the phone.
21. In 2017, travel in the United States, Puerto Rico, and the Caribbean was hindered by three separate occurrences of devastating storms known as _____.
22. After a devastating storm, luxury destinations can be slow to recover due to losing out on funds generated by _____.
23. Luxury travels have shifted their focus from spa treatments to _____ wellness and well-being.
24. In 2017, luxury travelers tended to prefer secluded vacation destinations that would free them to _____ from news.
25. It is argued that the preexisting, decentralized platform known as _____ could be highly useful in protecting a country's visa details by releasing such data on a need-to-know basis.
26. Overtourism puts the _____ of local citizens at risk.
27. _____ allows potential tourists to experience global destinations in the most environmentally friendly way possible.
28. An _____ occurs when the number of cases of a specific infectious disease suddenly increase and spread across multiple areas.
29. Virtual reality (VR) is considered an _____ entertainment experience because is deeply engaging of the senses.
30. Supersonic jets have the capability to exceed _____.



Answers



2019-20 PP1 International Travel

International Travel True/False Answers

- | | | | |
|-----------|-----------|-----------|-----------|
| 1. True | 24. False | 47. False | 70. True |
| 2. True | 25. True | 48. False | 71. True |
| 3. False | 26. True | 49. True | 72. True |
| 4. False | 27. False | 50. False | 73. True |
| 5. True | 28. False | 51. True | 74. False |
| 6. True | 29. False | 52. True | 75. True |
| 7. False | 30. False | 53. False | 76. True |
| 8. False | 31. True | 54. False | 77. True |
| 9. False | 32. True | 55. False | 78. False |
| 10. False | 33. True | 56. True | 79. True |
| 11. True | 34. True | 57. True | 80. True |
| 12. True | 35. False | 58. True | 81. False |
| 13. True | 36. False | 59. True | 82. True |
| 14. False | 37. False | 60. True | 83. True |
| 15. True | 38. False | 61. False | 84. True |
| 16. True | 39. False | 62. True | 85. True |
| 17. True | 40. True | 63. True | 86. True |
| 18. True | 41. False | 64. False | 87. True |
| 19. False | 42. True | 65. True | 88. False |
| 20. True | 43. True | 66. True | 89. True |
| 21. True | 44. False | 67. True | 90. False |
| 22. True | 45. True | 68. False | |
| 23. True | 46. True | 69. True | |

International Travel

Multiple Choice Answers

1. B. Luggage
2. C. long-haul travel
3. A. bleisure
4. C. visa
5. C. sustainable travel
6. C. 19%
7. A. airline lounges
8. B. \$5,000 USD
9. B. PeriscopeVR
10. C. 1.6 million
11. B. caffeine
12. C. Food Contamination (F)
13. C. pressurized capsules
14. B. 35 minutes
15. A. air friction
16. C. 3.8 billion
17. C. mixed
18. C. culture shock
19. A. eye patterns
20. B. care
21. B. secure data encryption and protection process
22. C. 4,000
23. B. 28
24. B. Sustainable
25. A. Amsterdam
26. A. five-star hotels
27. C. connecting to the physical world without a physical tag or microchip
28. A. authenticity
29. B. providing monetary benefit to the local economy
30. C. donate money and goods to reputable charities
31. A. purchase wildlife souvenirs
32. B. what vaccinations the person may need
33. C. economic
34. C. QR codes
35. B. 25,000
36. B. 1.3 billion
37. B. 25
38. C. 54%
39. A. napping upon arrival
40. C. a special event
41. B. Norway
42. A. lives outside of their nation of citizenship
43. A. New York
44. C. Paris
45. C. personalization and technology
46. B. 2033
47. C. both A and B
48. A. Data-driven
49. C. 1%
50. B. of an all-inclusive experience
51. C. both A and B
52. B. short-haul travel
53. C. both A and B
54. A. Parents are afraid of spoiling their children.
55. C. Sydney
56. B. 9.6 million
57. C. 15.3 billion
58. A. China
59. C. schedule flights close to one another to maximize efficiency
60. A. Exchanging currency

International Travel

Fill-in the Blank Answers

1. civil unrest
2. overtourism
3. circadian rhythms
4. train
5. six (6)
6. voluntourists
7. 10 million
8. bedtime
9. China
10. errors
11. global tourism
12. personalized
13. green
14. decline
15. disposable
16. ecotourism
17. ergonomic
18. Machu Picchu
19. roaming
20. SIM
21. hurricanes
22. tourism
23. holistic
24. unplug
25. Blockchain
26. quality of life
27. Virtual reality (VR)
28. epidemic
29. immersive
30. the speed of sound



Readings, Research, & Resources

2019-20 Practice Problem #2



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Future Problem Solving Program International (FPSPI)

We hope you find this edition of *Readings, Research, and Resources* to be a valuable resource as your students gather knowledge about *Sleep Patterns*.

This publication should be used as a starting point for research. By the time it is printed and distributed, some of the information may change or become out-of-date. Keep in mind, however, that observing and studying the changes that take place in a given subject area over a few months or years can be an incredible asset to problem solvers who work with scenarios set in the future.

A concerted effort was made to find recent articles from as many different perspectives as possible. While FPSPI attempts to present a balance in the range of opinions, some sides of an issue are often more represented than others. This does not mean that FPSPI supports that position. FPSPI supports no position. Information contained in this publication is a summary of the original article. It is up to the reader to determine which “facts” to accept.

FPSPI encourages coaches to preview the article summaries and links to determine whether all information is appropriate for their students. Efforts were made to minimize the sensitivity of the summaries’ contents; however, different standards of acceptability apply to each individual student, coach, and community. Please use your discretion with these materials.

At the end of this publication you will find an appendix containing a topic-related Future Scene from past years and a “Use the Tools” section dedicated to helping problem solvers apply creative thinking tools to their research.

About Topic Selection:

FPS topics are determined with the input of students, coaches, researchers, futurists and many others. FPSPI participants are encouraged to submit topics for consideration. Annually, the FPS community votes for their top five topics from three general themes: Science/Technology, Social/Political, and Business/Economics. The results of the voting determine which topics FPSPI uses each year. Information on topic submission and voting can be found at www.fpspi.org/topic-submission.

Acknowledgments:

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Chapter Authors:	Emily Miller and Kylo Hart
Editing:	Brad Persinger and Deana Bindel
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About Themes & Concepts and Internet Resources:

Themes and Concepts serve as content organizers for each topic of study. Common themes are obvious in most subject matters or topics. Concepts represent mental images, constructs, or word pictures that help people to arrange and classify fragmented and isolated facts and information. Themes and Concepts assist in organizing a lot of information into manageable threads or ideas, providing a complete picture or understanding of the subject.

Coaches may wish for younger students to utilize the provided Themes & Concepts for each topic as a reference and starting point in their research. Coaches of older and/or more advanced problem solvers may encourage students to take the research and develop their own Themes & Concepts for each topic.

Highly engaging curricular lessons to expand research, teach the problem solving process and explore the current topics are available. The [Topic Activity Units](#) are excellent resources for teachers and coaches alike, for both use in the classroom and after school. They incorporate best practices and provide step by step lesson plans for research based independent and collaborative work.

Readings, Research, and Resources includes specific web site addresses; however, site changes occur continuously. Some of the articles cited in this publication may be found by going directly to the source of the article; however, some articles can only be accessed by using an on-line database such as EBSCO or Cengage. Digital resources are checked at the time of publishing to ensure that the links are active, however, by the time you have purchased the publication these links may have changed.

Caution: We strongly advise coaches to review their educational organization's policies on appropriate content, and to screen any materials before making them available to students.

About Zappar:

Some sections feature an augmented reality (AR) code called a zap code. These codes, when scanned using the Zappar app, will give users an AR experience that provides more information about the publication and the topics inside.

You can download the app from your app store on iPhone and Android devices. Go to your app store and search for "Zappar", once you download it you can scan the codes found in this publication.

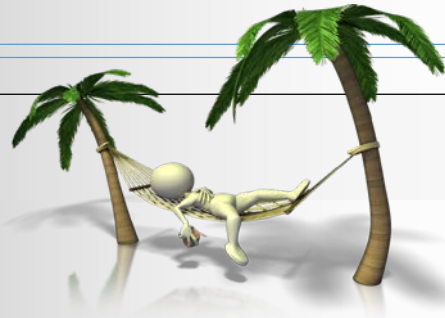


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sleep pattern



The Quizlet password is part of the copyright of this publication. Only share this password with the students of a single coach.

These Terms and Definitions are also available online with interactive games at:

https://quizlet.com/_5xmrvd

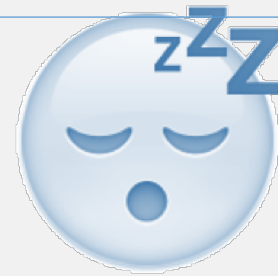
**Using the password:
2019RRRPP2f**

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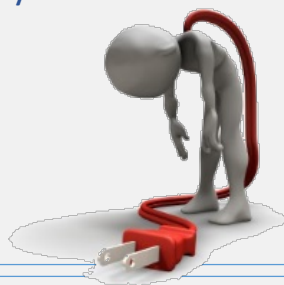


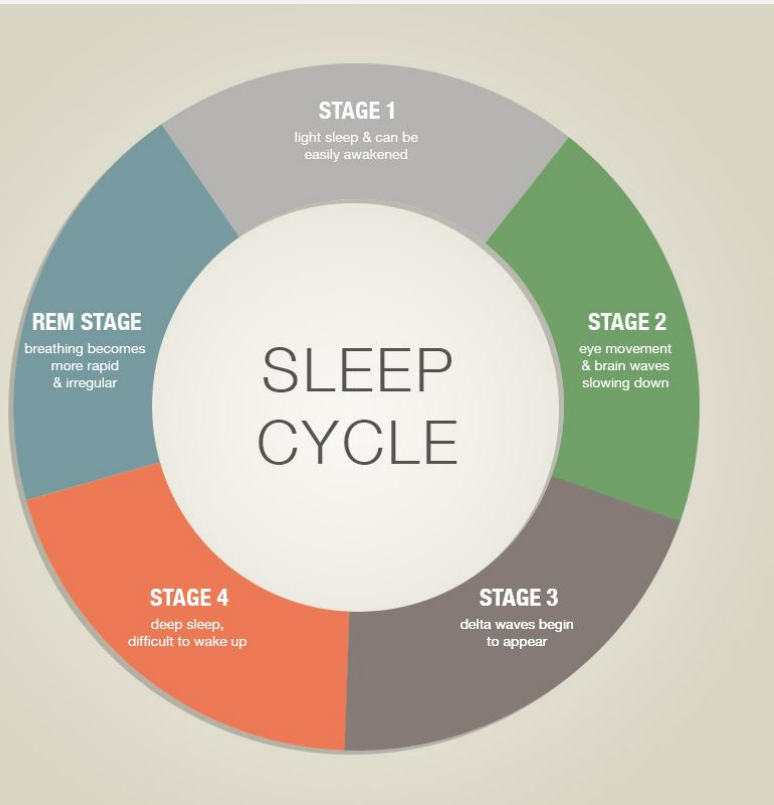
Terms & Definitions

- **anabolic state:** a period of rest when the body is building or repairing tissue
- **binging:** indulging in large amounts of a specific activity
- **blue light:** a type of light emitted by the screens of electronic devices that can interfere with sleep
- **brain plasticity:** the ability of the brain to change and adapt in response to bodily experiences
- **caffeine:** a stimulant found naturally in cocoa, coffee, and tea that is often added to soft drinks and food items
- **central nervous system:** the system of nerves, consisting of the brain and spinal cord, that controls activities in the body
- **chronic stress:** ongoing stress that affects individuals over a long period of time
- **circadian rhythm:** a biological process, in the form of an internal clock, that tells a body when to sleep and when to rise each day
- **delayed sleep phase disorder (DSPD):** a disorder in which a person's sleep is delayed by 2 or more hours beyond the socially acceptable or conventional bedtime
- **depression:** a serious medical condition that causes a person to feel extreme sadness or hopelessness
- **deprivation:** lack of something that is a necessity
- **drowsy:** sleepy
- **early bird:** a person who enjoys getting out of bed early each day or who easily rises in the morning
- **fatigue:** extreme tiredness
- **global health:** health and well-being throughout the world
- **glymphatic system:** the waste-clearance system of the central nervous system

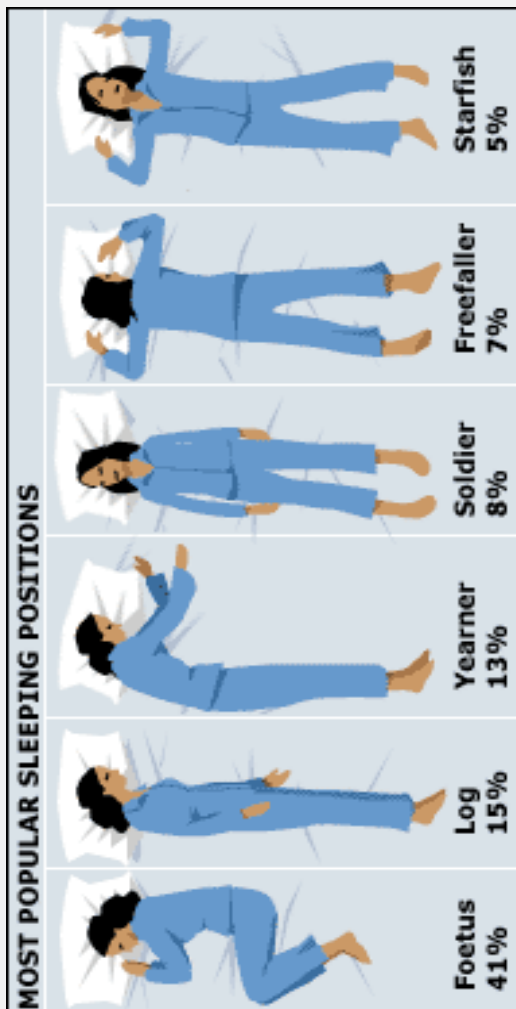


- **hibernation:** an extended period of time spent in a dormant state
- **immune system:** the internal system that works to protect a body from infection and disease
- **insomnia:** the inability to sleep
- **jet lag:** extreme tiredness after flying across several time zones
- **melatonin:** a hormone that helps the body know when it is time to sleep
- **metabolism:** all of the chemical processes in the body that serve to maintain life, including those associated with energy and growth
- **microclimate:** the climate of a small area that differs from that of the greater, surrounding area
- **monophasic sleep:** one period of sleep within the course of 24 hours
- **night owl:** a person who feels particularly awake at night
- **night shift:** a time period of work that is scheduled to occur at night
- **orthosomnia:** the condition that results when individuals obsess over the results of the sleep-tracking apps they use
- **overstimulation:** a state of excessive physical or mental stimulation
- **polyphasic sleep:** sleeping multiple times over the course of 24 hours
- **polysomnogram:** a sleep study to diagnose sleep disorders
- **rapid eye movement (REM) sleep:** a sleep phase occurring several times throughout the night that involves dreaming, rapid eye movements, faster breathing, and pulse rate

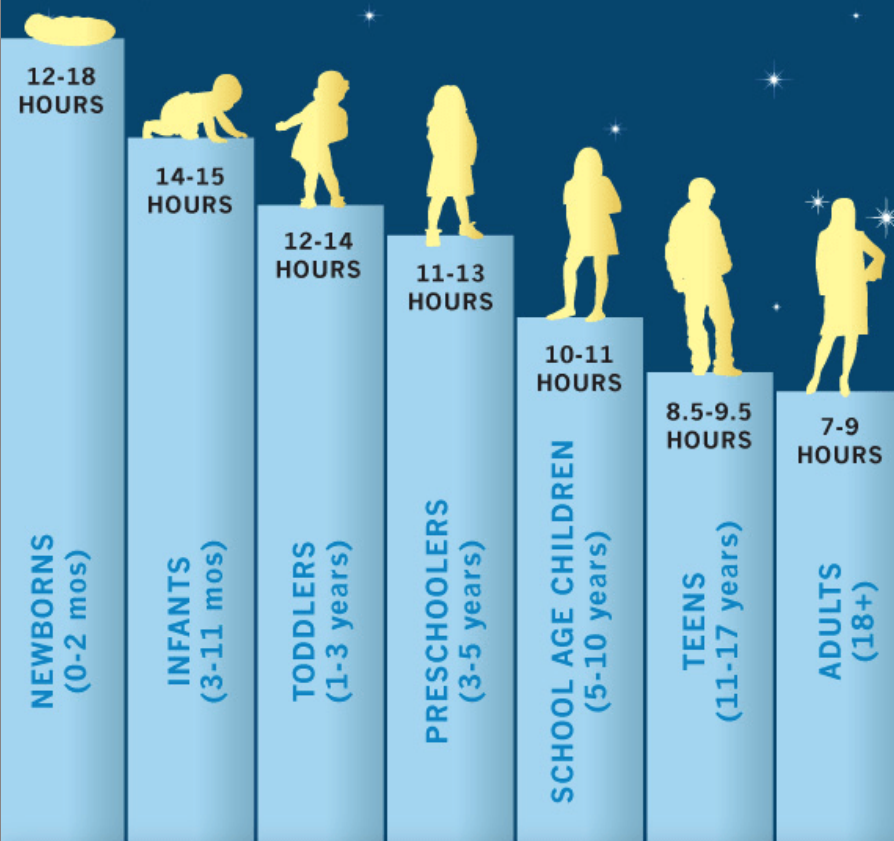




- **restlessness**: the inability to relax
- **sleep apnea**: a disorder that causes people to experience pauses in their breathing, from a few seconds in length to a minute or more, while they sleep
- **sleep deficit**: the combined effect of not getting enough sleep
- **sleep disorders**: problems that affect sleeping
- **sleep fragmentation**: a series of brief arousals that interrupt sleep
- **sleep hygiene**: behaviors and practices that can help people sleep well on a regular basis
- **sleeping pills**: drugs that are taken to cause someone to fall asleep
- **sleep lab**: an establishment that specializes in diagnosing and proposing cures for sleep disorders
- **sleeplessness**: the inability to sleep
- **sleep scientist**: a professional who performs tests on sleeping patients
- **social jet lag**: sleepiness that results from waking up at least one hour earlier than one's body desires in order to fulfill social obligations
- **somnology**: the scientific study of sleep and treatment of sleep irregularities and disorders
- **unihemispheric slow-wave sleep (USWS)**: sleeping with one half of the brain while the other half stays alert
- **wakefulness**: the state of not sleeping or inability to sleep
- **well-being**: the state of being happy and healthy
- **white noise**: a mixture of different sound waves that is often used to drown out other undesired sounds



HOW MUCH SLEEP DO WE REALLY NEED?



SLEEP NEEDS VARY FOR DIFFERENT AGE GROUPS

Topic Overview

Most people spend about one-third of their lives asleep. Surprisingly, many of them are still not getting as much sleep as their bodies actually need. A growing number of researchers believe that individuals throughout the world today are currently experiencing a serious sleep-loss epidemic in need of addressing. Sleep-deprivation is so common nowadays that it is regarded as a serious, increasing threat to public health.

Why all the fuss about not getting enough sleep? Lack of sleep can cause much bigger problems than simply feeling tired during the day. In fact, experts believe that sleep-deprivation affects all aspects of human biology. For example, individuals who don't get enough sleep on a regular basis show an increased risk of experiencing a range of negative health outcomes. These include Alzheimer's disease, cancer, cognitive impairment, depression, diabetes, heart attack, high blood pressure, mental health problems, obesity, stress, and stroke, among numerous others. Lack of sleep also tends to cause people to experience low energy, feelings of sadness or irritability, forgetfulness. Individuals tend to make more mistakes, have more compromised immune systems, occasionally contemplate suicide, and ultimately live shorter lives. Sleep-deprivation also puts an individual and others around them at greater risk of experiencing car crashes, industrial accidents, and medical errors.

Getting too much sleep can also lead to negative health outcomes, so it is essential to strive to get just the right amount on a regular basis. How much sleep does the average person need each night to be well rested? It depends. Because people are different in a variety of ways, individual sleep needs tend to be a bit different, too. However, sleep experts offer some general guidelines about how much sleep the average individual requires. The most common recommendation for adults is 7-9 hours of sleep per night, while some need up to ten hours. The typical teenager also requires between eight and ten hours of sleep nightly, and younger children usually need a bit more than that. Unfortunately, many people get much less sleep on a daily basis than these guidelines recommend and end up feeling tired much of the time. The U.S. Centers for Disease Control and Prevention, for example, estimates that approximately 30% of all Americans sleep six hours or less each night.

What sorts of things commonly prevent individuals from getting enough sleep? Some people find that their work-related demands interfere with their desire for sleep. Others think of sleep as a sign of laziness, preferring to brag about how little sleep they get in order to impress others with how busy they are. Meanwhile, some individuals experience sleep disorders or suffer from undiagnosed obstructive sleep apnea (OSA). Many parents typically find that caring for their children and performing other household-related tasks eats into the time they have available for sleep. Early starts to schooldays and workdays, the time demands of hobbies and extracurricular activities, homework assignments, social activities, and obligations also commonly keep people from getting as much sleep as they want and need.





Insomnia is the most common specific sleep disorder, with short term issues reported by about 30% of adults and chronic insomnia by 10%.

What sorts of things can be done to help people sleep better on a regular basis?


Avoiding bright lights and the use of cellphones, tablets, and similar sorts of electronic devices at least an hour before bedtime is a good way to start. Those things tend to wind up people when they really need to be winding down. In addition, the blue light from electronic-device screens affects the sleep hormone melatonin, making it harder for people to fall asleep. Avoiding excessive amounts of caffeine and sugar is also important. If able to squeeze them into one's schedule, naps in the afternoon can be particularly helpful. To sleep better, though, some people use prescription drugs like Ambien; others choose to eat sleep-inducing foods like cherries and brown rice. Other tips for sleeping better include going to bed and getting up at the same time each day and winding down thirty minutes or so before bedtime by listening to relaxing music or taking a warm bath. One thing that doesn't work well, though, is to sleep less during the week and hope to make up for a lack of sleep on the weekends. Studies have shown that sleep binging on the weekends can also be hazardous to one's health.

An entire industry has emerged in recent years to help people sleep better. An ever-growing number of companies are striving to bring the latest scientific and technological advancements into the rooms where people sleep. Current developments in progress include advanced blue-blocking filters, light-blocking curtains, noise-blocking devices, sheets designed to release people's body heat while they sleep, and mattresses designed to keep people cooler throughout the entire night. It is believed that, in the very near future, tracking one's daily sleep with advanced devices and apps will be at least as popular as the current trend of tracking one's daily steps. Such tracking is perhaps an important thing to consider, for researchers maintain that sleep should truly be considered the third pillar of good health, right alongside a healthy diet and regular physical activity.

The problem is clear: Many people don't get enough sleep. Meanwhile, when they finally do go to bed, individuals aren't always maximizing their potential for rest. To ensure more positive health outcomes across the lifespan, the challenge of finding ways to help people sleep better in the coming years and decades must be an absolute priority.



Patients with severe sleep apnea are...

4X more likely 
to have a **stroke**

5X greater risk of 
cardiovascular death

 **2X** as likely
to develop
depression

 **5X** more likely
to die from
cancer

And are more likely to...

Develop mild cognitive
impairment 
a **decade** earlier

Develop
Alzheimer's 
5 yrs earlier

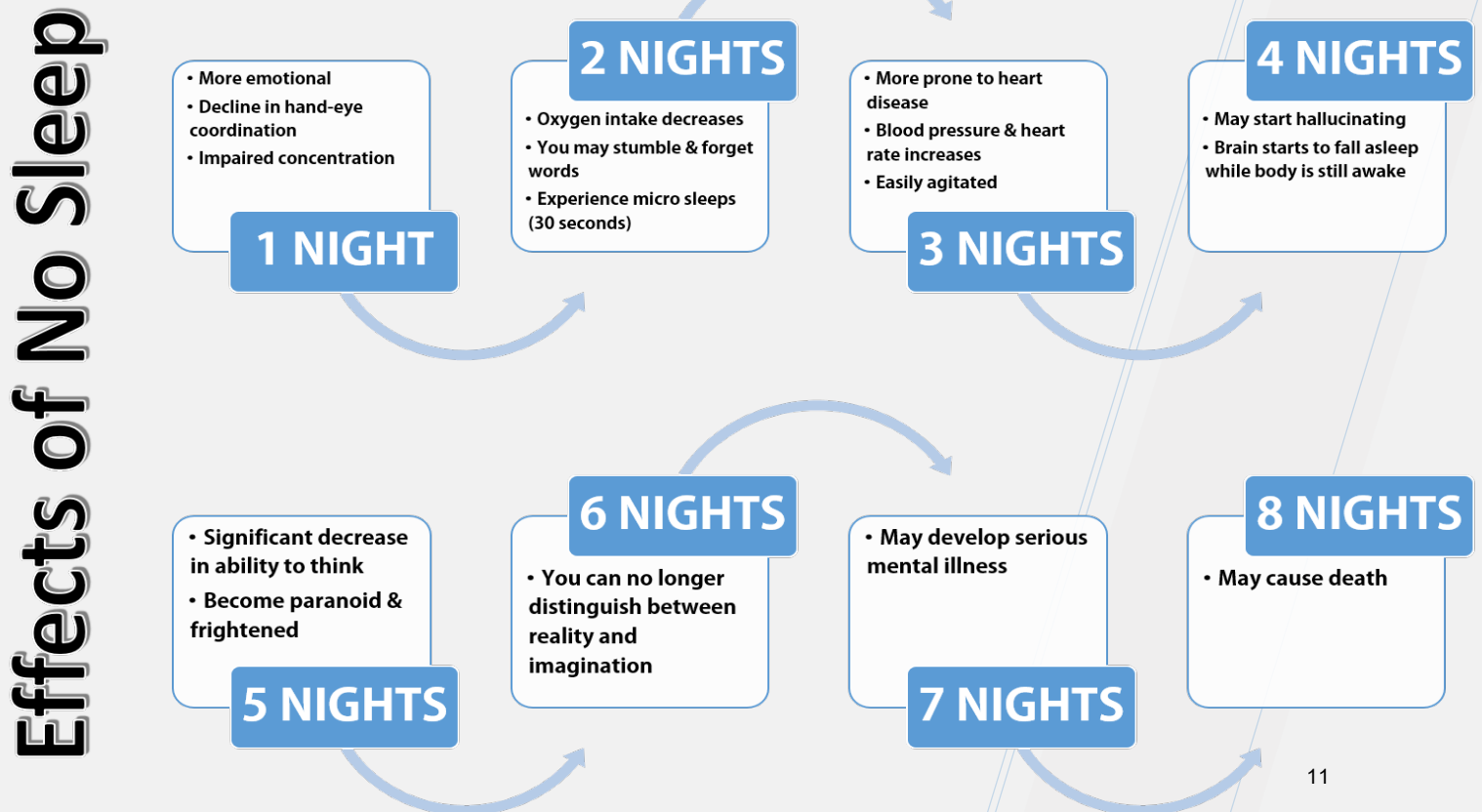
Discussion Questions

Pre-Research Questions:

1. How many hours do you prefer to sleep each night, and why?
2. How do you feel, both mentally and physically, on days when you haven't gotten enough sleep?
3. Do you personally like to take naps? Why or why not?
4. What sorts of things occasionally or regularly keep (a) you, (b) your friends, and (c) your parents from getting enough sleep?

Post-Research Questions:

1. Were you aware that the world is currently experiencing a serious sleep-loss epidemic? If so, from what sources did you learn this? If not, why do you think this is not yet common knowledge?
2. What do you consider to be the three greatest risks of not getting enough sleep on a regular basis?
3. Do you go to bed and wake up at the same times each day? If so, what do you feel are the advantages of doing so? If not, why not?
4. Have you made any changes recently that have helped you to sleep better? If so, what changes have worked for you? If not, what lifestyle changes would you be most willing to try, and why?
5. How often do you use a cell phone, tablet, or laptop computer right before going to bed? Also, why (if at all) might such technology use make it harder for someone to fall asleep?
6. If you could purchase three new products or services to help you sleep better, which ones would you choose, and why?
7. What are five things you would recommend to others to help them get a better night's sleep?





**The future is shaped
by your dreams,
so stop wasting time
and go to sleep!**

Themes & Concepts

Central Theme #1: Sleep is not well understood.

Humans spend nearly a third of their lives asleep. It is clear that sleep is crucial to the body's health, yet we do not fully understand why we need it or what sleep does for the human body .

MAJOR CONCEPTS:

- Humans experience four distinct phases of sleep. The first three are dreamless phases of increasing depth, followed by a fourth, highly active period known as “rapid eye movement” (or REM sleep), which is when most dreams occur.
- Humans may not have gotten the same amount of sleep throughout history; in fact, early humans and hunter-gathers may have slept less than people do today.
- Some experts argue that the reason humans sleep has to do with memory. Others suggest sleep helps humans get rid of unwanted material (or debris) in the brain that collects throughout the day. Another promising theory of sleep is that it plays a major role in the brain's connectivity and plasticity, which impacts learning and memory.
- It is difficult to understand why we sleep because it is challenging to isolate and study. Sleep-deprivation studies are the most common way to study sleep, but depriving people or animals of sleep disrupts biological processes.
- The circadian rhythm is a 24-hour internal clock made up of about 20,000 nerve cells; these are located in the hypothalamus region of the brain that controls important metabolic processes. An individual's circadian rhythm (or clock) helps him or her to cycle between sleepiness and alertness at regular intervals.



Central Theme #2: Most of the population is not getting enough sleep.

Worldwide, statistics show that much of the population has a high sleep deficit, consistently getting less sleep per night than what is recommended. In fact, more than a third of adults are not getting enough sleep on a regular basis. People often cut back on their sleep as a result of work demands, family responsibilities, or even to watch a good TV show and relax. If not getting enough sleep is a regular part of someone's routine, he or she may be at an increased risk for diabetes, heart disease, high blood pressure, obesity, poor mental health, and even premature death.

MAJOR CONCEPTS:

- Technology is often blamed for lack of sleep, both for overstimulating individuals and because blue light from such devices suppresses melatonin, a sleep-inducing hormone.
- Those who do not get enough sleep are more likely to suffer from chronic diseases including cancer, depression, diabetes, hypertension, and obesity.
- Sleep-deprived people are costing the United States over \$400 billion per year; according to a report by Rand Europe, some 1.2 million working days are lost in the United States every year due to tired employees.
- Social jet lag, sleepiness from waking up an hour or more earlier than your body desires to meet social obligations, is experienced by 1/3 of Australians.
- Children and adolescents need a different amount of sleep than adults. The National Sleep Foundation recommends that teens get eight to ten hours of sleep per night. Cornell University psychologist James B. Maas, a leading sleep expert, goes so far as to call American teenagers “walking zombies” due to surviving on so little sleep.
- Between 10% to 30% of adults experience insomnia, and for up to 1 in 10 adults, insomnia can become a chronic disorder.



Central Theme #3: The “sleep industry” is booming because of poor sleep.

“What’s exciting about the future of sleep is that people will be able to pinpoint the reasons why they aren’t sleeping, and then they’ll be able to do something about it.” — Bryan Murphy, founder and president of Tomorrow Sleep

If people know they are not sleeping well, the next questions are *why?* and *how can it be improved?*

As attention has shifted to the importance of sleep, a booming “sleep industry” has emerged. Companies are devoted to using the latest science to create products ranging from mattresses and sheets to sound-management solutions, exciting people with promises of a sounder, more efficient night of sleep.

MAJOR CONCEPTS:

- Experts say people are not sleeping enough and that, when they are, they are doing it badly. It is not uncommon for people to use caffeine and sugar to stay awake, then take sleeping tablets when they are ready to crash.
- A range of products exist to resolve common sleep problems caused by bedroom temperature, noise, light, and sleep disorders (such as sleep apnea and insomnia). Products that promise to stimulate restorative deep sleep, or sensors that can help to identify important health factors, work to improve the benefits achieved by sleep.
- The growing body of research and increased public awareness around sleep has put slumber at the forefront of everyone’s minds. In turn, our so-called “sleep epidemic” has sparked an industry trend dedicated to helping people rest.
- As our society becomes increasingly more tired, companies are realizing there is a growing opportunity for innovation. Particularly, technology can be leveraged to solve the problems that those in the sleep industry have not been able to solve for decades prior .
- It makes sense that the sleep industry is booming: over 50% of sleep-tech users report regularly getting better sleep.

Article
Summaries

Digital
Resources

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Resources & Summaries

AAST Editor (2017, December 18). Experts weigh in on the future of sleep technology.

Sleep therapy can help people get a better night's rest. In the coming years, the role of sleep technologists will continue to grow. These specialists explore promising approaches to sleep medicine. Future developments will be increasingly home-based. They will incorporate nanotechnology and nonmaterial to help people sleep better almost anywhere. In-lab testing will become more common to detect sleep problems. Remarked Rita Brooks, director of diagnostic services at Capital Health, "I expect that in the not-too-distant future we will be diagnosing and treating the majority of our patients from the comfort of their homes, and our sleep centers will be reserved for our complicated high-risk patients."

Retrieved from <https://www.aastweb.org/blog/experts-weigh-in-on-the-future-of-the-sleep-technology>

Bellis, R. (2017, November 26). How to design your ideal workday based on your sleep habits. *Fast Company*.

Many people start their day with one or more cups of coffee. However, sleep specialists say that when a given person feels most benefits from caffeine depends on their sleep type. Michael Breus, author of *The Power of When*, says there are four kinds of people in the world when it comes to falling asleep and waking back up. He calls them "bears," "lions," "wolves," and "dolphins." According to Breus, acting like a "lion" when you're actually a "bear" can make it harder for you to wake up and remain productive through the entire workday.

Breus estimates that between 50% and 55% of the world's population are "bears." These are individuals who maintain normal sleep schedules but may not get all of the sleep they need. Their peak working hours are from 11 a.m. to 6 p.m. They tend to power down their devices around 10 p.m. and turn out the lights by 11 p.m.

Approximately 15% of the population are "lions." These individuals awaken while it is still dark out, usually without an alarm. They tend to be Type-A personalities whose peak working hours are from 10 a.m. to 5 p.m. They end their days between 9:30-10:30 p.m.

Between 15% and 20% of the population are "wolves." They dislike mornings and often hit the snooze button several times. Many arrive a bit late to work and rely on several cups of coffee each morning to "overcome their wolfishness." Wolves achieve their peak productivity between noon and 8 p.m. They often prefer to eat a late dinner (around 8 p.m. or 9 p.m.) before powering down their devices by 11 p.m. and calling it a day about midnight.

The remaining 10% or so of the population are "dolphins." These are anxious people who do not have regular sleep schedules. Many self-diagnose themselves as insomniacs. Their peak working hours are from 10 a.m. to 6 p.m. It is recommended that dolphins avoid watching TV and relax in a hot bath each evening to help unwind. They should avoid the temptation to "beat themselves up" if they have trouble falling asleep.

Retrieved from <https://www.fastcompany.com/40491564/how-to-design-your-ideal-workday-based-on-your-sleep-habits>



Braithwaite, P. (2018, July 15). This brain-hacking headband is out to solve your sleep crisis. *Wired*.

Sleep is a biological necessity. Dreaming occurs during what is called Rapid Eye Movement (REM) sleep. Lack of REM sleep can lead to depression. Dreem, an advanced fabric headband, is designed to help people achieve deeper sleep. It monitors and analyzes a user's brain activity as he or she sleeps.

The idea for Dreem came from Hugo Mercier, who became fascinated with the human brain while studying computer science and advanced mathematics at Paris' Ecole Polytechnique. "What we saw was that by sending auditory stimulation to the brain, synchronized with specific patterns of the brain, we are actually able to enhance the quality of deep sleep in a pretty significant way," Mercier said.

In the United Kingdom today, approximately one-third of all adults do not get enough sleep. It is estimated that the average UK adult loses the equivalent of a full night's sleep each week. Dreem can help to address these problems. By synchronizing a user's heart rate and breathing, it can help individuals fall asleep 30% faster than they otherwise would. It encourages deep sleep by sending soothing sounds directly into the brain. It also provides suggestions for ways that users can achieve even deeper sleep in the future.

Retrieved from <http://www.wired.co.uk/article/dreem-headband-how-to-get-better-nights-sleep>

Clark, L. (2017, March 2). Fitness trackers on elephants reveal they sleep less than any other mammal on Earth. *Wired*.

Elephants get less sleep than any other mammal. To learn this, a team of researchers in South Africa safely tranquilized several elephants and inserted fitness trackers in their trunks. They found that, in their natural habitats, elephants rest for only two hours each day. Most of the time, they sleep in a standing position. Meanwhile, elephants only lie down to sleep — and experience REM sleep — every few days. When in zoos, however, elephants average between four to six hours of sleep each day.

Retrieved from <http://www.wired.co.uk/article/african-elephants-sleep-two-hours>

Cooke, R. (2017, September 24). 'Sleep should be prescribed': What those late nights out could be costing you. *The Guardian*.

Matthew Walker is a sleep scientist. He serves as director of the University of California at Berkeley's Center for Human Sleep Science. The center's main goal is to learn everything about how sleep affects humans, from birth to death. In part, that is because Walker believes we are in the middle of a "catastrophic sleep-loss epidemic."

People who don't get enough sleep can experience negative health outcomes. They include Alzheimer's disease, cancer, diabetes, mental health problems, and obesity. "No aspect of our biology is unscathed by sleep deprivation," Walker said. "It sinks down into every possible nook and cranny. And yet no one is doing anything about it."

Many people today regard sleep as a sign of laziness. For example, busy people seem to take pride in telling others how little sleep they get. However, sleep needs to be a priority for everyone. Eight hours of sleep or more each night should be everybody's goal. Without adequate sleep, people tend to experience low energy and disease. A growing number of studies even show that people who sleep less tend to have shorter lives. That is because sleep has a major effect on the human immune system.

Retrieved from <https://www.theguardian.com/lifeandstyle/2017/sep/24/why-lack-of-sleep-health-worst-enemy-matthew-walker-why-we-sleep>

Curtin, M. (2018, May 17). Brain science suggests this is the best position to sleep in. *Thrive Global*.

Lack of sleep is an important health concern. People who don't get enough sleep are more likely to suffer from cancer, depression, hypertension, obesity, and other chronic diseases. A person who goes without food for approximately two weeks will starve to death. A person who goes without sleep for extended days will die even more quickly than from starvation.

When people sleep, their bodies clean out waste from their brains. The best position for ridding the body of such unwanted material is sleeping on your side. In addition to maximizing brain functioning, this position is helpful for pregnant women, individuals with back or neck pain, and those who tend to snore.

Retrieved from <https://www.thriveglobal.com/stories/31491-neuroscience-suggests-this-sleep-position>

Dawood, U. (2018, March 29). Bed to the future: 6 predictions on the future of sleep. *Sleep Junkies*.

In the future, "floating beds" may be common in bedrooms throughout the world. When they are not being used, they will float up to the ceiling to keep them out of the way. For those on a tight budget, cardboard beds will likely be an option. Made from recycled materials, some versions have already been created that can support the weight of more than a dozen people. Advanced beds of the future are expected to be able to adjust the room's temperature and monitor the user's vital signs throughout the night.

Self-cleaning mattresses are also expected to be common in the coming years. Once perfected, they will be able to sterilize themselves using a technology similar to that of today's vacuum cleaners. Built-in screens with speakers are likely to come attached to beds of the future. This will allow the user to experience pleasing images and sounds while trying to fall asleep. Light-up pillows are currently also being developed to help individuals wake up more gently. At a set time, they will begin to light up gradually to help with the body's sleep-wake cycle.

Retrieved from <https://sleepjunkies.com/technology-and-gadgets/6-predictions-future-of-sleep/>

Devlin, H. (2017, July 12). Restless development: Bad sleep may be evolutionary survival tool, study finds. *The Guardian*.

Restless sleep actually may be an ancient survival mechanism to help protect people from nighttime threats. That is the conclusion of researchers who studied the present-day sleep patterns of a tribe of 33 hunter-gatherers in Tanzania. They found that different sleep schedules and frequent waking throughout the night kept the tribe safer because at least one member was awake at almost all times. (During the 20-day study, there was a total of 18 minutes when all members of the tribe were asleep at the same time.)

"What we're finding in these populations is that the total sleep time is fairly low," said Duke University researcher David Samson. "In western society, we're actually getting more secure, decent sleep than hunter gatherers." The subjects of this study sleep on the ground, with no climate control or artificial lighting. Unlike individuals in developed countries, they are not concerned about insomnia or other sleep problems.

Retrieved from <https://www.theguardian.com/science/2017/jul/12/bad-sleep-evolution-survival>



Devlin, H. (2017, October 6). ‘Western society is chronically sleep deprived’: The importance of the body’s clock. *The Guardian*.

In 2017, U.S. biologists Jeffrey Hall, Michael Rosbash, and Michael Young were awarded the Nobel Prize in Medicine. Their research pertains to circadian rhythms in relation to the sleep cycle. Using fruit flies, they isolated a gene that offers insight into how humans, animals, and plants synchronize their biological rhythms with the Earth’s revolutions. They also emphasized the ways that light can impact individual sleep patterns.

The “sleep hygiene” movement encourages people to think about how light affects their sleep. For example, researchers know that bright lights before bedtime can affect an individual’s circadian cycle. So can spending a long workday in a poorly lit office. People who regularly experience such conditions tend to exist in a “continual mental twilight.” This state makes them feel tired in the morning and too alert to drift off to sleep quickly at night.

Lack of sleep can cause bigger problems than simply feeling tired. Growing evidence shows that it can pose long-term health threats, increasing the risk of serious illness. That finding is troubling because sleep deprivation is so widespread today. “It’s been overlooked for a long time as a real public health problem. All of western society is a little bit sleep-deprived and, when I say a little bit, I mean chronically,” Rosbash said.

Retrieved from <https://www.theguardian.com/science/2017/oct/06/western-society-is-chronically-sleep-deprived-the-importance-of-the-bodys-clock>

Dodgson, L. (2018, April 3). If you obsess over your sleep you might have ‘orthosomnia’ — here’s what it means. *Business Insider*.

Not getting enough sleep can cause problems. Worrying about not getting enough sleep can cause problems too. Obsessing over whether or not one is consistently getting a good night’s sleep has created a new disorder called “orthosomnia.” It is the condition when individuals obsess over the results of the sleep-tracking apps they use, which can result in even worse sleep.

Orthosomnia occurs when individuals worry so much about getting a perfect night’s sleep that it prevents them from actually getting one. It is conceptually similar to orthorexia, which is obsession with healthy eating to the point that it becomes unhealthy. Rather than relying on how they actually feel, individuals with orthosomnia find they are unable to ignore what their sleep-tracking apps are telling them. According to sleep scientists, the best way to increase one’s chances of consistently getting a good night’s sleep is to go to bed and wake up at the same time each day.

Retrieved from <http://www.businessinsider.com/people-with-orthosomnia-obsess-over-their-sleep-2018-3>

Franceschetti, M. (2018, February 6). Why technology is the future of sleep. *Forbes*.

People sleep about one-third of their lives. Nevertheless, in 2016, the U.S. Centers for Disease Control and Prevention found that one-third of all adults do not get enough sleep. Tired employees in the United States cost the country more than \$400 billion dollars a year in lost work productivity. Approximately 1.2 million working days are lost in the United States each year due to sleep-deprived workers.

People in the United States and throughout the world today are experiencing a sleep epidemic. As a result, an entire industry is emerging to help people achieve a better night’s sleep. Various companies now exist to bring technological advancements into people’s bedrooms. Some of these advancements control the bedroom temperature while people sleep. Others are designed to reduce noise and light to help individuals sleep better. It is widely believed that, in the coming years, enhanced sleep will be achieved through science. Improving sleep is important to keeping people healthy, as sleep deprivation increases the risk of Alzheimer’s disease, heart attack, stroke, weight gain, and other unhealthy conditions.

Retrieved from <https://www.forbes.com/sites/forbestechcouncil/2018/02/06/why-technology-is-the-future-of-sleep>



Goldman, J. (2017, February 21). The surprising truth about why we sleep and how much we need. *BBC*.

Sleep is one of the most misunderstood aspects of human behavior. For example, many people have heard that we get fewer hours of sleep today in comparison to our hunter-gatherer ancestors. There is no clear data available to support that belief.

It is impossible for us to know how many hours a day our hunter-gatherer ancestors slept, but it is possible to find out how many hours a day today's hunter-gatherers sleep. To learn the answer, Jerry Siegel, director of the UCLA Center for Sleep Research, spent time with hunter-gatherer groups in Bolivia, Namibia, and Tanzania. Such individuals live in environments that are as close as possible to the ones our ancestors experienced.

The hunter-gatherers Siegel studied have spent their entire lives without modern conveniences that can interfere with sleep. He found that, on average, they all typically spend the same amount of time sleeping each night: six and a half hours. He says there is no reason to believe our ancestors would have gotten more sleep than that. He also says that our ancestors did not nap in several different periods throughout each night, as many people believe.

Retrieved from <http://www.bbc.com/future/story/20170220-the-surprising-truth-about-why-we-sleep-and-how-much-we-need>

Greenwood, V. (2017, July 7). Having this gene may make some people night owls. *Scientific American*.

Night owls are people who can't fall asleep until very late and only feel rested if they get up later than most others. Researchers believe such individuals may have a form of insomnia called delayed sleep phase disorder (DSPD). Their bodies tend to produce melatonin, the sleep-inducing hormone, several hours later than a typical person. Their sleep also commonly comes in the form of a series of short naps.

Researchers have identified a mutation, in a gene known as *Cry1*, that appears to cause DSPD. Many people with this mutation go to bed, and wake up, later than typical others. However, the link between this mutation and those traits has not yet been proven.

Retrieved from <https://www.scientificamerican.com/article/having-this-gene-may-make-some-people-night-owls/>

Hanna, H. (2017, March 16). Our serious sleep problem. *Thrive Global*.

Getting an average of eight hours of sleep each night is important. This helps our minds and bodies to recharge before the start of a new day. People with a sleep deficit start their days with an immediate stress response. They are more distracted all day long.

Those who don't get enough sleep often rely on caffeine, sugar, and stress hormones to make it through the day. Although such stimulants may temporarily make individuals feel more awake, their use triggers inflammation within the human body. This can lead to serious consequences over time, including brain imbalances (such as anxiety and depression), heart attack, and stroke.

Different people have differing sleep needs. Most studies, however, conclude that humans require between six and ten hours of sleep each night. That is where the average of eight hours per night originates. Meanwhile, getting anything less than six hours of quality sleep each night reduces cognitive functioning and increases stress symptoms in almost everyone.

People who are in need of longer stretches of sleep tend to rely on an alarm clock to wake up, drive in a drowsy state, are forgetful, and make a lot of mistakes. They are also frequently anxious, depressed, irritable, or sick and usually require the consumption of multiple cups of coffee (or other energy drinks) to stay awake for the entire day.

Retrieved from <https://www.thriveglobal.com/stories/3316-our-serious-sleep-problem>

Heid, M. (2018, July 12). Do you really need less sleep as you age? *Time*.

To ensure proper development, children need more sleep than adults. The National Sleep Foundation recommends that teenagers get between eight to ten hours of sleep each night and that younger kids obtain even more than that. But how about adults? Do they need less sleep as they get older? The answer, according to University of Chicago sleep researcher Leila Kheirandish-Gozal, is no. "The amount of sleep needed doesn't change," Kheirandish-Gozal said.

Over time, not getting enough sleep can negatively affect a person's heart function, memory, metabolism, and mood. It also increases the risk of diabetes, forgetfulness, heart disease, obesity, and other medical conditions. Although the ability to sleep for extended periods tends to decrease as people get older, their overall sleep needs typically remain the same. Anyone who experiences emotional instability, such as feeling anxious or moody on a regular basis, likely requires additional sleep. The same is true for individuals who fall asleep within a minute or two of crawling into bed.

Retrieved from <http://time.com/5335937/do-you-need-less-sleep-as-you-age/>

Knowles, K. (2017, June 23). Are lazy weekend lie-ins damaging your health? *The Memo*.

Sleeping in late on the weekends can be harmful to your health. Doing so causes "social jet lag." It results from having different sleep patterns during the week and on the weekends. Each hour of social jet lag can decrease an individual's potential to experience excellent health. Too much social jet lag can result in heart disease. When in doubt, therefore, it is better to drag yourself out of bed a little earlier than you might like on your Saturdays and Sundays.

Retrieved from <https://www.thememo.com/2017/06/23/health-science-of-sleep-science-social-jet-lag-university-of-arizona/>

Kosecki, D. (2017, March 6). REM, light, deep: How much of each stage of sleep are you getting? *Fitbit*.

Wearing a Fitbit can help people to monitor their sleep patterns. The device is able to detect how much time a person spends in light, deep, and rapid eye movement (REM) sleep to help identify any sleep-related concerns.

Light sleep is not particularly restful. It is a choppy and shallow sort of sleep. Deep sleep allows a person's breathing to slow and body to relax. It also strengthens the immune system. REM sleep is all about clearing the brain of information that is no longer needed. It helps to regulate emotion and improve memory. The human body cycles through all of these stages several times a night.

On average, 50% to 60% of a person's sleep each night is light sleep, 10% to 25% is deep sleep, and 20% to 25% is REM sleep. But getting too much REM sleep can cause problems. Too much brain activation in this stage can leave people feeling angry or irritable in the morning. Excessive REM sleep can also lead to ongoing anxiety and depression.

Retrieved from <https://blog.fitbit.com/sleep-stages-explained/>

Laurence, E. (2017, August 7). The plus factor: This is what the future of sleep looks like. *Well + Good*.

The future of sleep will end up being a bit darker. Controlling light exposure will help people to achieve a better night's sleep. Sleep experts believe that electronics with blue-blocking filters will become more common. They will come on an hour or two before a person's bedtime to begin conditioning the individual for sleep. Technology will also work to keep mattresses at a perfect temperature and minimize outdoor noise.

In the coming years, tracking sleep will become at least as popular as the current trend of tracking steps. All sorts of gadgets are being developed to monitor people's sleep patterns. They range from cellphone apps and watches to bedside monitors and "smart mattresses" that track how long individuals sleep and how much time they spend in each phase of sleep. It will not be long before people will have more data about their sleep-related behaviors than ever before.

Currently, prescription drugs like Ambien are commonly used to help people beat insomnia. In the coming years, however, alternatives such as acupuncture, crystal light beds, and even shamanism are anticipated to become more common ways of achieving that same goal. In addition, sleep pods will continue to become more common in workplaces to allow tired employees to take short naps during the workday.

Retrieved from <https://www.wellandgood.com/good-advice/the-plus-factor-sleep-bedtime-tech-innovations/slide/2/>

Leighton, M. (2018, June 16). We put these melatonin drinks to the test to see if they helped us sleep better — it turns out they actually made a difference. *Business Insider*.

For many people, few things are as frustrating as crawling into bed at the end of a long day and not being able to fall asleep. The beverage Som Sleep may be able to help. Its formula includes vitamin B6, melatonin, and other ingredients that promote relaxation and healthy sleep patterns. As a result, it serves as a drug-free, non-habit-forming sleep aid. To work most effectively, individuals need to reserve between seven to eight hours of sleep time after consuming the Som Sleep beverage. It costs about \$2.50 per can.

Retrieved from <http://www.businessinsider.com/som-sleep-melatonin-sleep-aid-drink-review-2018-6>

Loria, K. (2015, January 16). How to figure out how much sleep you really need. *Business Insider*.

People spend one-third of their lives sleeping, yet many are still tired all of the time. Findings by the National Sleep Foundation reveal that 35% of Americans have either “poor” or “only fair” sleep experiences. In addition, 40% of Americans sleep less than seven to nine hours each night.

People often wonder how much sleep they actually need. The answer isn’t simple, as sleep needs vary from one person to the next. Individuals are unique and need different amounts of sleep. As a result, experts say you should try out different type of sleep behaviors to determine what works best for you. However, if you allow yourself to go to sleep when you feel tired, wake up when it feels right, and still find that you have trouble sleeping over time, it is a good idea to consult with a doctor. You may have undiagnosed sleep apnea or some other disorder that needs to be addressed.

Retrieved from <http://www.businessinsider.com/how-much-sleep-do-you-need-2015-1?r=UK&IR=T>

McMillan, F. (2018, June 19). New discovery reveals how your brain changes when you need sleep. *Forbes*.

Many people have trouble getting a good night’s sleep. For example, experts estimate that up to 30% of adults experience insomnia. For some of them, it is a chronic disorder. Unfortunately, sleep deprivation leads to various forms of cognitive impairment. In its more extreme forms, it can result in accidents at work or while driving.

Experts know that sleep enables the brain to reset itself, and integrate newly learned information at the end of the day. New research shows that these processes are enabled by small changes in proteins in the brain, comparable to flipping a switch. When everything works as desired, sleep allows proteins in the brain to reset themselves, resulting in clear thinking and better memory. Sleep deprivation, however, prevents this much-needed reset from occurring, resulting in cognitive impairment.

Retrieved from <https://www.forbes.com/sites/fionamcmillan/2018/06/19/new-discovery-reveals-how-your-brain-changes-when-you-need-sleep/#4da235196dee>

Medeiros, J. (2017, June 29). The iPhone is ruining teenagers’ sleep patterns. But it can also fix them. *Wired*.

Among other things, the iPhone has been blamed for disturbing people’s sleep patterns. Using smartphones late in the day can delay the onset of sleep. Teenagers tend to be most vulnerable to this sort of sleep deprivation. As a result, many of today’s teens are chronically tired, which has a negative impact on their performance in school.

“People are beginning to wise up,” said Russell Foster, a sleep researcher at the University of Oxford. “Frankly, you need to turn the things off 30 minutes before you want to go to bed to get to a relaxed state. Stop doing e-mails, stop texting, and do something that relaxes you.” Foster believes that, in the coming years, iPhones should include guidelines about proper use and the importance of not allowing them to delay sleep onset.

Retrieved from <http://www.wired.co.uk/article/sleep>

Monroe, H. (2018, July 2). The importance of sleep for teen mental health. *U.S. News & World Report*.

Ideally, the typical teenager needs nine hours of sleep per night. Very few get that much. In fact, recent survey findings reveal that fewer than 10% of teens get enough sleep. Further, the amount of sleep they get continues to decrease as they proceed through high school.

According to sleep expert James B. Maas, many U.S. teens are “walking zombies” because they get so little sleep. Schools starting early in the morning, in addition to extracurricular activities, homework, and caffeine use all have negative effects on the amount of rest they receive. Researchers have found that sleep deprivation is linked to teenage anxiety and depression. They estimate that every hour of lost sleep results in a 38% increase in feelings of hopelessness and sadness, as well as a 58% increase in suicide attempts.

Lack of sleep produces turbulent emotions in teens. It also negatively affects their decision-making abilities and impulse control. To achieve better sleep, teens should get up at the same time each day, take naps when they can, disconnect from technology earlier, exercise regularly, do yoga before bedtime, and avoid eating sugar at night.

Retrieved from <https://health.usnews.com/health-care/for-better/articles/2018-07-02/the-importance-of-sleep-for-teen-mental-health>

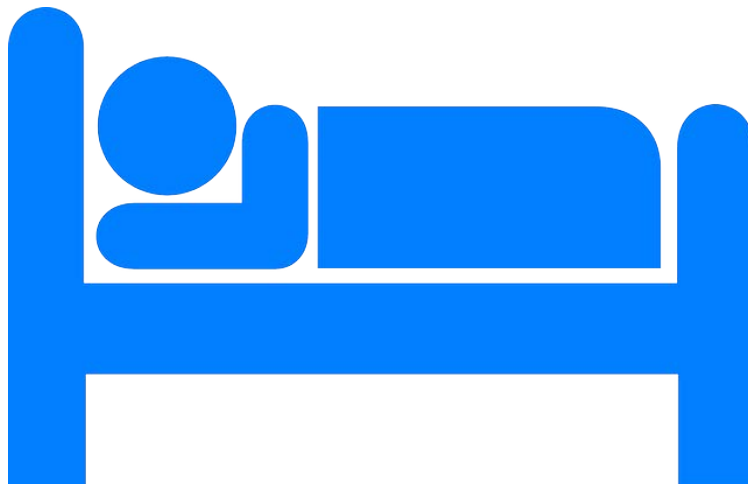
Nir, Y. (2017, November 2). Falling walls: Untangling the mystery of sleep. *Scientific American*.

Good sleep is essential for personal well-being. It is important for sustaining attention, supporting memory, and enabling our brains to recuperate at the end of a long day. Poor sleep quality endangers a person’s mood and health. It also impairs immunity and slows a person’s metabolism.

The systematic study of sleep by scientists began in the 1920s. Early on, it focused on different sleep stages, such as rapid eye movement (REM) sleep and non-REM (NREM sleep). Since then, research has shifted its focus to studying distinct waves of electrical activity in certain parts of the brain. For example, those in the field of sleep science have found typical sleep patterns alternate between “islands of sleep” and “islands of wakefulness” that differ in well-rested and sleep-deprived individuals.

Lack of sleep is a significant cause of various kinds of accidents. It is similar in danger to consuming alcoholic beverages. As a result, researchers strive to learn as much about sleep as possible. For instance, they are trying to determine why some people can sleep through almost anything while others are awakened easily. Other studies are also working to find ways to improve sleep that do not rely on the use of medications.

Retrieved from <https://blogs.scientificamerican.com/observations/falling-walls-untangling-the-mystery-of-sleep/>



Patty, A. (2018, July 8). One-third of Australians are ‘jet-lagged’ from lack of sleep. *The Sydney Morning Herald*.

A study published in the journal *Sleep Medicine* found that one-third of Australians experience social jet lag. This is sleepiness from waking up an hour or more earlier than your body desires to meet social obligations, like getting to work on time. For many of them, the social jet lag is caused by using their laptops and tablets during the hour before they go to sleep. Such tendencies can cause exhausted individuals to call in sick, make mistakes, or fall asleep in the workplace.

Many people who are experiencing social jet lag choose to go to work when they do not wake up feeling refreshed. Robert Adams, lead author of the study, believes they do this because they commonly experience jet-lag-like symptoms but can't afford to skip too many workdays. "They are more likely to report reduced productivity and more likely to feel unwell," Adams said, "and their cognitive performance is diminished as well."

Using a computer or similar device before heading to bed winds up people's energy at a time when they should be winding down. This makes it harder for them to fall asleep. The blue light from a screen can also affect melatonin, the sleep hormone, and in turn keep individuals awake longer.

Researchers say that sleep should be regarded as the third pillar of good health, in addition to exercise and a healthy diet. According to Dorothy Bruck, chair of the Sleep Health Foundation, a lack of adequate sleep is quickly becoming a crisis. "We now have a dire situation where millions of Australians are failing to get the sleep they need to live happy, healthy lives," Bruck said. "Sleeplessness is damaging our everyday lives much more than people realize."

Retrieved from <https://www.smh.com.au/business/workplace/one-third-of-australians-are-jet-lagged-from-lack-of-sleep-20180708-p4zq7t.html>

Plummer, L. (2016, August 3). There's a ‘switch’ in our brains that wakes us up. *Wired*.

Scientists have discovered a "switch" in the brain that lets people know when it is time to go to bed and wake up. This unique "controller" is called the "sleep homeostat." When studying the brains of fruit flies, researchers observed that when brain cells are actively alive, the sleep homeostat causes them to sleep. In contrast, when brain cells affecting the sleep homeostat are silent, the fruit flies are awake. In their experiments, the researchers were able to flip a fruit fly's "sleep switch" by using general anesthetics to increase dopamine levels. They believe the same principle will apply to humans.

Retrieved from <http://www.wired.co.uk/article/how-brains-wake-us-up>

Ruppner, L. & Maume, D. (2018, July 11). Why couples sleep better in these countries. *The Sydney Morning Herald*.

Many people do not get enough rest and restoration at night. A study of European couples found that men are more likely to have their sleep disrupted by work-related demands and women are more likely disrupted by children and family responsibilities. The researchers concluded that couples end up sleeping better in countries with higher levels of gender equality. That is because men living in gender equal societies play a more active role in childcare obligations and women enjoy a more equal division of housework tasks.

Retrieved from <https://www.smh.com.au/lifestyle/health-and-wellness/why-couples-sleep-better-in-these-countries-20180709-p4zqbk.html>



Segran, E. (2017, September 18). Here's how the latest sleep-science gadgets affected my productivity. *Fast Company*.

Sleep science is still in its early stages. However, at this point, researchers know that the amount a sleep an individual needs varies from one person to the next. Getting enough sleep on a regular basis is essential for effective brain function, good health, and overall well-being. The growing “sleep industry” continues to offer a range of possible solutions to help people get a sounder night’s sleep.

Recently, Elizabeth Segran, Ph.D., picked out and personally tested a variety of sleep products over the course of one month. Her goal was to see if they actually

work. After examining nearly 25 different mattresses, she was most intrigued by one made by the company Tomorrow, a subsidiary of Serta Simmons. The company’s products promise to create the ideal “microclimate” for a good night’s sleep.

The Tomorrow mattress is designed to adapt to a body’s changing temperatures throughout the night. “Research shows that the average person takes about 20 minutes to fall asleep,” said Bryan Murphy, founder of Tomorrow. “The mattress is designed to ensure that once you’re asleep and your body temperature goes up, you’re not too cold.”

The first night Segran used her Tomorrow mattress, the cool sensation she experienced when climbing into bed made her feel relaxed and sleepy. She also found it to be more comfortable than mattresses she has slept on in the past. Over the next few weeks, she found that her body felt better in the mornings because she wasn’t moving around all night to get comfortable. Her sleep experience was enhanced with soft, breathable sheets that are able to release body heat while someone is sleeping.

In addition to the new mattress and sheets, Segran used a Sleeptracker monitor to inform her of when she fell asleep each night and when her body entered different sleep stages. The data she received helped her to learn that she could actually spend less time in bed but still be extremely well-rested. She also installed light-blocking drapes in her bedroom and stored her cellphone and other electronic devices in a different room to prevent their “blue light” from disturbing her sleep.

Retrieved from <https://www.fastcompany.com/40461437/heres-how-the-latest-sleep-science-gadgets-effected-my-productivity>

Segran, E. (2017, December 14). This doll gives new parents the gift of sleep. *Fast Company*.

The Lulla doll has been scientifically proven to help newborns, babies, and toddlers sleep better. It features a built-in noisemaker with recorded heartbeat and breathing sounds that are similar to what a fetus hears inside a mother’s uterus. The sounds promote sleep by stabilizing a baby’s own heartbeat and breathing.

When the Lulla doll went on the market in 2006, it originally sold for \$65. Competition on eBay for the doll, from sleep-deprived parents, drove that price up to \$665. Nearly three-quarters of parents reported that their child sleeps longer when holding the doll.

Retrieved from <https://www.fastcompany.com/40508135/this-doll-gives-new-parents-the-gift-of-sleep>

Smith, O. (2017, August 25). Technology isn't stealing your sleep, but it is destroying how you sleep. *Forbes*.

At least one in three people struggles with getting enough sleep. In Japan, at least half or more of the population obtain less than seven hours of sleep a night. Contrary to popular belief, sleep expert Sophie Bostock says that electronic-device screens are not reducing the number of hours people sleep. Instead, they are affecting when people choose to sleep throughout the week.

“Studies have looked at different sleep patterns on different days of the week,” Bostock said. “What it looks like is that we’re sleeping less on those weekday work nights and trying to catch up on the weekend.” However, sleep-binging on the weekend is not a healthy thing to do. “We need sleep every night to protect ourselves in terms of physical functioning and health,” Bostock added.

Retrieved from <https://www.forbes.com/sites/oliversmith/2017/08/25/technology-isnt-stealing-your-sleep-but-it-is-destroying-how-you-sleep/#1110c0c66d3a>

Tellekson-Flash, W. (2016, April 15). 8 superfoods for better sleep. *Well + Good*.

Getting enough sleep affects everything from a person's eating habits to immune system. Various foods can enhance the quality of one's sleep. According to chef Jason Wrobel, the time is now to stop using caffeine and stock up on food items that can help to improve the quality of time you spend under the covers.

Because they are high in potassium and B vitamins, eating almonds and bananas can help a person's nervous system to relax. Eating brown rice is also helpful for getting a good night's sleep because it contains gamma-amino butyric acid (GABA), “which is a natural Ambien,” Wrobel said, that works like a super-mellow tranquilizer. Eating cherries motivates the body to release melatonin, and eating chickpeas benefits the entire sleep cycle. Kale, oatmeal, and walnuts are three other food items that can lead to more effective sleep.

Retrieved from <https://www.wellandgood.com/good-food/8-foods-to-help-you-sleep/slide/2/>

Walton, A. (2018, January 5). New clues about why sleep loss is linked to depression, anxiety. *Forbes*.

Sleep-deprived individuals are predisposed to developing depression. Repetitive negative thinking (RNT) appears to play a role in this process. It is defined as an “abstract, perseverative, negative focus on one's problems and experiences that is difficult to control.” Often, the sorts of thoughts related to depression involve ongoing negative reflections on things that have happened in the past.

In a recent study published in the *Journal of Behavior Therapy and Experimental Psychiatry*, researchers studied individuals who had been experiencing intrusive thoughts or sleep issues. Once in the lab, they showed these people negative images (such as of threatening animals and knives), positive images (such as of sports and nature), and neutral images (such as of common household items). The researchers used eye-tracking technology to determine which images attracted their attention the most.

The researchers learned that individuals who get less sleep found it difficult to avoid attending to the negative images. They spent more time looking at the negative images and reflecting on them. Their findings suggest a link between sleep problems and a lack of ability to suppress negative thoughts. “While other people may be able to receive negative information and move on, the participants had trouble ignoring it,” said researcher Meredith Coles.

The study contributed to growing research activity in this area. For example, another recent study found that sleep-deprived teens reported more symptoms of depression. The authors of that study concluded that lack of adequate sleep during the teenage years may make adolescents more susceptible to developing depression and addiction later in life.

Retrieved from <https://www.forbes.com/sites/alicegwaltton/2018/01/05/new-clues-about-why-sleep-loss-is-linked-to-depression-anxiety>

Wegorzewska, M. (2018, July 12). VIP neurons hold master key to jet lag response. *Washington University in St. Louis*.

Jet lag is common among people who travel by plane to visit different parts of the world. If individuals could take control of the daily timing system in their brains, jet lag could be reduced or even eliminated. Recently, researchers at Washington University in St. Louis discovered a cure for jet lag in mice. It required activating several neurons in their brains that are associated with setting daily rhythms.

The body's daily (or circadian) clock synchronizes all essential daily functions with local time. This "master clock," located at the bottom of the brain, reminds individuals to wake up or head to bed at a regular time each day. However, this system can get disturbed when individuals work overnight shifts or travel to different time zones. When this occurs, the 20,000 neurons in the "master clock" tend to have difficulty adjusting the body to a different schedule.

In the study involving jet lag in mice, the researchers focused on a subset of neurons that produce vasoactive intestinal polypeptide (VIP). VIP is a compound the neurons use to synchronize their daily rhythms. "We hypothesized that VIP neurons are like the grandmothers who are in charge of telling everyone what to do," said researcher Erik Herzog. As a result, the researchers proceeded to test whether activating VIP neurons in the brains of mice could shift their daily schedules to avoid the jet lag phenomenon. The mice in the study were kept in darkness throughout the entire day and night so that they would not know what time of day it was. "We are really starting to understand how the timing system in the brain is wired together and found that the code used by VIP neurons is really key to setting our daily schedule," Herzog said.

Retrieved from <https://source.wustl.edu/2018/07/vip-neurons-hold-master-key-to-jet-lag-response/>

Weir, K. (2016, July/August). The science of naps. *American Psychological Association*.

Daytime naps in the workplace are becoming more common. The belief is that short afternoon naps can increase employee creativity and productivity. Clearly, daytime naps are beneficial for those who arrive at work tired. However, psychologists say that they are also beneficial for healthy adults who get a reasonable amount of sleep each night. Naps can help even well-rested employees to perform better in tasks involving reasoning, symbol recognition, and reaction time.

Daytime napping can help employees to be less impulsive and more tolerant of frustrating work conditions. They are also beneficial with regard to alertness, attention, memory, and learning. "What's amazing is that, in a 90-minute nap, you can get the same [learning] benefits as an eight-hour sleep period," said psychologist Sara Mednick. "And actually, the nap is having an additive benefit on top of a good night of sleep."

That said, not all research pertaining to naps is entirely positive. For example, some studies suggest that excessive sleep and napping can result in higher levels of C-reactive protein. This protein has been linked to negative health outcomes such as cancer, depression, diabetes, and heart disease. Various studies have also found that insufficient sleep and infrequent naps can increase C-reactive protein levels. In contrast, other studies suggest that naps actually improve immune function, so additional research still needs to be done in this area in the coming years.

Retrieved from <http://www.apa.org/monitor/2016/07-08/naps.aspx>

Digital Resources: Sleep Patterns

4 ALTERNATIVE SLEEP PATTERNS

Description: Many types of sleep patterns can be feasible and even preferable

Dreams. [4 alternative sleeping cycles that you didn't know about]. [Infographic].

Retrieved from <https://www.dreams.co.uk/sleep-matters-club/everything-you-need-to-know-about-sleep-cycles/>

9 DISCOVERIES ABOUT SLEEP

Description: This short video covers breakthroughs in the study of sleep throughout history

SciShow. (2017, February 05). 9 groundbreaking discoveries about sleep. [Video File].

Retrieved from <https://www.youtube.com/watch?v=-wa-ggApGQw>

BENEFITS OF SLEEP

Description: An overview of the benefits of sleep, especially in forming memories and remembering information

Ted-Ed. (2015, January 05). The benefits of a good night's sleep. [Video File].

Retrieved from <https://www.youtube.com/watch?v=gedoSfZvBgE>

CIRCADIAN RHYTHMS

Description: A short video on what circadian rhythms are and how they work

Sleep Research Foundation. [Your circadian rhythm]. [Video File].

Retrieved from <https://www.facebook.com/sleepresearchfoundation/videos/587821624935615/>

COST OF NOT GETTING ENOUGH SLEEP

Description: An infographic looking at statistics related to getting not enough sleep

National Healthy Sleep Awareness Project. [Little sleep, big cost]. [Infographic].

Retrieved from <http://www.sleepeducation.org/healthysleep/infographics/little-sleep-big-cost-infographic>

A HISTORY OF SLEEP HABITS

Description: A history of humans' sleeping habits in one infographic

Online Mattress Review. [The evolution of sleep]. [Infographic].

Retrieved from <https://www.businessinsider.com.au/history-of-sleeping-infographic-2018-2>

A LOOK AT HIBERNATION

Description: A short video describing how hibernation works in animals

Ted-Ed. (2018, May 03). How does hibernation work? [Video File].

Retrieved from <https://www.youtube.com/watch?v=xptpXSTgSY>

MICROCLIMATE BED AD

Description: An ad for the BedJet, which describes one solution for microclimate control

Creating the World. (2016, March 31). BedJet - Micro-climate control for your bed. [Video File].

Retrieved from <https://www.youtube.com/watch?v=Huv5dQgsxgE>

PHASES OF SLEEP

Description: A description of various types of sleep cycles and their benefits or limitations

SciShow. (2018, June 21). What do scientists really know about polyphasic sleep? [Video File].

Retrieved from https://www.youtube.com/watch?v=-wXppi_OfEo

SLEEP CYCLES IMPACT ATHLETE PERFORMANCE

Description: A podcast detailing sleeping patterns of athletes and how those patterns impact performance

Science Friday. (2015, January 30). Hitting the sack: Sleep cycles can affect athletes' performance [Podcast]

Retrieved from <https://www.fastcompany.com/40579176/whats-ruining-your-sleep>

SLEEP IMPACTS PRODUCTIVITY

Description: A podcast from *Fast Company* exploring how sleep impacts productivity
Fast Company. (2018, June 06). *Your lack of sleep is ruining your productivity.* [Podcast]
Retrieved from <https://www.fastcompany.com/40579176/whats-ruining-your-sleep>

THE SLEEP PATTERNS OF HIGH ACHIEVERS

Description: A brief article and a detailed infographic mapping out the sleep habits of high-achievers
Made to Measure Blinds UK. [Successful sleep patterns]. [Infographic].
Retrieved from <http://www.businessinsider.com/sleep-patterns-of-the-worlds-most-successful-people-2015-2>

SLEEP RESEARCH FOUNDATION INSTAGRAM

Description: The Sleep Research Foundation's official Instagram account with statistics and facts about sleep
Sleep Research Foundation [@sleepresearchfoundation]
Retrieved from <https://www.instagram.com/sleepresearchfoundation/>

THE SLEEP REVOLUTION* **

Description: A full book on sleep and its importance; includes excerpts that are useful for classroom use
Huffington, A. S. (2016). *The sleep revolution: Transforming your life, one night at a time.*

A SPOOKY, LOOK AT SLEEP APNEA

Description: A haunted, Halloween-themed infographic that takes a look at the spooky side of sleep apnea
National Healthy Sleep Awareness Project. [Haunted health]. [Infographic].
Retrieved from <http://www.sleepeducation.org/healthysleep/infographics/haunted-health-infographic>

STRANGE ANIMAL SLEEP HABITS

Description: A review of strange sleep behaviors in animals that help them survive
SciShow. (2016, September 04). *8 strange animal sleep habits.* [Video File].
Retrieved from <https://www.youtube.com/watch?v=muKuRQ8YnvE>

TECHNOLOGY TO HELP IMPROVE SLEEP

Description: An infographic about technology that helps people sleep; includes global sleep statistics
Big Brand Beds. [Technology to improve your sleep]. [Infographic].
Retrieved from <https://www.designbysoap.co.uk/client-infographic-technology-to-improve-your-sleep/>

TIME GUIDE TO SLEEP*

Description: A website collection of resources on sleep
Time guide to sleep. *TIME.*
Retrieved from <http://time.com/collection/guide-to-sleep/>

WHAT CAUSES INSOMNIA?

Description: A short video describing insomnia
Ted-Ed. (2018, June 14). *What causes insomnia?* [Video File].
Retrieved from <https://www.youtube.com/watch?v=xptpXSTtgSY>

WHAT HAPPENS WITHOUT SLEEP

Description: A look at what happens when humans stay awake for extended periods of time
Ted-Ed. (2015, November 12). *What would happen if you didn't sleep?* [Video File].
Retrieved from <https://www.youtube.com/watch?v=dqONk48I5vY>

*not all content has been screened for use in classroom

** may cover mature topics and be best for an older audience

Appendix

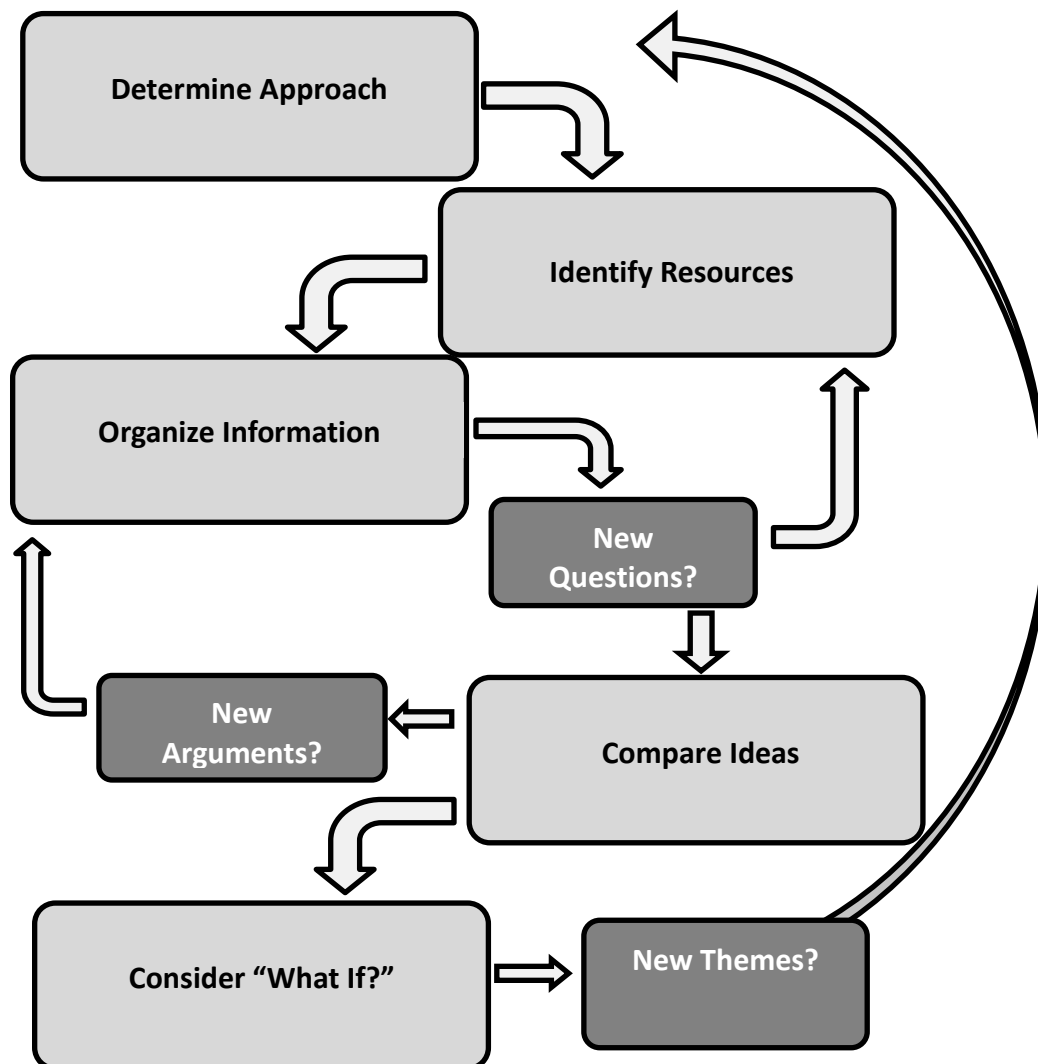
Research
Strategies,
Problem Solving
Tools, &
Practice Future Scene



Strategies for Research

It has been said that research is the “unofficial” first step of the problem solving process. Research gives an understanding of the topic and a “jumping-off point” when presented with a Future Scene. Although students do not use every piece of information they find for each topic, a broad base of knowledge is important. A well-rounded understanding of the past and current status of a topic allows students to better extrapolate those concepts into the future. A solid knowledge base serves students well beyond FPS competitions and often sparks ideas for school projects, creative writing, and beyond. The Categories of Knowledge section that follows can be applied to each step of the research process to expand thinking and approach themes from new or nonobvious directions.

A goal of Future Problem Solving is to understand the topic from which the problem arises, as well as the problem itself. Gathering knowledge is a life-long pursuit and thus a never-ending cycle. There are effective strategies to follow logical paths of inquiry and manage the information gained in a useful manner.



Determine Approach

Determine what you already know about the topic. Generate thoughts about your knowledge as a group. Discuss thematic vocabulary that will help you locate and understand your resources. At the beginning of each topic, consider an online collaboration site to gather and organize main concepts discovered by research.

- If more than one person is working on the topic, divide up the research responsibilities. One person might do interviews, one person might search through magazines, one person might search for videos.
- Organize bookmarks and use them. Every time you find an article, video, or infographic on the topic, save the information to your online account to share with your team.
- Set time limits on your research. Deadlines often create higher productivity and efficiency.
- Online collaboration tools are beneficial to organize and discuss information.
 - www.nowcomment.com
 - www.diigo.com
 - Virtual Classrooms – [Google](#), [Microsoft](#), etc.
 - www.edmodo.com
 - www.slack.com
 - www.livebinders.com

Identify Resources

Researching a subject thoroughly goes well beyond a single article or a chapter in a book. Consider a wide range of sources to gather a wide range of ideas and opinions.

Articles – Read everything you can get your hands on - both online and in print. Magazines, books, pamphlets, newspapers, and blogs are a few suggestions. Specific sources may include:

- News articles – consider local, national, international, and specialty papers
- Futuristic periodicals – The Futurist, Discover, Futurism, etc.
- Library searches – librarians can identify sources you did not even know exist
- Internet searches – use key terms and concepts you know to search a larger spectrum

People – Talk with the people around you. Interview topic stakeholders, people who impact and are impacted by a topic. Other students, parents, teachers, librarians, and professionals in the field possess both research information and a wealth of creative ideas and opinions.

Contacting people is an excellent way to compile a variety of ideas.

- Researchers
- Professionals
- Decision-makers
- General public

Media – Watch and listen to the things around you - videos, movies, TV shows, commercials, radio shows, podcasts, etc., to gather valuable information on a topic. Look for nonfiction as well as fiction.

- Newsmagazine shows – NZ Story, 60 Minutes, 20/20, Frontline, Panorama

Organize Information

After collecting a large volume of information, the organization process helps one to make sense of all the ideas. It also serves as a useful way to help one remember new knowledge. Similar items may be grouped together. Or consider pairing competing ideas. One of the best ways to organize information is to categorize it. As you organize ideas new questions may arise or underrepresented concepts may emerge. Identify new resources to help fill in these gaps.

Compare Ideas

Think about and discuss the reliability of the information gathered. Are you gathering the information with any kind of personal bias about the topic? Are sources of information about the topic biased in any way? In order to know what to trust, it's important to consider the source and slant of the information being gathered. When examining resources, discriminate between those with hard facts and those that offer only biased opinions. While both types of information can be useful, keep in mind that fact and opinion are not necessarily interchangeable.

- Who is presenting the argument? Do they have a personal interest?
- Who has endorsed or requested the information?
- Are all opinions represented?

Consider “What If?”

Understanding the present allows students to move forward in identifying future images. Future images can be structured in many ways – possible, probable, preferable, and unfavorable. With the knowledge gained from your research, consider what the future might look like.

- What do you want the future to look like?
- What do you hope does not happen?
- What happens if a likely advancement occurs? What if it doesn't?
- What would an unexpected future look like?

Categories of Knowledge

Organizing information helps make sense of the knowledge gained, to see how it all fits together. The goal of categorizing is to highlight connections between various pieces of information. Several types of category lists exist. You might pick one of the following ways to generate a list of people to contact for interviews. Another might help you identify common themes among the research you have collected. Categories are useful in understanding the information you gather.

Categories prepared for a specific subject

A Concept Map is beneficial in organizing information. Issues relating to the topic are organized under the topic with like items recorded together. A Concept Map example (Futures Wheel) is located in the Appendix.

The FPS Category List

Almost any issue will fit into at least one of the categories on the FPS Category List provided on the next page. The FPS Category List usually serves as a sufficient starting point for identifying categories for any topic. Keep in mind, however, not every topic has information related to every category on this list.

Categories you generate on your own

You may decide to generate your own category list by generating a sufficient number of categories to classify the information. Are there consistent subsets of a topic that emerge from your research? Do not divide the information into so many parts that the category list becomes a useless form of classification.

Categories that are generic systems of classification

When categories are not emerging easily, turn to some “tried and true” systems of classification. “Animal, Vegetable, Mineral” is an example of a generic system of classification. “Causes, Effects” is another. “Physical, Mental, Spiritual” is a third. You may want to make a list of other generic systems of classification you could use if more specific systems do not cause trends in the information to emerge.

FPS Category List

Arts & Aesthetics



Basic Needs



Business & Commerce



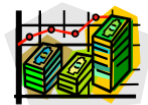
Communication



Defense



Economics



Education



Environment



Ethics & Religion



Government & Politics



Law & Justice



Miscellaneous



Physical Health



Psychological Health



Recreation



Social Relationships



Technology



Transportation



Tools for Generating

Generating tools are used to create new and unique ideas. Although they are often used in creating challenges and solution ideas during the problem solving process, these tools are useful when researching a topic. The most commonly known generating tool is brainstorming and its variations. As you read articles in *Readings, Research, and Resources*, use these tools to help you generate ideas to examine a wide range of ideas.

Generating Guidelines

When generating ideas, it is important to keep four guidelines in mind:

- **No Evaluation** should be given while generating ideas. Both criticism and praise are ruled out. Evaluation of ideas comes at a later time.
- **Quantity** is important. The larger the number of ideas, the greater the chance of reaching the best ideas!
- **Hitchhiking** is encouraged. Combining and improving ideas leads to great possibilities. When generating ideas, the sum is definitely greater than its individual parts.
- **Wild and Crazy** ideas can be very productive. Offbeat and silly ideas may trigger practical breakthroughs.

Ladder of Abstraction

When considering a concern or challenge, this tool is used to broaden or narrow the search for possibilities and new options. Broader or more abstract ideas emerge as you state your concern at the bottom of the ladder and work up the ladder, asking “why;” narrower or more specific options emerge as you work down the ladder, asking “how” you will address your concern.

Morphological Matrix

Using a chart with 4 columns and 6 rows, team members identify four major aspects (for example - people, setting, obstacle, goal) of the topic and place across the top row (one per column). Next ten specific topic related elements of each heading are listed in the columns. Random combinations are then formed to create new and interesting possibilities.

SCAMPER

This tool is used to change the attributes of an idea by: **S**ubstituting, **C**ombining, **A**dapting/**A**dding/**A**ltering, **M**inifying/**M**agnifying, **P**utting to other uses, **E**liminating/**E**laborating, **R**eversing/**R**earranging/**R**educing.

Silent Brainwriting

Each team member has a sheet of paper with 3 columns and 4 rows (12 boxes). Each person generates three ideas related to the topic, writing one idea in each of the boxes in the first row. Next, the sheets are passed around the group so the ideas can be read and new ideas are added, row by row, until all sheets are filled and all ideas have been read.

Tools for Focusing

Focusing tools are used to evaluate, compare, categorize, and highlight ideas. Simply gathering a large volume of information is not helpful, if you are not able to analyze it and focus on central concepts.

Focusing Guidelines

Focusing tools aid in selecting an idea that is workable, relevant, and unique. The following guidelines will help you focus:

- **Use affirmative judgment** to be thorough but positive when analyzing, refining, or choosing possibilities.
- **Follow a plan** and use the tools that assist in focusing.
- **Keep an eye on the goal** to focus on what is wanted and needed in order to accomplish the goal.
- **Stay open to all ideas** that might be workable. Look for new and unusual possibilities.

Identifying Hits

Read through your generated ideas and identify those which are on target for your goal. Develop your “hits” into complete ideas.

Hot Spots

Identify clusters of ideas that share common elements. Discuss how the ideas are similar. How are they different? Which will be most useful for your needs?

Advantages, Limitations (to overcome), Unique Potentials (ALoU)

Consider the advantages of each idea and the limitations you will need to overcome when dealing with the topic. Look for unique potentials one idea may have as compared to another.

Sequencing

Arrange options or possibilities in logical order. One example is time frame for completion (short range, medium range, long range). This is especially useful in developing an Action Plan.

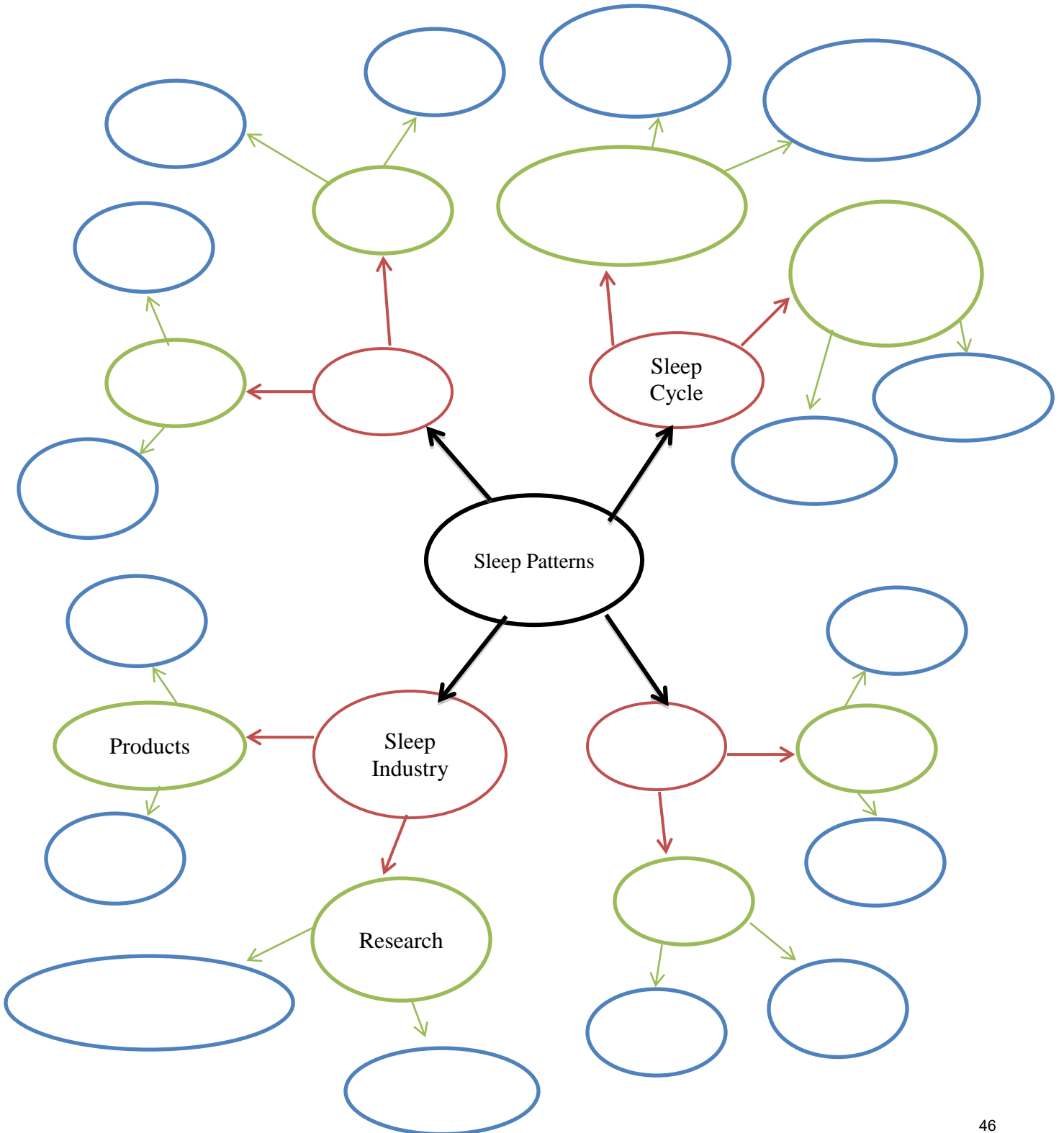
Paired Comparison Analysis (PCA)

When considering multiple possibilities, compare one possibility against another idea, one pair at a time, until all possible pairs have been analyzed. (Comparing A, B and C: A and B would be compared, then A and C, and finally, B and C.) As the favorite option is determined in the pair, a rank of 1, 2, or 3 is assigned according to degree of importance.

The Appendix contains examples of generating and focusing tools applied to the current topics. More resources can be found at www.creativelearning.com.

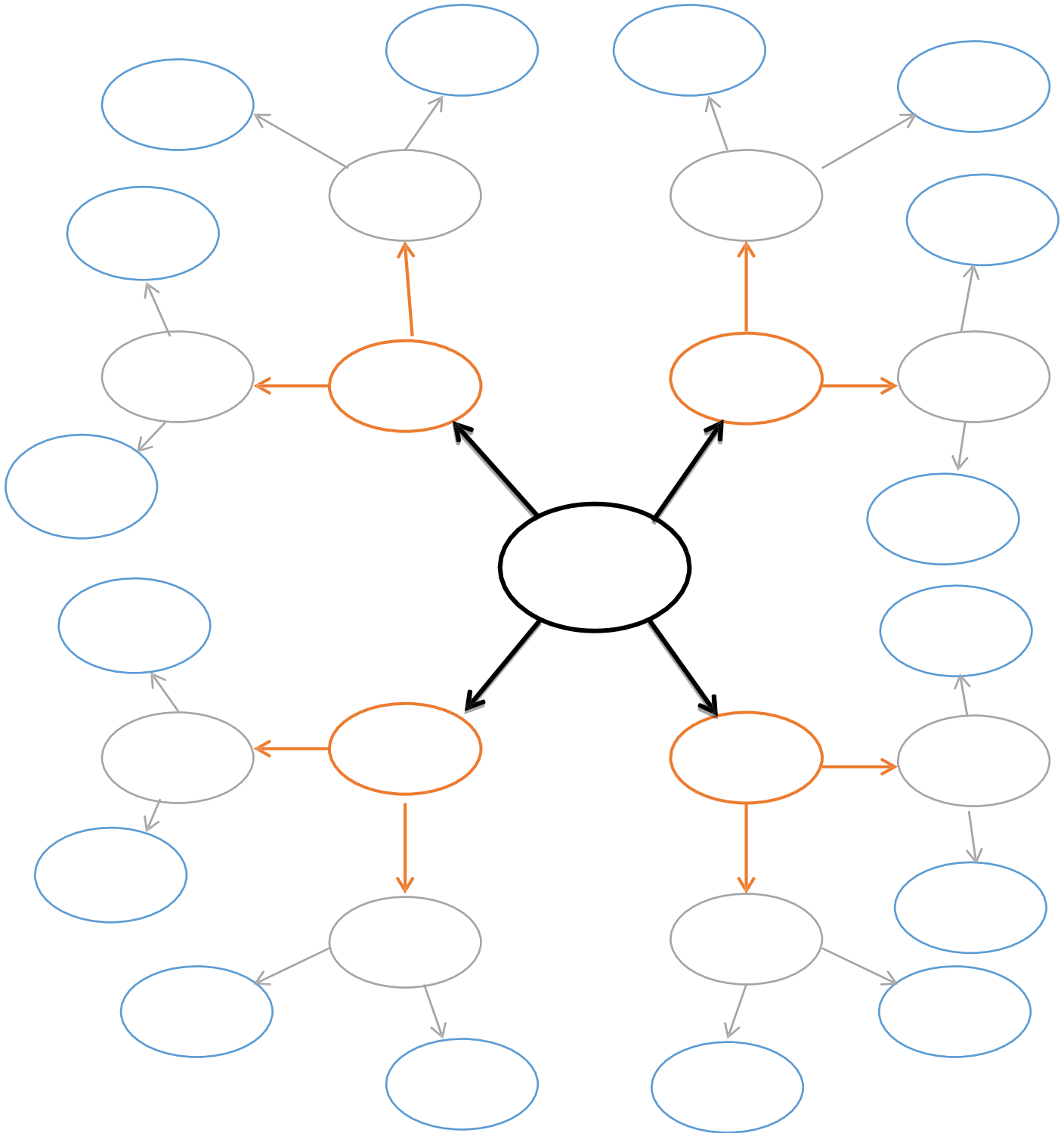
FUTURES WHEEL

A Futures Wheel is a tool that allows you to predict future events. Using the knowledge you have of the current situation, consider positive and negative results of an idea, event or trend. The starting idea is in the center of the page in the black circle. Fill in the red circles with first-order effects that could result from the starting idea. For each first-order effect identify two second-order effects (green circles). Repeat for the second-order effects to identify third-order effects (blue circles). After completing the Futures Wheel discuss which ideas on your wheel could be challenges and others could be solutions.



FUTURES WHEEL

A Futures Wheel is a tool that allows you to predict future events. Using the knowledge you have of the current situation, consider positive and negative results of an idea, event or trend. The starting idea is in the center of the page in the black circle. Fill in the orange circles with first-order effects that could result from the starting idea. For each first-order effect identify two second-order effects (gray circles). Repeat for the second-order effects to identify third-order effects (blue circles). After completing the Futures Wheel discuss which ideas on your wheel could be challenges and others could be solutions.



The Global Workplace

A quiet chime sounded from somewhere in the darkness. "*You have one new notification.*" A voice invaded Jada's dream. The chime and soothing voice sounded again. Jada's eyes flickered open, the sleep crust still clinging to her eyelids. A gently swaying bell icon hovering in the darkness, clouding her field of vision, showed the current date and time: 10 September 2046, 4:37AM. She glanced at the icon just long enough to give the Network the impression she wanted to resume active status. Maybe, deep down, she did.

Jada's Network interface avatar, Mindy39, appeared and waved. Like other Network avatars, Mindy39 had been created by a Network user. Somewhere, Mindy39's creator earns a fraction of a credit each time Jada interacts with the avatar – a steady income since Mindy39 currently had 2.2 million users. Perhaps it is the non-descript accent, yet friendly tone of Mindy39's universal language - regardless, Jada always smiles when she sees her avatar. Mindy39 made a show of unrolling the day's parchment and began to read. The avatar's voice filled Jada's ears, yet wasn't heard by her snoring roommate asleep across the room.

Just then, an unfamiliar voice cut across Mindy39's. "Jada, hello! It's late afternoon here in Shanghai, but your profile indicates that you operate "around the clock." I'm sure you're awake and hard at work. My name is Lin, and I direct Shanghai Sunrise Quantum Tech World. I read your paper describing the theoretical implications of quantum projections of market decisions. Network's analysis tools haven't reached the prediction level to know what decisions should be made before they're made, but your theories might produce creative breakthroughs! We would need you for approximately 100 unit hours initially, but who knows where your creative solutions might lead? As soon as you accept the Collaboration Conditions in the prospectus and your payment amount we can get started!"

Jada smiled at the notion that her Network profile gave the impression that she was available to work at any hour of the day or night. Jada was glad that her profile also included her numerous interests and hobbies, even though she rarely had time to enjoy them. She eyed the résumé box at the upper right of her field of vision: a few more skill endorsements from recognized experts and she'd qualify for a fifth bachelor's degree from the SUNY system.

Mindy39 suddenly raced back into Jada's vision field, dancing excitedly. She held a "kudo" from Jada's workgroup leader on the Latin American Sustainable Mining Initiative. Jada had earned nearly 100 kudos on projects in more than a dozen digital workplaces around the world. While not direct monetary value, kudos signal to other potential workgroups that Jada fulfilled tasks in an above-the-call-of-duty fashion. Jada's exhaustion subsided as she noted that her kudos now ranked globally in the 85th percentile.

Resigned to being awake, Jada opened the project prospectus from Shanghai Sunrise Quantum Tech World. Two others were active with their avatars scanning the page. Jada stared just long enough to raise the profile of the first reader into her vision field: Robare, a systems engineer apprentice from Lithuania, skill endorsements minimal and current status, student at Vilnius University. She stared at the second reader and the profile opened: Durдона, location unknown, skill endorsements for two undergraduate degrees, no university listed. Jada was about to dismiss this profile as well when she noticed the workgroup leader badge just below Durдона's name. "Interesting," Jada thought. Then she bolted upright in bed: Durдона's birth date was 14 years ago. "So, she's a wunderkind," Jada sighed inwardly. A sparkle flashed from Jada's name; her profile had been viewed. While there was no way to know who had viewed her profile, she guessed that either Robare or Durдона had done the same research on her as she had done on them.

Opening her profile, she glanced at the universal Network tweet icon. The standard warning from the Network about her message being visible to literally every human on the planet appeared, but she flippantly dismissed it and entered a request. **@ProblemSolvers:** *This is NOT your grandmothers' world of work!* **@ProblemSolvers:** *In gaining this workplace flexibility, analyze significant work-life challenges that we face.* And then one more - **@ProblemSolvers:** *Apply the #SixStepProcess to our global workplace, completing the process w/ a substantive plan of action.*

Jada rolled over onto her side and closed her eyes, hoping to get more sleep before another long day. Mindy39 faded into the swirling dark.

The Global Workplace

A quiet chime woke Jada from her dream. A soothing voice announced, “*You have one new notification.*” Jada slowly opened her eyes to see the current date and time: 10 September 2046, 4:37AM. By glancing at the floating icon for a few seconds, Jada gave the Network the impression that she wanted to resume active status.

Jada’s Network avatar, Mindy39, appeared and waved; Mindy39 always made Jada smile. Jada was ready to hear Mindy’s notification. Mindy39 made a show of unrolling the day’s parchment and began to read. While Mindy39’s voice could be heard by Jada, it wasn’t heard by her roommate asleep across the room.

Just then, an unfamiliar voice cut across Mindy39’s voice. “Jada, hello! It’s late afternoon here in Shanghai, but your profile suggests that you work around the clock. I’m sure you’re awake and hard at work. My name is Lin, and I direct Shanghai’s Air Pollution Tech Control. I read your paper describing air pollution health risks. With your background, we believe you’ll have some breakthrough solutions for us! Network’s analysis tools haven’t reached the prediction level to know what decisions should be made before they’re made, but your theories might produce creative breakthroughs! We would need you for approximately 100 unit hours to start, but who knows where your creative solutions might lead? As soon as you accept the Collaboration Conditions in our plan and the payment offered for your work, we can get started!”

Jada smiled at the notion that her Network profile gave the impression that she was available to work at any hour of the day or night. Jada was glad that her profile also included her numerous interests and hobbies, even though it was getting harder to find the time for having fun. She glanced at her résumé box on her profile. She only needed a few more skill endorsements from experts and she’d qualify for her fifth bachelor’s degree!

Mindy39 suddenly raced back into Jada’s vision field, dancing excitedly. She held a “kudo” from Jada’s workgroup leader on the Latin American Sustainable Mining Initiative. Jada had earned nearly 100 kudos on more than twelve projects in various digital workplaces. Kudos are not actual financial payments, but they indicate to other possible workgroups that Jada completes tasks well. Jada’s tiredness faded. Her ranking of kudos was now in the 85th percentile globally.

Now fully awake, Jada opened the project plan from Shanghai’s Air Pollution Tech Control. Two other persons had their avatars scanning the same page. Jada stared just long enough to identify the first profile:

Robare, Lithuania
Education: Student, Vilnius University
Skill endorsements: Systems Engineer Apprentice

She stared at the second reader and the profile opened:

Durdona, *location unknown*
Education: *no university listed*
Skill endorsements: two undergraduate degrees

Jada was about to dismiss the profiles when she noticed the workgroup leader badge just below Durdona’s name. “Interesting,” Jada thought. Then she bolted upright in bed: Durdona’s birth date was 14 years ago. “She’s just a child,” Jada sighed inwardly. A sparkle flashed from Jada’s name; her profile had been viewed. There was no way to know who had viewed her profile, but Jada guessed that either Robare or Durdona was doing the same research on her as she had just done on them.

Opening her profile, she glanced at the universal Network tweet icon. The standard warning from the Network about her message being visible to literally every human on the planet appeared, but she flippantly dismissed it and entered a request. **@ProblemSolvers: This is your charge! @ProblemSolvers: In gaining this workplace flexibility, analyze significant work-life challenges that we face. And then one more - @ProblemSolvers: Apply the #SixStepProcess to our global workplace, completing the process w/ a substantive plan of action.**

Utilizing Quizlet



You can use Quizlet with or without creating a Quizlet account. There is also a Quizlet mobile app that you can download from your mobile app store.

When you follow to the links provided in the packet and enter the password you will see a screen with a header (as the picture shows).

Sleep Patterns RRR Terms



The icons shown here allow you to do different things.



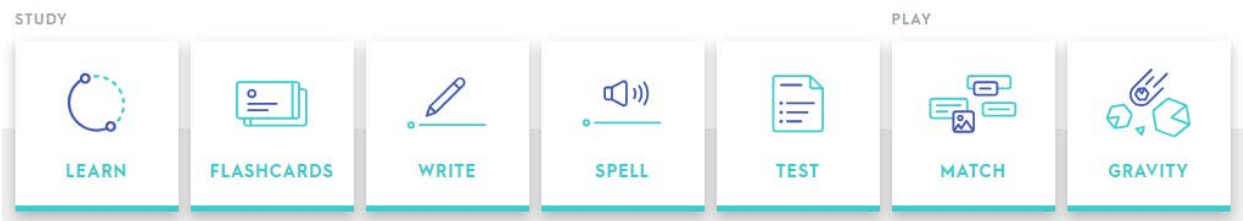
These buttons allow you to copy the set, if you have your own Quizlet account. Share the set, which should only be shared to your students. Or get information about the set.



If you hover over this button you will get options such as; scores, print, combine, export, and embed.

- The “scores” option would allow you to track your scores on games, if you were in your own Quizlet account.
- The “print” option allows you to print the set in many different formats, including printing them as flashcards on your own printer.
- The “combine” option will allow you to combine sets into 1 large group.
- The “export” option will allow you to export the set to a word file.
- The “embed” option will allow you to embed the set on your own website, but should not be used unless that website is password protected and for your students only, as it would violate the copyright if they were made accessible to anyone.

The next row of icons on the screen look like this.



These are divided into two parts; study and play.

In the study section you see icons for learn, flashcards, write, spell, and test.

- The “Learn” option will give students short quizzes using some questions. The more they answer correctly the more points they receive.
- The “Flashcards” option allows students to flip through the cards as flashcards and quiz themselves on the questions and answers.
- The “Write” option will allow your student to type in the answers to the questions presented. (To set this up, click on options on the bottom left and in the pop-up window change “Answer With” to “Definition”)
- The “Spell” option reads the question while displaying the answer, and allows students to type what they hear.
- The “Test” option will test the student on their knowledge. (To set this up, click on options on the bottom left and in the pop up window, only check “Written” in the question type section and set the number of questions you wish to be tested)

In the Play section you have the match and gravity options.

- The “Match” option randomly selects about 5 questions and asks students to match up the question with the proper answer by moving the items on the screen.
- The “Gravity” option lets student race against the clock to answer the questions as they fall like asteroids. Each correct answer gives you points and causes the asteroid to disappear, each incorrect answer deducts points and lets you keep answering until you get it correct, if you fail to answer before the asteroid falls the game will prompt you with the correct answer and no points are awarded.

Question & Answer Workbook

2019-20 Practice Problem #2



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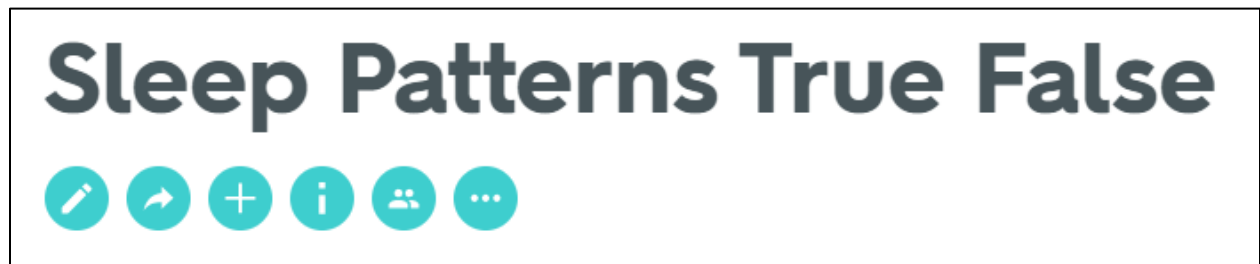
www.fpspi.org

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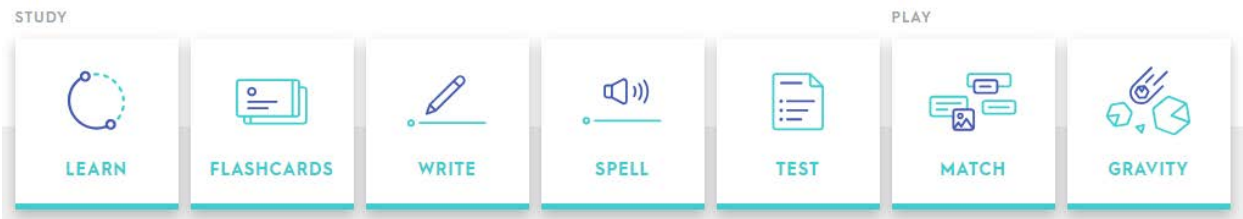
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- The “combine” option will allow you to combine sets into 1 large group.
- The “export” option will allow you to export the set to a word file.
- The “embed” option will allow you to embed the set on your own website, but should not be used unless that website is password protected and for your students only, as it would violate the copyright if they were made accessible to anyone.

The next row of icons on the screen look like this.



These are divided into two parts; study and play.

In the study section you see icons for learn, flashcards, write, spell, and test.

- The “Learn” option will give students short quizzes using some questions. The more they answer correctly the more points they receive.
- The “Flashcards” option allows students to flip through the cards as flashcards and quiz themselves on the questions and answers.
- The “Write” option will allow your student to type in the answers to the questions presented. (To set this up, click on options on the bottom left and in the pop-up window change “Answer With” to “Definition”)
- The “Spell” option reads the question while displaying the answer, and allows students to type what they hear.
- The “Test” option will test the student on their knowledge. (To set this up, click on options on the bottom left and in the pop up window, only check “Written” in the question type section and set the number of questions you wish to be tested)

In the Play section you have the match and gravity options.

- The “Match” option randomly selects about 5 questions and asks students to match up the question with the proper answer by moving the items on the screen.
- The “Gravity” option lets student race against the clock to answer the questions as they fall like asteroids. Each correct answer gives you points and causes the asteroid to disappear, each incorrect answer deducts points and lets you keep answering until you get it correct, if you fail to answer before the asteroid falls the game will prompt you with the correct answer and no points are awarded.

Online/Mobile App Interactive Study Feature

Sleep Patterns

This workbook and the accompanying interactive features allow you to use the Question and Answer publication in a variety of ways with your students. Pages can be used as worksheet, flashcards can be printed from the Quizlet system, and students can play games with the content provided.

QUIZLET ONLINE

1. Go to the link below.

True/False

https://quizlet.com/_5xmwua

Multiple Choice

https://quizlet.com/_5xmxqb

Fill-in the Blank

https://quizlet.com/_5xmyqj

2. Use this password:
1920PP2hfr

MOBILE APP

1. Download the “Zappar” App from the app store.
2. Scan the code below.



3. Click on the type of question you want to study.
4. Use this password:
1920PP2hfr

True/False Section



2019-20 PP2
Sleep Patterns

Sleep Patterns

True/False Questions

1. Allowing employees to take daytime naps has been shown to decrease impulsiveness in their judgment.
2. Excessive sleep may increase C-reactive proteins.
3. Getting too-little sleep tends to increase C-reactive proteins
4. There is inconsistency in sleep studies as to whether napping increases or decreases immune function.
5. A cardboard bed has been invented to bear the weight of two dozen people.
6. In the future, sleep centers will likely be used for all sleep studies rather than just those involving high-risk patients.
7. Those considered to have "bear" sleep-patterns by Michael Breus tend to shut down devices an hour before their go to sleep.
8. Those with Type-A personalities tend to have peak working hours between 7:00 AM and noon.
9. It is estimated that only 10% of the world's population are considered insomniacs.
10. Dreaming occurs in the first stage of sleep.
11. An individual would be likely to die faster of starvation than sleep deprivation.
12. It is possible to enhance sleep using auditory stimulation of the brain.
13. The "sleep hygiene" movement is most concerned with the impacts of sound on sleep.
14. Those experiencing "continual mental twilight" tend to feel awake in the morning.
15. Obsessing over getting a good night's rest can actually reduce one's ability to rest.
16. The most popular sleep position is the foetus position.
17. It is claimed that "floating beds" will likely be a common fixture of households in the future.

18. Those with sleep apnea are five times more likely to die from cancer.
19. Sleep experts still don't know why we sleep, really.
20. When a person's breathing and heart rate are synchronized, he or she is less likely to fall asleep quickly.
21. The average human sleeps for roughly one-quarter of his or her life.
22. Lack of sleep tends to lower blood pressure.
23. Elephants get more sleep than any mammal on the planet
24. Sleep scientists have ruled out a connection between sleep deficit and hypertension.
25. One reason experts argue humans sleep is to preserve memory.
26. Circadian rhythms are not impacted by light.
27. The most sleep studies involve sleep deprivation.
28. Not getting enough sleep can drastically weaken the immune system.
29. Individuals with intense cases of sleep apnea are four times more likely to be depressed.
30. Sleep deficits interrupt the biological processes of animals.
31. Sleep has the potential to remove debris from the brain.
32. Working in dimly lit offices by day can impact a person's ability to sleep at night.
33. If one does not sleep across the length of a week, he or she is likely to develop mental illness.
34. Mild cognitive impairment can emerge a full decade earlier for individuals with severe sleep apnea compared to those without such a condition.
35. Lifespan can be impacted by sleep deprivation.
36. Increased paranoia does not tend to happen in individuals until they have missed nine nights of sleep.
37. Micro sleeps refer to periods of sleep that are as short as 30 seconds.

38. According to sleep experts, the best advice for getting a good night's rest is to simply go to bed and wake up at the same time daily.
39. Athletes relying upon good hand-eye coordination are not likely to have their performance impacted by just one missed night of sleep.
40. Agitation increases toward others when an individual has missed out on three nights of sleep.
41. Those suffering from sleep apnea may develop symptoms of Alzheimer's as many as 5 years before others.
42. In the United Kingdom, it is estimated that half of the population does not get enough sleep at night.
43. Eight missed nights of sleep can lead to a person's death.
44. On average, hallucinations begin for sleep-deprived individuals after seven missed nights of sleep.
45. Sleep deprivation has the power to make a person lose the ability to separate reality from imagination.
46. The average night's rest for contemporary hunter-gathers is eight hours.
47. Forgetfulness tends to begin for individuals after missing two nights of sleep.
48. There are no treatments for sleep apnea.
49. In recent research, individuals who were members of hunter-gatherer tribes conveyed noticeable concern for insomnia.
50. Sugar can be disruptive to sleep.
51. According to sleep scientists, sleep is valued in our society just as equally as exercise and diet.
52. The effects of sleep apnea can increase a person's likelihood of having a stroke by four times.
53. Orthosomniacs tend to obsess over their sleep-tracking apps.
54. Sleep deprivation only impacts the person who is not sleeping enough.

55. Those unable to fall asleep quickly at night are known as "night owls."
56. Sleep deprivation has not been shown to increase one's risk of a heart attack.
57. Delta waves appear in the third stage of sleep.
58. It is often difficult to wake someone from the fourth stage of sleep.
59. Already, a fabric headband exists that can enhance a person's sleep.
60. It is normal for an individual to fall immediately into a deep sleep.
61. Those who sleep less tend to have a lower likelihood of stroke.
62. In the first stage of sleep, individuals are not easily wakened.
63. In the second stage of sleep, one's brain waves tend to slow down.
64. It is a healthy practice to "make up" for lack of sleep on the weekends by sleeping in.
65. It is normal for individuals to have rapid, irregular breathing when experiencing REM sleep.
66. Those living in western societies get less secure sleep than members of hunter-gatherer tribes.
67. A mutation of the gene called Cryl is linked to all sleep issues presently studied.
68. An employee switching between night shifts and day shifts would not experience any noticeable sleep issues since they would at least still get to sleep at some point during a 24-hour period.
69. Sleep deprivation has been known to increase one's risk of getting Alzheimer's disease.
70. In the second stage of sleep, eye movement tends to speed up.
71. Sleep scientists utilize polysomnograms to detect sleep disorders.
72. In animals, sleep is used to reduce energy when they do not need to expend it.
73. The study of sleep is known as somnology.
74. In the United Kingdom, the amount of sleep lost, on average, amounts to two full nights per week.

75. Lack of sleep has not been shown to increase symptoms of depression.
76. Chronic stress tends to be experienced over short periods of time.
77. Humans today get fewer hours of sleep compared to their hunter-gatherer ancestors.
78. The body rebuilds tissue during the anabolic state.
79. Lack of sleep does not impact metabolism.
80. Sleeping multiple times within a 24-hour period would be considered anabolic sleep.
81. Microclimates refer to small areas differing in climate from larger surrounding areas.
82. Early birds tend to feel fatigue most in the morning.
83. Sleep deprivation usually leads to weight loss.
84. To rise at least an hour sooner to participate in a social obligation can bring about a form of legitimate jet lag.
85. A person's state of feeling healthy and happy is referred to as one's well-being.
86. White noise can be used to drown out undesirable sounds that hinder sleep.
87. With an individual has delayed sleep phase disorder (DSPD), he or she tends to produce melatonin far later in the night than what is normal.
88. School-age children require more sleep than teenagers.
89. There are a total of three distinct sleep phases.
90. Circadian rhythms are based on a 24-hour internal clock.

Multiple Choice Section



**2019-20 PP2
Sleep Patterns**

Sleep Patterns

Multiple Choice Questions

1. Researchers have determined elephants lie down and obtain REM sleep _____.
 - A. every few hours
 - B. twice daily
 - C. once daily
 - D. every few days

2. Already, a cardboard bed exists that can bear the weight of
 - A. 4 people
 - B. 8 people
 - C. more than a dozen people
 - D. two dozen people

3. Daytime naps have been shown to increase _____ in employees.
 - A. reaction time
 - B. reasoning
 - C. symbol recognition
 - D. all of the above

4. According to The Guardian, the average length of time humans should seek to sleep at night is _____.
 - A. 6.5 hours
 - B. 7 hours
 - C. 8 or more hours
 - D. 10 hours

5. Across a 20-day study, the 33 members of a Tanzanian hunter-gatherer tribe had all members also sleep for a total of _____.
 - A. 0 minutes
 - B. 18 minutes
 - C. 8.5 hours
 - D. 32 hours

6. Consequences of sleep deprivation include _____.
 - A. Alzheimer's disease
 - B. cancer
 - C. diabetes
 - D. all of the above

7. A _____-minute nap provides the same benefits for learning as a night filled with eight hours of rest.

- A. 15
- B. 45
- C. 90
- D. 120

8. Michael Breus, author of *The Power of When*, refers to Type-A personalities as _____.

- A. bears
- B. dolphins
- C. lions
- D. wolves

9. Roughly _____% of the world's population tend to hit the snooze button multiple times in the process of waking up.

- A. 5%
- B. 10-15%
- C. 25%
- D. 35-45%

10. Humans would starve to death after _____ days without food, whereas they could die after _____ days of no sleep.

- A. 7; 14
- B. 14; 10
- C. 10; 5
- D. 14; 5

11. The most ideal sleep position for ridding the body of waste is _____.

- A. on one's back
- B. on one's belly
- C. on one's side
- D. seated upright

12. The United States loses roughly _____ per year to lost work productivity.

- A. \$50 million
- B. \$700 million
- C. \$173 billion
- D. \$400 billion

13. When the body is repairing and building tissues during a period of rest, it is experiencing a/an _____ state.
- A. aerobic
 - B. anabolic
 - C. anaerobic
 - D. catabolic
14. _____ light is known to be emitted from devices and disrupt sleep.
- A. Blue
 - B. Florescent
 - C. Infrared
 - D. Yellow
15. The hormone released to alert the body that it is time to sleep is called _____.
- A. epinephrine
 - B. insulin
 - C. melatonin
 - D. thyroxine
16. Hunter-gatherers studied in recent years average about _____ hours of sleep per night.
- A. 4
 - B. 6.5
 - C. 7
 - D. 8
17. The central nervous system is purged of waste thanks to the _____ system.
- A. culatory
 - B. digestive
 - C. glymphatic
 - D. immune
18. When an individual sleeps multiple times across a 24-hour time span, it is known as _____ sleep.
- A. monophasic
 - B. Non-REM
 - C. polyphasic
 - D. REM
19. In total, humans experience _____ phase(s) of sleep.
- A. one
 - B. two
 - C. three
 - D. four

20. Michael Breus, author of *The Power of When*, would refer to those requiring multiple cups of coffee in the morning as _____.
- A. bears
 - B. dolphins
 - C. lions
 - D. wolves
21. REM sleep involves _____.
- A. dreaming
 - B. faster breathing
 - C. increase heart rate
 - D. all of the above
22. When an individual experiences intermittent pauses in their breathing ranging from a few seconds to over a minute, they are likely to be diagnosed with _____.
- A. jet lag
 - B. restlessness
 - C. sleep apnea
 - D. wakefulness
23. Teenagers, on average, require _____ hours of sleep.
- A. 12 to 14
 - B. 11 to 13
 - C. 10 to 11
 - D. 8.5 to 9.5
24. Hallucinations tend to begin following _____ day(s) of no sleep.
- A. one
 - B. two
 - C. three
 - D. four
25. The study of sleep is known as _____.
- A. sleepology
 - B. slumbology
 - C. somnology
 - D. wakeology
26. When a person's heart rate and breathing are synchronized, they fall asleep _____.
- A. 30% faster
 - B. 50% faster
 - C. 30% slower
 - D. 50% slower

27. In the world of somnology, USWS stands for _____.
- A. Unified Sleep Watch Study
 - B. unihemispheric slow-wake sleep
 - C. unilateral slow-wake sleep
 - D. universal sleep-wake stages
28. Hand-eye coordination reduces after _____ day(s) of no sleep.
- A. one
 - B. two
 - C. three
 - D. four
29. Those experiencing a deficit in sleep tend to begin the day with an immediate _____ response.
- A. headache
 - B. melatonin
 - C. stress
 - D. temperature variance
30. It is recommended that school-age children (ages 5-10 years) obtain _____ hours of sleep per night.
- A. 7 to 9
 - B. 8.5 to 9.5
 - C. 10 to 11
 - D. 11 to 13
31. The internal clock of a person is maintained by the _____.
- A. cerebrum
 - B. hypothalamus
 - C. pre-frontal cortex
 - D. thyroid
32. The circadian rhythm is based on a _____-hour internal clock
- A. 12
 - B. 14
 - C. 20
 - D. 24
33. A condition in which individuals obsess over tracking systems specifically following sleep is known as _____.
- A. orthosomnia
 - B. somniolism
 - C. techsomnia
 - D. slumbation

34. Select the list that correctly orders sleep needs from greatest to least.
- A. infants, toddlers, teens, adults
 - B. toddlers, teens, adults, infants
 - C. teens, adults, infants, toddlers
 - D. adults, infants, teens, toddlers
35. Among the symptoms of sleep deprivation, a person may begin to have reduced oxygen intake after _____ day(s) of no sleep.
- A. one
 - B. two
 - C. three
 - D. four
36. Extreme tiredness is formally called _____.
- A. deprivation
 - B. fatigue
 - C. polyphasia
 - D. polysomnia
37. Parents of young children are more likely than those without children to experience sleep _____.
- A. apnea
 - B. binging
 - C. fragmentation
 - D. health
38. Blood pressure in the body tends to increase after missing _____ night(s) of sleep
- A. one
 - B. two
 - C. three
 - D. four
39. Body temperatures tend to _____ while asleep.
- A. lower
 - B. remain the same
 - C. rise
 - D. significantly lower
40. Ways to improve sleep hygiene include _____.
- A. catching up on the weekends
 - B. consuming cherries
 - C. taking a warm bath
 - D. B and C

41. According to the U.S. Centers for Disease Control and Prevention, roughly _____% of adults do not get adequate rest.
- A. 25%
 - B. 33%
 - C. 50%
 - D. 75%
42. To sleep well, individuals should avoid all of the following except _____.
- A. brown rice
 - B. excessive noise
 - C. screens
 - D. sugar
43. After missing two nights of sleep, a person might be expected to start experiencing _____.
- A. increased blood pressure
 - B. hallucination
 - C. heart disease
 - D. microsleeps
44. Paranoia and heightened fear tend to emerge as unhealthy symptoms after missing _____ night(s) of sleep.
- A. one
 - B. two
 - C. four
 - D. five
45. Individuals become more emotional after missing _____ night(s) of sleep
- A. one
 - B. two
 - C. three
 - D. four
46. In the United States, roughly _____ days of work are lost annually due to sleep deprivation.
- A. 400,000
 - B. 750,000
 - C. 1,200,000
 - D. 1,600,000
47. Children of preschool age (3-5 years) tend to require _____ hours of sleep per night.
- A. 14 to 15
 - B. 11 to 13
 - C. 10 to 11
 - D. 8.5 to 9.5

48. Ambien is a form of _____.
- A. light-blocking filters
 - B. noise-blocing technology
 - C. sleep medication
 - D. sleep tracking
49. On average, the brown bat sleeps _____ daily.
- A. 4 hours
 - B. 7 hours
 - C. 15 hours
 - D. 20 hours
50. After missing four nights of sleep, it would be expected that a person experiences _____.
- A. the brain falling asleep before the body
 - B. death
 - C. serious mental illness
 - D. paranoia
51. The majority of sleep studies concur that humans require between _____ and _____ hours of sleep daily.
- A. 4 and 8
 - B. 6 and 8
 - C. 6 and 10
 - D. 7 and 11
52. Minimum, newborns (birth to 2 months in age) should have at least _____ hours of sleep.
- A. 8
 - B. 10
 - C. 12
 - D. 14
53. Compared to school-age children, adults require _____ sleep.
- A. equal amounts of
 - B. less
 - C. more
 - D. significantly more
54. Toddlers, on average, require _____ hours of sleep.
- A. 14 to 15
 - B. 12 to 18
 - C. 12 to 14
 - D. 11 to 13

55. Among the symptoms of severe sleep deprivation, a person can often no longer distinguish between imagination and reality after _____ nights of missed sleep.
- A. three
 - B. six
 - C. eight
 - D. ten
56. Sleep deprivation increases the likelihood that others may experience _____.
- A. a car crash
 - B. medical errors
 - C. industrial accidents
 - D. all of the above
57. Humans commonly experience _____ phase(s), in which no dreams take place, before entering the active stage of sleep when dreams do occur.
- A. zero
 - B. one
 - C. two
 - D. three
58. Those with sleep apnea are _____ times more likely to die of cardiovascular disease.
- A. two
 - B. four
 - C. five
 - D. seven
59. On average, those living in the United Kingdom lose _____ per week.
- A. one-half of night's rest
 - B. one full night's rest
 - C. two full night's rest
 - D. no noticeable amount of rest
60. Those suffering from severe sleep apnea are _____ times more likely to die of cancer.
- A. 2
 - B. 4
 - C. 5
 - D. 7

Fill-in Section



Fill in the

Blank

**2019-20 PP2
Sleep Patterns**

Sleep Patterns

Fill-in the Blank Questions

1. Daytime naps have been found to boost the productivity and _____ of employees.
2. Sleep studies will become increasingly more _____-based in the future.
3. Michael Breus has determined that roughly half of the world's population have peak working hours between _____ and 6:00 PM.
4. _____% of the world's population tend to awake without an alarm before sunrise.
5. Individuals who sleep less tend to have shorter _____.
6. Those considered "wolves" by Michael Breus do not reach peak productivity until at least _____.
7. Having a lack of REM sleep can lead to _____.
8. According to sleep scientist Matthew Walker of the University of California at Berkeley, humans are in the midst of a "catastrophic sleep-loss _____."
9. Light-up pillows are currently in development to _____ individuals more gently.
10. Those experiencing "continual mental twilight" are too _____ to fall to sleep.
11. According to Michael Breus, those with "bear" sleep patterns are, on average, asleep by _____.
12. It was been thought that sleep-deprived employees should be given daytime _____ in order to make them more tolerant of difficult work scenarios.
13. Those with " _____ " tend to obsess over their ability to get a good night's rest.
14. Between 50 and _____% of the world's population are estimated as keeping a regular sleeping schedule
15. The body utilizes time of sleep to rid the _____ of waste.
16. Roughly _____% of the world's population ironically can't sleep because they're stressed about sleep.
17. In the future, mattresses will be _____ thanks to applications of vacuum technology.
18. An individual who doesn't get regular sleep is much more likely to have _____ illness.
19. Restlessness is considered a lingering mechanism of ancient _____.
20. Adolescents have been referred to by sleep experts as "walking _____" due to their tendency to get so little sleep
21. _____ in 10 adults struggle with chronic insomnia.

22. Those with _____ sleep phase disorder tend to get most of their sleep through multiple, short naps.
23. Regular sleep has been achieved by over _____% of individuals utilizing sleep technology.
24. A major reason blue light is considered overstimulating at night is because it suppresses the release of _____ in the body.
25. REM sleep stands for _____.
26. Between _____ and 30% of adults struggle with insomnia in some form.
27. Elephants, on average, obtain _____ hours of sleep daily.
28. _____ nerve cells in the hypothalamus make up a person's internal clock.
29. A person's _____ rhythm is responsible for regulating when a person feels sleepy or alert.
30. Individuals who work long days in offices with poor, fluorescent lighting tend to experience "continual _____ twilight."

Answers



2019-20 PP2
Sleep Patterns

Sleep Patterns

True/False Answers

- | | | | |
|-----------|-----------|-----------|-----------|
| 1. True | 24. False | 47. True | 70. False |
| 2. True | 25. True | 48. False | 71. True |
| 3. True | 26. False | 49. False | 72. True |
| 4. True | 27. True | 50. True | 73. True |
| 5. False | 28. True | 51. False | 74. False |
| 6. False | 29. False | 52. True | 75. False |
| 7. True | 30. True | 53. True | 76. False |
| 8. False | 31. True | 54. False | 77. False |
| 9. True | 32. True | 55. True | 78. True |
| 10. False | 33. True | 56. False | 79. False |
| 11. False | 34. True | 57. True | 80. False |
| 12. True | 35. True | 58. True | 81. False |
| 13. False | 36. False | 59. True | 82. False |
| 14. False | 37. True | 60. False | 83. False |
| 15. True | 38. True | 61. False | 84. True |
| 16. True | 39. False | 62. False | 85. True |
| 17. True | 40. True | 63. True | 86. True |
| 18. True | 41. True | 64. False | 87. True |
| 19. True | 42. False | 65. True | 88. True |
| 20. False | 43. True | 66. False | 89. False |
| 21. False | 44. False | 67. False | 90. False |
| 22. False | 45. True | 68. True | |
| 23. False | 46. False | 69. True | |

Sleep Patterns

Multiple Choice Answers

1. D. every few days
2. C. more than a dozen people
3. D. all of the above
4. C. 8 or more hours
5. B. 18 minutes
6. D. all of the above
7. C. 90
8. C. lions
9. B. 10-15%
10. B. 14; 10
11. C. on one's side
12. D. \$400 billion
13. B. anabolic
14. A. Blue
15. C. melatonin
16. B. 6.5
17. C. glymphatic
18. C. polyphasic
19. D. four
20. D. wolves
21. D. all of the above
22. C. sleep apnea
23. D. 8.5 to 9.5
24. D. four
25. C. somnology
26. A. 30% faster
27. B. unihemispheric slow-wake sleep
28. A. one
29. C. stress
30. C. 10 to 11
31. B. hypothalamus
32. D. 24
33. a. orthosomnia
34. a. infants, toddlers, teens, adults
35. B. two
36. B. fatigue
37. C. fragmentation
38. C. three
39. C. rise
40. D. B and C
41. B. 33%
42. A. brown rice
43. D. microsleeps
44. D. five
45. A. one
46. C. 1,200,000
47. B. 11 to 13
48. C. sleep medication
49. D. 20 hours
50. A. the brain falling asleep before the body
51. B. 6 and 8
52. C. 12
53. B. less
54. C. 12 to 14
55. B. six
56. D. all of the above
57. D. three
58. C. five
59. B. one full night's rest
60. C. 5

Sleep Patterns

Fill-in the Blank Answers

1. creativity
2. home
3. 11:00 AM
4. 15%
5. lives
6. noon
7. depression
8. epidemic
9. wake
10. alert
11. 11:00 PM
12. naps
13. orthosomnia
14. 55
15. brain
16. 10
17. self-cleaning
18. chronic
19. survival
20. zombies
21. 1
22. delayed
23. 50
24. melatonin
25. Rapid Eye Movement
26. 10
27. 4 to 6
28. 20,000
29. circadian
30. mental





START



2019-20

Qualifying Problem

**Readings,
Research, &
Resources**



GAMIFICATION

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Future Problem Solving Program International (FPSPI)

We hope you find this edition of *Readings, Research, and Resources* to be a valuable resource as your students gather knowledge about *Gamification*.

This publication should be used as a starting point for research. By the time it is printed and distributed, some of the information may change or become out-of-date. Keep in mind, however, that observing and studying the changes that take place in a given subject area over a few months or years can be an incredible asset to problem solvers who work with scenarios set in the future.

A concerted effort was made to find recent articles from as many different perspectives as possible. While FPSPI attempts to present a balance in the range of opinions, some sides of an issue are often more represented than others. This does not mean that FPSPI supports that position. FPSPI supports no position. Information contained in this publication is a summary of the original article. It is up to the reader to determine which “facts” to accept.

FPSPI encourages coaches to preview the article summaries and links to determine whether all information is appropriate for their students. Efforts were made to minimize the sensitivity of the summaries’ contents; however, different standards of acceptability apply to each individual student, coach, and community. Please use your discretion with these materials.

At the end of this publication you will find an appendix containing a topic-related Future Scene from a previous related topic, useful tools, and instructions on using the Quizlet terms.

About Topic Selection:

FPS topics are determined with the input of students, coaches, researchers, futurists and many others. FPSPI participants are encouraged to submit topics for consideration. Annually, the FPS community votes for their top five topics from three general themes: Science/Technology, Social/Political, and Business/Economics. The results of the voting determine which topics FPSPI uses each year. Information on topic submission and voting can be found at www.fpspi.org/topic-submission.

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About Themes & Concepts and Internet Resources:

Themes and Concepts serve as content organizers for each topic of study. Common themes are obvious in most subject matters or topics. Concepts represent mental images, constructs, or word pictures that help people to arrange and classify fragmented and isolated facts and information. Themes and concepts assist in organizing a lot of information into manageable threads or ideas, providing a complete picture or understanding of the subject.

Coaches may wish for younger students to utilize the provided Themes & Concepts for each topic as a reference and starting point in their research. Coaches of older and/or more advanced problem solvers may encourage students to take the research and develop their own Themes & Concepts for each topic.

Highly engaging curricular lessons to expand research, teach the problem solving process and explore the current topics are available. The [Topic Activity Units](#) are excellent resources for teachers and coaches alike, for both use in the classroom and after school. They incorporate best practices and provide step by step lesson plans for research based independent and collaborative work.

Readings, Research, and Resources includes specific web site addresses; however, site changes occur continuously. Some of the articles cited in this publication may be found by going directly to the source of the article; however, some articles can only be accessed by using an on-line database such as EBSCO or Cengage. Digital resources are checked at the time of publishing to ensure that the links are active, however, by the time you have purchased the publication these links may have changed.

Caution: We strongly advise coaches to review their educational organization's policies on appropriate content, and to screen any materials before making them available to students.

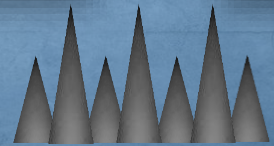
About Zappar:

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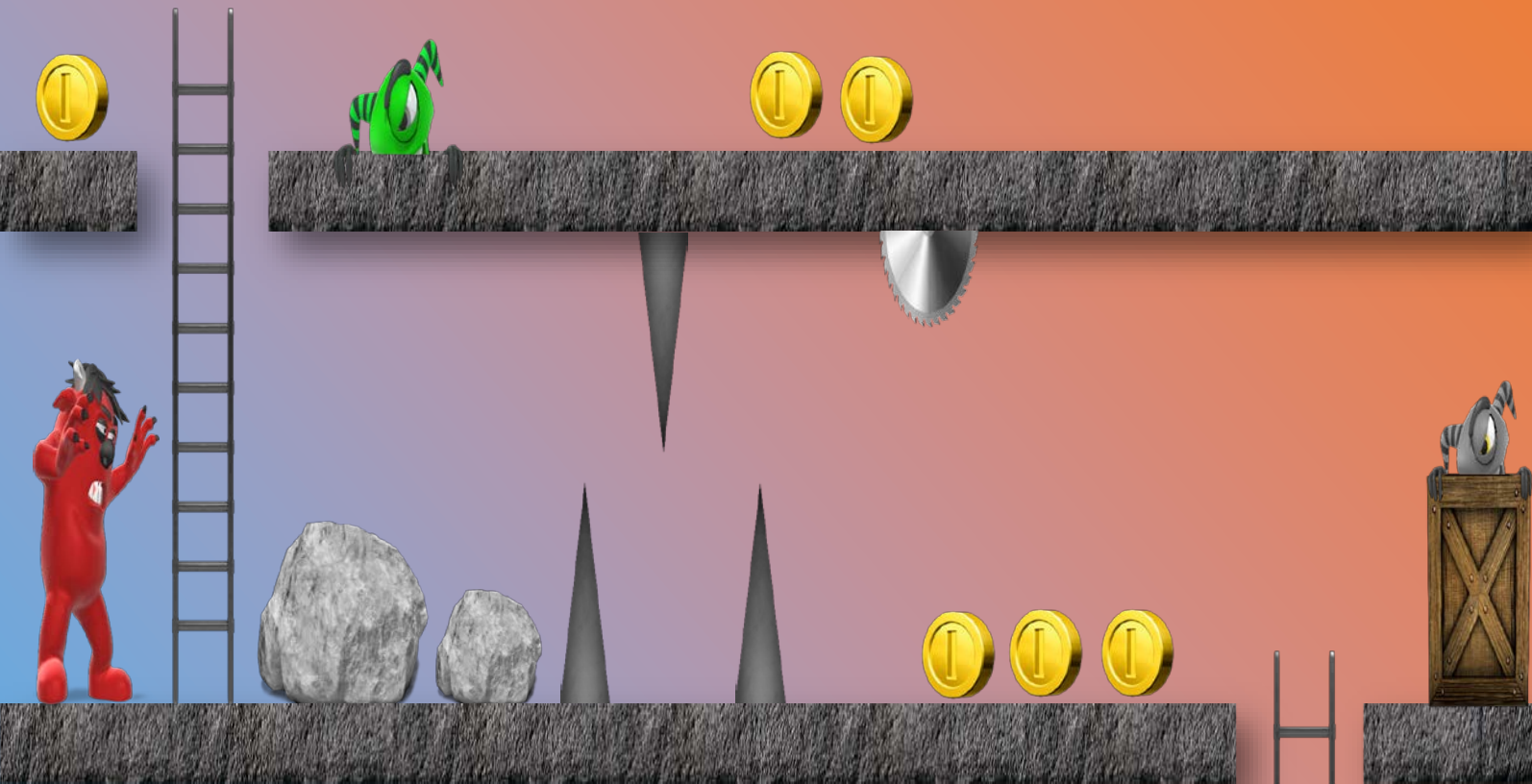
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TERMS & DEFINITIONS



These terms and definitions are also available online with interactive games using Quizlet at: https://quizlet.com/_6b1k30

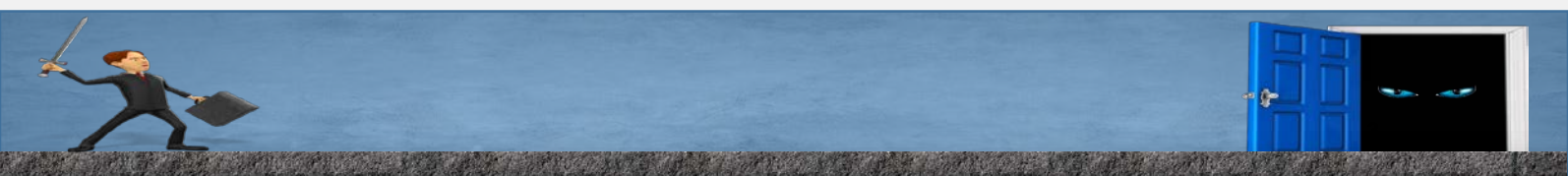
Using the password:
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Or by scanning the Zap Code below.



The Quizlet password is part of the copyright of this publication. Only share this password with the students of a single coach.

- **achievement:** the point of successful completion
- **addictive:** habit-forming or tending to cause dependency
- **augmented reality (AR):** an interactive experience that superimposes computer-generated imagery over a user's personal view of the real world
- **badge:** a symbol of achievement
- **binging:** indulging in a specific activity in large amounts
- **competition:** rivalry to achieve supremacy
- **consumer:** a person who buys goods or services for personal or household use
- **edugame:** games designed for education
- **e-learning:** learning achieved through the use of the Internet and other electronic media
- **engagement:** the feeling of being highly involved in a specific activity
- **experiential marketing:** marketing interactions that are beneficial to both the customer and the brand
- **extrinsic motivation:** behavior that is driven by external rewards
- **game-based learning:** a type of gameplay with defined learning outcomes used to achieve desired goals
- **game design:** the process of applying aesthetic and design elements to create a game
- **game mechanics:** the formal elements of a game, which include (but are not limited to) badges, challenges, collaboration, countdowns, discovery, emotion, epic meaning, leaderboards, levels, narrative, points, progression, relationships, and rewards
- **gamer:** an individual who plays video games or similar offerings on a regular basis
- **game theory:** the mathematically-based study of strategic interactions between competitive game-playing individuals
- **gamify:** integrating game mechanics into non-game experiences
- **gimmick:** a device used to attract attention, interest, publicity, or sales
- **immersive:** engaging deeply in something
- **incentivize:** providing an incentive for doing something that is desired
- **intrinsic motivation:** behavior that is driven by internal, personal satisfaction
- **leaderboard:** a scoreboard providing the names and current rankings of top competitors



- **level progression:** a series of actions that must be completed in a game before the user can move forward in the game
- **loss aversion:** the desire to avoid losing or failing at something
- **loyalty:** the continued support of something
- **marketing:** the process of promoting and selling products or services
- **microlearning:** learning content that is delivered in a series of small amounts
- **mobile-friendly:** compatible for use on mobile devices, especially the smaller screens of smartphones
- **motivation:** the desire to do something
- **onboarding:** the process of orienting and training a new employee
- **point-based system:** a system that evaluates accomplishments by adding up points assigned to them
- **positive reinforcement:** providing a reward to recognize the completion of a desired behavior
- **productivity:** effectiveness with regard to the rate of output or accomplishment
- **retention:** with regard to learning, the ability to keep something in one's memory
- **reward:** a gift bestowed in recognition of positive efforts or a noteworthy achievement
- **scarcity:** the state of being in short supply
- **serious game:** a game designed intentionally for a purpose other than pure entertainment
- **social sharing:** sharing information or other content with friends or groups using interactive applications or social media
- **user experience:** the overall experience of an individual who uses a gamified app, product, or service, particularly with regard to how easy and enjoyable it is to use
- **virtual reality (VR):** a computer-generated simulation of an environment that seems realistic to a person who is interacting with it



TOPIC OVERVIEW

TYPES OF GAMIFICATION USERS

WHAT THEY NEED:

- SURPRISE, INSPIRATION, FUN

GAME MECHANICS:

- LUCK AND QUICK SUCCESS GAMES, PRIZES, BOOSTERS

GAMIFICATION EXAMPLE:

- FORTUNE WHEEL



ENJOYER

WHAT THEY NEED:

- ACHIEVEMENTS AND COLLECTION

GAME MECHANICS:

- BADGES, LEVELS, SIMPLE TASKS, PROGRESS BARS

GAMIFICATION EXAMPLE:

- REVIEWS BADGES



FARMER

WHAT THEY NEED:

- STATUS, INFLUENCE, ACCEPTANCE

GAME MECHANICS:

- LEADERBOARDS, DUELS, EXTRA OPTIONS

GAMIFICATION EXAMPLE:

- USERS RATING



SELF-SEEKER

WHAT THEY NEED:

- CONTACTS, COMMUNICATION, PRIVILEGES

GAME MECHANICS:

- CHATS, MENTORING, COMMUNITIES

GAMIFICATION EXAMPLE:

- ADVICE SECTION



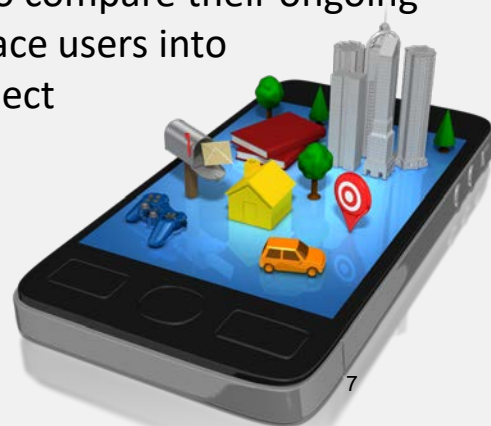
NETWORKER

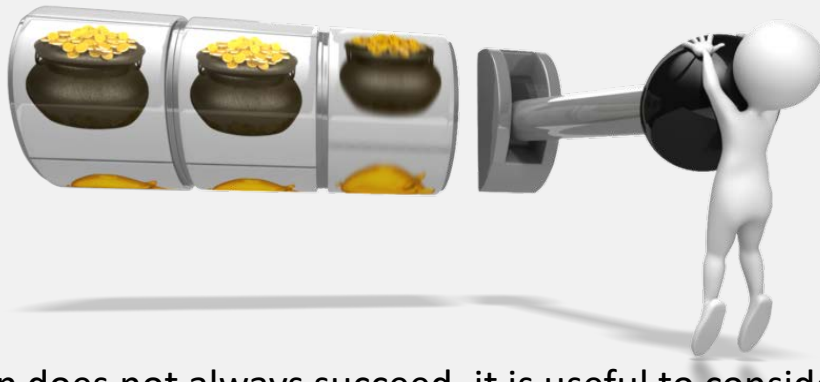
Gamification is the application of game-playing elements and game-design principles to concepts other than games. To “gamify” something means to integrate game mechanics into non-game experiences in order to motivate participation, engagement, retention, loyalty, and related, desirable goals. Examples include the development of mobile apps to enhance learning in educational environments, to increase engagement with marketing efforts, and to improve productivity in workplace settings.

Although gamification was originally inspired by video games, it is now more commonly discussed in relation to concepts and projects outside that playful domain. When people first hear the word “gamification,” many assume it means creating games for business purposes. That is incorrect. Instead, gamification involves taking something of a non-game nature that already exists, such as an online community or website, and enhancing users’ experience by incorporating into it techniques and elements that make games so interesting and enjoyable. Often, the approach is used to make common or boring tasks more fun and engaging.

Gamification has achieved widespread popularity over the course of the past decade. Almost immediately, it became regarded as the next big thing in marketing and other fields. In the business world, it has been utilized to motivate workers, to inspire healthy competition among different teams, to generate ongoing buzz for numerous products, and to foster customer loyalty. It has also been applied so as to provide insight into employee behaviors and best practices, to monitor worker accomplishments, and to reward on-the-job performance. In the field of education, successful gamification has even been shown to increase student interest, motivation, understanding, learning, and information retention. After all, many argue that education works best when it is both engaging and fun.

Typically, gamified apps and experiences include badges, levels, and leaderboards. They emphasize achievement, competition, rewards, socialization, and status, incorporating easy-to-understand challenges, goals, rules, and deadlines. They allow individual users to feel like they are in control of their own destinies and to compare their ongoing accomplishments with those of their peers. They often place users into simulated environments and regularly allow them to connect socially with others.





Because gamification does not always succeed, it is useful to consider various reasons why gamification frequently fails. For example, although collecting information about employee performance may sound like a good thing, constantly monitoring worker contributions can become oppressive if people feel like they are always being watched. Gamification also fails when it emphasizes shortcoming and failures, rather than retaining its focus squarely on more positive outcomes. In marketing applications, gamification can only hope to succeed when it is not viewed as manipulative in nature.

Although initial discussions of gamification promised that it could be of tremendous value to almost any context, this has not turned out to be the case. Despite a few breakthrough examples in recent years such as *Pokémon Go*, *Fortune* magazine declared gamification “over” in 2014. More recently, a growing number of critics have referred to gamification as a generally unsuccessful fad. It was applied far too widely and in ways that were not particularly appealing to potential users. Its applications did not consistently tap into and fulfill important human needs. Instead, many companies took a one-size-fits-all approach to gamifying their offerings and did so unsuccessfully. Others incorporated ineffective gamification simply to try something new, proceeding with no clear outcome in mind. Too many gamified apps were created quickly and without understanding their target audience’s interests or needs. In turn, many trivial programs and apps were quite similar in design and, thus, easily forgettable. Consumers grew tired of being bombarded with badges and tokens everywhere they looked.

Plenty of businesses and content creators have since come to realize that successful gamification requires far more than simply incorporating points, badges, and leaderboards. Nevertheless, many individuals still believe that gamification holds potential for the future — when it is implemented effectively and in ways people find enjoyable. It is indeed possible to lead people down desired paths in terms of their behaviors, but, first, they must become emotionally engaged, tapping into personal aspirations, values, and goals. Accordingly, successful gamification requires more than mere technological expertise; more importantly, a thorough understanding of human psychology is necessary. Gamified content that results in a negative user experience of any kind must be avoided.

DISCUSSION QUESTIONS



Pre-Research Questions:

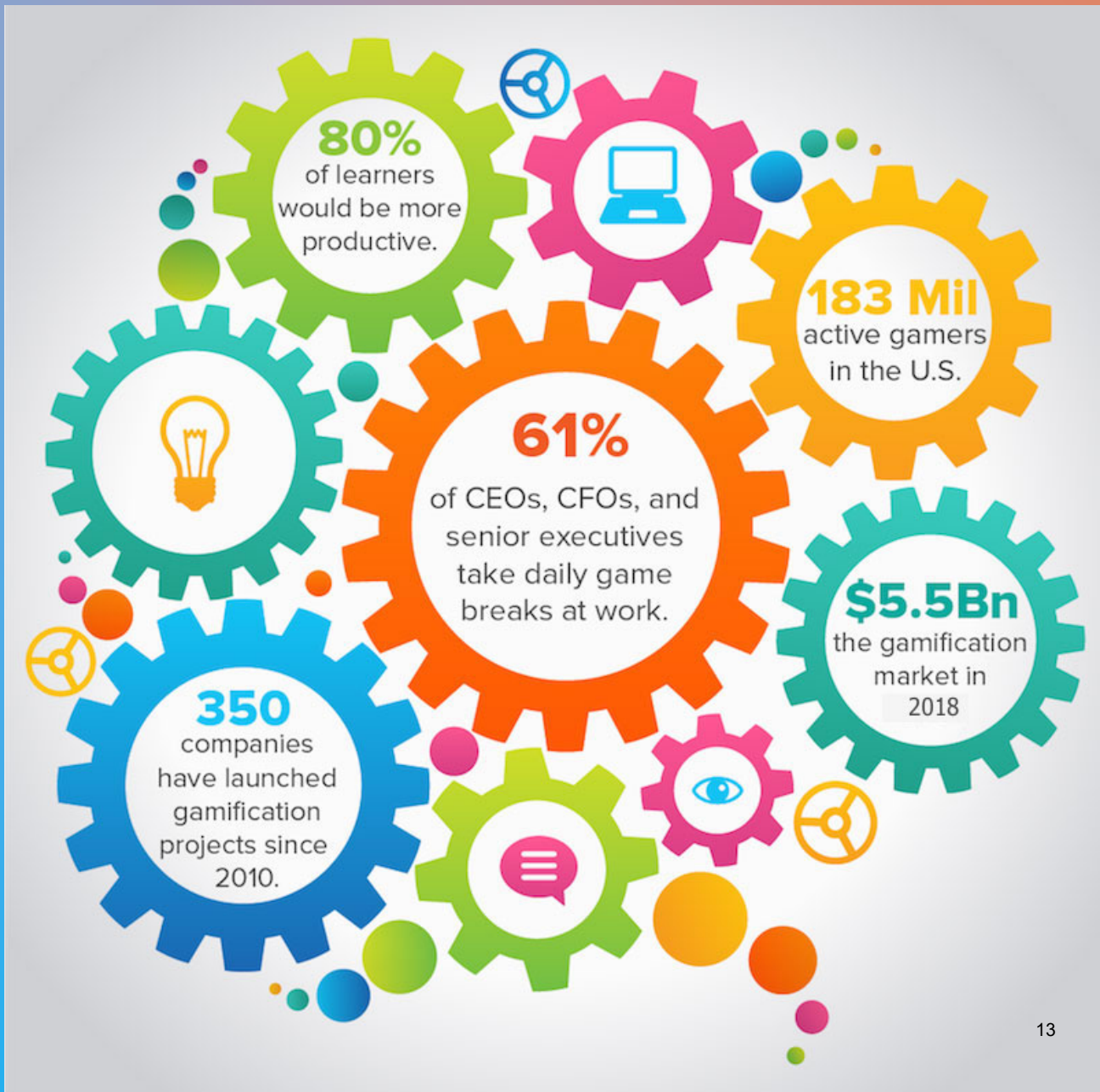
1. What are your three favorite games, and what sorts of things do you like most about each one?
2. Gamification is used frequently to make dull tasks more enjoyable. What is one boring thing you do on regular basis, and how could it be “gamified” to make it more fun?
3. What sorts of things (if any) have you heard about “gamification”, and from what sources?

Post-Research Questions:

1. Gamification involves integrating game elements, techniques, and principles into non-game experiences. What gamification experiences have you had in the past few months, and what were your reactions to them?
2. Imagine that you have been assigned to “gamify” a website. What sorts of tasks would you need to complete in order to accomplish this goal?
3. What are five positive outcomes that effective gamification can achieve?
4. Badges, levels, and leaderboards are common in gamified apps and experiences. What activities or tasks do you complete on a regular basis that involve such gaming elements, and how motivating are they to you?
5. What motivates you to make decisions or change your behavior? How might gamification be used to guide your decisions or behaviors in ways desired by others?
6. Gamification can engage people by (a) rewarding them for positive behaviors and accomplishments or (b) punishing them for their shortcomings and failures. Which do you feel is the more effective approach, and why?
7. What are some reasons why gamification efforts fail, and how might those failing points be avoidable?
8. In your opinion, is gamification a passing fad, a relic of the past, or the wave of the future? Why do you feel the way that you do?



THEMES & CONCEPTS

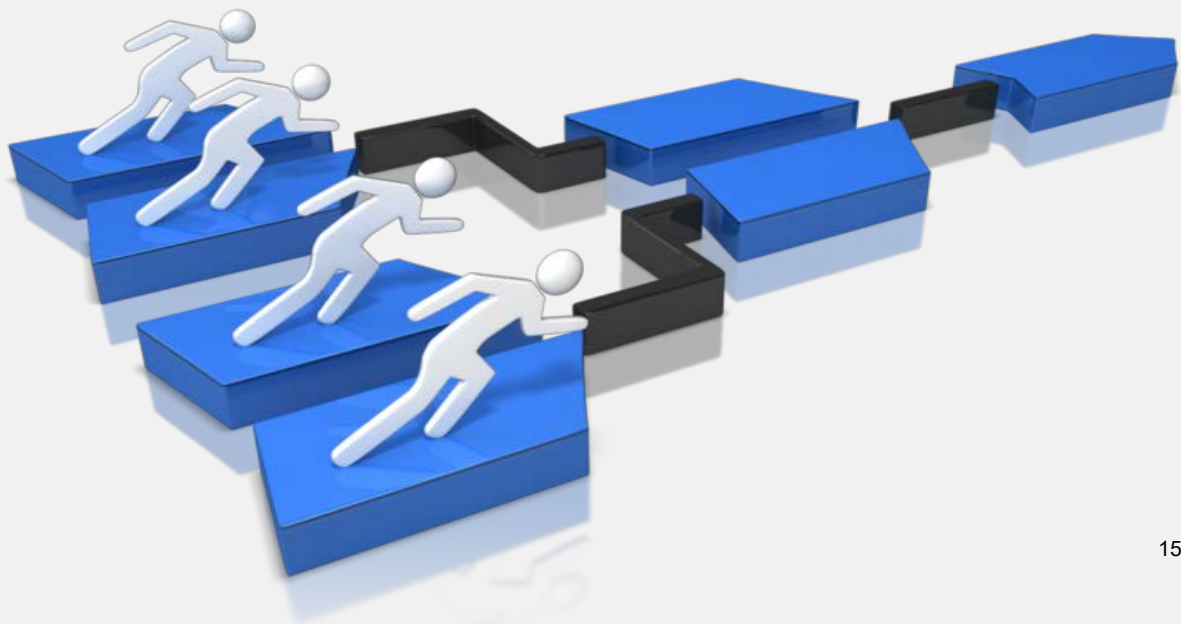


Central Theme #1: Gamification is a relatively new concept.

Humans have been playing games for thousands of years, but the concept of gamification is relatively new. Gamification is the application of game-design elements, game mechanics, and game principles in non-game contexts. It can be used in a variety of industries and business strategies. These include company culture-building, education, healthcare, marketing, project management, and recruitment.

MAJOR CONCEPTS:

- The term “gamification” first appeared online in the context of computer software in 2008, but it did not gain widespread popularity until 2010.
- The gamification market is expected to be worth \$6 billion by 2019, and 53% of technology stakeholders predict that use of gamification will be widespread in 2020.
- By 2020, customer experience, rather than product or price, is expected to be the key way that individuals differentiate between brands. As a result, businesses will work hard to integrate gamification into their customer engagement, such as by asking customers to watch videos and earn rewards.
- Consumer gamifications include Starbucks’ point system, Yelp’s elite status, and game-like social interactions on Facebook, Twitter, and YouTube. Khan Academy has gamified education and a Harvard app tracks gym-goers, giving cash to goal-busters.
- In 2011, the Oxford Dictionary included “gamification” on the U.S. short list for Word of the Year; in 2012, Deloitte cited gamification as one of its Top 10 Technology Trends of the year. Since then, gamification has not stopped growing. Today’s institutions and businesses are no longer asking themselves whether gamification is worth a try but rather how they can use it to their best advantage.



Central Theme #2: Gamification is popular in many industries, including business, education, and training.

Gamification is one of the biggest trends in the world. It is used by brands to motivate employees, to create healthy competition among teams, to generate buzz, and to encourage customer loyalty, among other benefits. With a variety of techniques — some easy to implement and others requiring advance planning, coding, or technical expertise — almost any business can use gamification to get better results, no matter the goal.

MAJOR CONCEPTS:

- Gamification allows companies to gain insight into employee behavior, best practices, and even the pain points in the “human supply chain,” where decisions and activities tend to stall due to lack of engagement.
- Edugames are one of the hottest-growing trends in corporate training programs, so much so that the market for learning via video games is expected to exceed \$8 billion by 2022.
- According to a study conducted by Badgeville, 78% of workers are utilizing games-based motivation at work, and nearly 91% say these systems improve their work experience by increasing awareness, engagement, and productivity.
- Gamification as a concept has been increasingly applied in different arenas, including political communications, the non-profit sector (“gamification for advocacy”), the business sector, and even the public sector.
- The first popular computerized games for children included Carmen Sandiego and [Reader Rabbit](#). Curriculum development has included increasing amounts of gamification in recent years. Rather than building a curriculum around a game or vice versa, games and curricula are being developed in a more integrated fashion.



Central Theme #3: There is debate about whether or not gamification is effective.

People are not motivated by things that seem irrelevant, that lack personal significance, or that lack reason. They are motivated by what connects with their personal aspirations, goals, and values. Given these conditions, is gamification a real engagement tool or merely a trend? Experts across different industries debate what gamification is and whether or not it is effective.

MAJOR CONCEPTS:

- Although *Fortune* declared gamification “over” in 2014, it clearly wasn’t. Success stories like Pokémon Go proved that consumers were still hungry for gamified engagement.
- Gamification speaks to the human psychological needs to compete, explore, and progress. According to *Gamification by Design* co-author Gabe Zichermann, “Gamification is 75% psychology and 25% technology.”
- A 2013 study published in *Nature* highlighted the cognitive boost that gaming can provide, concluding that a well-designed game can give a healthy 60-year-old the mental powers of someone 25 years younger, with these improvements lasting six months after the individual stops playing the game.
- It has been shown that poorly designed gamification efforts will yield poor results, especially if companies design without the audience and a clear problem statement in mind.
- Critics of gamification argue that it is a fad and should instead be thought of as what it really is: motivational design.



RESOURCES & SUMMARIES



While we strive to ensure that these resources are suitable for all ages, you should review them before sharing with your students. Links and content can change over time and are out of our control.

You can also get new articles from our Facebook page:

www.facebook.com/fpspi.

Adam, E., & Blewett, C. (2016, March 23). How games can hook students with short attention spans. *Huffington Post*.

The average goldfish has a nine-second attention span. Yet, the average human being today can only stay focused for eight seconds. Experts say our decreasing attention spans are the result of constant technology use. We have gotten used to living in a hyper-stimulating world.

Research suggests that gamification can help to increase student learning and motivation. One study found that teenagers use their technological devices an average of nine hours a day. They spend almost four of those hours playing games. Educators realize they need new teaching methods to go along with these devices. As a result, a growing number of schools are embracing gamification.

Leaderboards (which rank participants), levels (which provide additional benefits), and badges (which are symbols of achievement) are common game-like elements. They work well when coupled with interesting storylines and visual elements. When used in educational settings, they can improve attendance, engagement, and understanding. In many instances, they can improve overall academic performance.

Gamification was recently introduced in a fourth-year course at a university in South Africa. It was observed that the students were highly motivated by gamification and worked hard to master the educational content with its inclusion. At the same time, students ended up investing more time in the course than they otherwise might have given. Meanwhile, any students who could not keep up with the game stopped playing. This made it hard to re-engage them in the course. Some students stopped playing because they didn't feel the game's rewards were good enough.

Retrieved from https://www.huffingtonpost.com/entry/how-games-can-hook-studen_b_9527996.html

Ali, R. (2016, May 9). Gamification or manipulation? When games at work are not that fun. *Huffington Post*.

Gamification uses game mechanics, often online, to get people more interested in common tasks and to help their organizations perform better. In workplace settings, it is intended to increase both enjoyment and satisfaction. For example, imagine you work in a call center. Gamification feedback can tell you how many calls you've answered, the kinds of issues you've addressed, and the feedback scores you've received from callers. You can then compare your own performance with the work of your colleagues.

Although gamification has its positive aspects, it is far from perfect. For example, employees often dislike being heavily monitored and judged based on information gathered by a computer. Many times, also, gamification information is simplistic. For instance, computers are usually unable to know if an employee is dealing with a difficult customer when evaluating the length of time the worker spends on a call. In addition, introverted individuals can become intimidated — and feel more stress — when their names end up appearing on a leaderboard.

Gamification is often used to collect performance data about employees. This information is then used by managers to evaluate and reward worker performance. But businesses are warned to be

careful when applying gamification in workplace settings. That is because collaborative employees may be less likely to share knowledge and ideas with coworkers in these sorts of competition-based environments.

Retrieved from <https://www.huffingtonpost.co.uk/dr-raian-ali/gamification-or-manipulation-11858384.html?>

Baer, S. (2017, August 7). Gamification and game-based learning: Which is right for your business? *Forbes*.

Increasingly, games are being used in employee training. Their inclusion has been shown to improve employee learning, motivation, and the overall workplace environment. Want to incorporate gameplay into employee training? The first step is determining whether gamification or game-based learning will work best in your particular situation. Both gamification and game-based learning attempt to improve the overall learning experience. However, they do so in different ways.

“Gamification takes mechanics from games (points, badges, levels, leaderboards, feedback, rewards, etc.) and encourages people to change behavior in non-game environments,” explains Stephen Baer, head of creative strategy and innovation at The Game Agency and The Training Arcade. “These environments can range from classrooms to company workspaces to people’s homes.” According to Baer, employee-of-the-month programs are great examples of workplace gamification. That is because individuals compete — in healthy ways — to be the best at their jobs in order to receive recognition. In the process, they motivate workers to go above and beyond what is expected in their positions.

“While gamification takes already established environments and enhances them with game-like mechanics, game-based learning uses storylines, characters, interactive gameplay, feedback, and rewards” to accomplish several goals, Baer explains. For example, game-based learning can be used to “convey or reinforce learning content, reduce the monotony of lectures and PowerPoints, deliver individual feedback, and make training much more fun,” he notes. When designed and used well, both gamification and game-based learning can improve workplace learning.

Retrieved from <https://www.forbes.com/sites/forbesagencycouncil/2017/08/07/gamification-and-game-based-learning-which-is-right-for-your-business/#4575d4d13538>



Balaji, S. (2018, March 11). How are India's biggest edtech startups winning students? By treating it like a game. *Forbes*.

In India, 15 to 20 students in a classroom is a good number for effective learning. However, there are approximately 24 students in the average elementary school classroom in India. That number increases to 27 students per classroom in India's secondary schools. Having so many students in the same classroom makes it harder for teachers to provide quality learning experiences.

To help improve student learning, a growing number of schools in India are turning to gamification. In an educational setting, it involves incorporating gaming-like experiences into academic lessons. Technology-driven learning apps are used to teach students various concepts. Their use allows thousands of Indian students to compete with their peers in classrooms each day.

“When learning is a stressful process, it hampers motivation and a student's quality of education,” says Prakash Ramachandran, chief technology officer of the edutech company BYJU'S. “With gamification, personalization, and positive messaging, learning is continuous, interactive, and highly effective.” That seems to be the case, as 93% of parents reported their children's grades improved after using the BYJU's app.

Cuemath is another promising gamification app. It is used in Indian schools to provide students with a solid foundation in mathematics. Making math education fun helps students to overcome “math anxiety.” Cuemath's learning platform uses math boxes, puzzle cards, and workbooks to keep students interested as they learn.

Retrieved from <https://www.forbes.com/sites/sindhujabalaji/2018/03/11/how-are-indias-biggest-edtech-startups-winning-students-by-treating-it-like-a-game/#27cfff6908>

Beall, G. (2016, November 2). How to gamify your business to energize and engage your staff. *Huffington Post*.

Gamification works most effectively when it is engaging and fun. The industry now serves the needs of nearly two generations of individuals who have “grown up online.” To energize and engage their staff members more companies are embracing gamification. They are even finding that games work as well for adults as they do for children.

Gamification can fulfill various functions. It can teach desired behaviors and necessary skills. It can encourage innovation by improving problem-solving abilities. It can also help businesses to improve performance and inspire employees to succeed.

When implementing gamification, a company should keep its desired end goal in mind: increasing productivity and efficiency. As a result, effective gamification programs should encourage workers to compete in friendly, rather than stressful, ways. To benefit the most from gamification analytics a company must set realistic, measurable goals. It must then track the progress of individual employees toward meeting those goals and establish a program to reward those who do.

Retrieved from https://www.huffingtonpost.com/entry/how-to-gamify-your-busine_b_12778196.html

Boykiv, Y. (2015, May 11). Gamify your brand to increase customer engagement. *Inc.*

Well-constructed games pass time quickly and keep their players emotionally engaged. Gamification is intended to do those same things by using common gaming concepts. They include achievement, competition, rewards, socialization, and status.

Companies, hospitals, schools, and other organizations are now using gamification to create deeper connections with their target audiences. Bringing fun to a brand is a great way to appeal to others; thus, leaders in their respective industries are “gamifying” their brands to engage more deeply with customers. A recent example is the interactive Magnum Pleasure Hunt. Users of this gamification solution enter a virtual world to complete puzzles and collect Magnum ice cream bars. This fun game attracted more than 20 million plays while generating continual buzz for the company’s products.

Nobody likes to read instructions. Turning a product’s instructions into a quick-and-easy game allows such necessary learning to be fun. Gamification can also be used to increase loyalty to a particular brand. For example, the My Starbucks Rewards loyalty app uses levels, progress bars, and rewards to encourage repeat visits by customers and motivate them to pay for their purchases through the app.

Retrieved from <https://www.inc.com/yuriy-boykiv/gamify-your-brand-to-increase-customer-engagement.html>

Chakraborty, S. (2016, April 26). The difference between games, game-based learning, and gamification. *Infopro Learning.*

Games can be defined as fun, rewarding digital interactions. They place their users into simulated environments to keep them engaged while they are entertained and connected with others. They are usually played for enjoyment, and sometimes for educational purposes.

Game-based learning combines elements of game play (or game theory) with the goal of learning. A specific game is created to help users achieve specific short-term or long-term goals. Wiki defines game-based learning as a “type of gameplay that has defined learning outcomes. Generally, game-based learning is designed to balance subject matter with gameplay and the ability of the player to retain and apply the said subject matter to the real world.” Effective game-based learning allows participants to choose actions and experience the results of their decisions; mistakes can be made in a risk-free environment as they develop and practice new skills.

Gamification is a related but distinct type of learning experience. The term has become more common since 2010. In the assessment of Sharbori Chakraborty, “Gamification merely defines the application of all the design elements and principles necessary in a gaming environment when it is applied to a non-context format — a context not meant for fun and games.”

Game-based learning, therefore, typically incorporates challenges, goals, rules, and time factors. In contrast, gamification emphasizes the use of badges, challenges, leaderboards, levels, and points. A participation-and-reward system lies at the heart of gamification. For businesses, therefore, gamification is commonly used to increase customer engagement by rewarding those individuals who accomplish tasks that are advantageous to the company brand.

Retrieved from <https://www.infoprolearning.com/blog/differences-between-games-game-based-learning-gamification/>

Daisyme, P. (2017, June 22). How to add gamification to your marketing strategy. *Forbes*.

Gamification is believed to be an ideal way to engage with a consumer audience. The reason it works is that playing games with the possibility of winning rewards appeals to almost everyone. Most people seem to have a competitive spirit that can be playfully and creatively expressed.

The gamification process typically involves improving certain skills and some kind of prize. As part of a marketing strategy, the emotional high of winning is used to help sell specific products or services. As consumers spend more time with a company's gamification app, their engagement level with the brand grows. The end result can influence both immediate or short-term purchases — potentially even long-term purchases, too.

To effectively incorporate gamification into a marketing strategy, it is essential to know your audience well so as to determine what type of game will appeal most to them. Clear incentives must be included, such as promotional coupons or new product samples. The game that gets created should be then simple, as complex games and contests can deter players. Analytic tools should be incorporated to track player use and their desire to continue playing the game over time. Anything that does not appear to be working well should be flexible enough to be adjusted.

Retrieved from <https://www.forbes.com/sites/theyec/2017/06/22/how-to-add-gamification-to-your-marketing-strategy/#6b4080465b3b>

Gamification: Why video game technology is being applied to various consumer related fields. (2018, August 29). *Game Industry News*.

A key for getting users of video games and gamification apps “hooked” is to ensure that they become interested psychologically in such offerings. As a result, gamification strives to make tedious tasks more exciting and entertaining. It has proven to be successful in attracting customer interest, generating product sales, improving learning, and encouraging increased fitness and physical activity.

For gamification to work, players need to feel they are at the center of a game and control their own destinies. Allowing them to choose their own paths and rewards along the way is helpful in these regards. Effective games, therefore, must not be too easy or too difficult, and must include clearly defined progress benchmarks and rewards. The ability to share news of such accomplishments with others is another important part of successful gamification and helps gain new users.

Gamification was inspired by video games. However, it is more commonly discussed today when it is applied to projects and concepts outside the video-game domain. The key to success is creating a game that does not look like it has been designed specifically to “hook” a user. Instead, it should appear to have been developed naturally to enhance the overall user experience.

Retrieved from <https://www.gameindustry.com/news-industry-happenings/gamification-why-video-game-technology-is-being-applied-to-various-consumer-related-fields/>

EARN POINTS



Gaskell, A. (2017, February 21). How gamification can drive workplace performance. *Forbes*.

The human desire for knowledge is often accompanied by a hunger for new challenges. Gradual improvements in abilities and skills are often the most effective ways to learn and grow. Gamification can help to measure such improvements over time. Game-based mechanisms can also be used effectively in a wide range of workplaces.

One example of gamification is a startup called EvaluAgent. It uses game mechanics to enhance the workplace experiences of employees in call centers. EvaluAgent makes boring tasks a bit more interesting through the use of points and rewards. Employees are given specific goals to meet by their managers. Then, through their daily work activities, they earn points and receive rewards as those targets get achieved. Coaching and support can be provided along the way to anyone who appears to be falling behind in their progress.

Gamification can have additional benefits for workers. For example, a 2013 study in *Nature* discussed the cognitive benefits of gaming. The researchers found that a “well-designed game can give a healthy 60-year-old the mental powers of someone 25 years younger, with these improvements lasting up to six months after they stopped playing the game.”

Retrieved from <https://www.forbes.com/sites/adigaskell/2017/02/21/how-gamification-can-drive-workplace-performance/#740e989d7f8e>

Goetz, T. (2018, May). Forget Zombies. The notification apocalypse is here. *Inc.*

Gamification only works if it is not manipulative. At times, tracking people's progress toward desired goals can backfire. That is the lesson learned by Dick Costolo, who decided to shut down his startup business, Chorus. The company's goal was to motivate people to exercise by tracking their progress in relation to the accomplishments of their friends. As it turns out, this form of monitoring was not regarded as motivating. When a person slacked off, the Chorus app instead made that individual feel guilty. As a result, many people simply stopped using it.

Five years ago, gamification was viewed as the next big thing. Badges and tokens could be found almost anywhere, encouraging people to complete desired actions. However, people are growing tired of these things. They're realizing they are no substitute for true satisfaction of human needs.

The latest fad is called scarcity. It dangles in front of potential customers items that appear to be in short supply, with the goal of motivating them to direct action. The hotel site Booking.com uses scarcity by encouraging users to act quickly or else miss out on their desired hotel rooms. Because this approach relies on the fear of missing out, some experts believe it should be referred to more precisely as "scare-ity."

Overuse of scarcity can backfire over time, as individuals come to realize it is a form of manipulation. For example, what does it mean to label a certain product as "almost gone" if the number of remaining units is not also provided? "People don't like to be manipulated, and they'll find out eventually," cautions David Teodorescu, who analyzes the psychology of scarcity. "Companies and designers need to use it ethically. It's much easier to lose trust than to build it."

Retrieved from <https://www.inc.com/magazine/201805/thomas-goetz/manipulation-gamification-scarcity.html?cid=search>

Hariharan, S. (2016, February 16). Involver - Social Volunteering: An app that brings together humanitarians, the gamification way. *Entrepreneur.*

Involver – Social Volunteering is a platform built to connect volunteers who want to do good. It urges nonprofit organizations to adopt its services and for volunteers to use the app, thereby streamlining the process of managing volunteers. Its gamified mobile app encourages volunteer engagement as users earn badges and progress in levels for their contributions. As users' points increase, they can progress from the "Newbie" level to the levels of "Do Gooder," "Magic Maker," "Community Hero," and "Ninja." Most of the app's current users are between 18 to 25 years old.

Retrieved from <https://www.entrepreneur.com/article/270827>



Heater, B. (2016, July 24). Clinton launches app designed to gamify campaigning. *TechCrunch*.

In the week preceding the 2016 Democratic National Convention, Hillary Clinton's campaign launched an app designed to gamify campaigning. Simply called the Hillary 2016 app, it allowed her supporters to obtain points, virtual badges, and real-life prizes for doing things like completing quizzes on the candidate's policies and sharing videos through Facebook. The app was inspired by the earlier success of FarmVille.

Retrieved from <https://techcrunch.com/2016/07/24/hillary-app/>

Henry, T. A. (2018, August 24). 3 ways medical schools are embracing gamification. *AMA Wire*.

Gamification involves using design elements from traditional games in non-game settings. Its use in medical education continues to grow. The games used by medical students are continually changing. Their goal is to help students engage in learning in ways other than reading books or listening to lectures.

In 2013, the University of Alabama Birmingham School of Medicine introduced Kaizen. It is an online, multiple-choice quiz game that tests medical knowledge. Since then, its tools and platform have expanded to host questions from other disciplines. Users can play alone or with teams of other students. Those who answer items every day can earn a "marathon badge," which is designed to discourage binge learning. New badges are being developed to reward other sorts of player accomplishments, too.

At Stanford University School of Medicine, clinical instructor Henry A. Curtis has created VR Pediatric Casualty Care Point. This 3D virtual reality experience creates challenging medical situations requiring triage and immediate interventions. At certain points in the virtual reality story, the user selects a triage category and decides how to treat the patient. Once that choice is made, the user sees the situation play out right before his or her eyes, earning points and achieving new levels based on the quality of those responses.

Emergency medicine residents at Thomas Jefferson University Hospitals in Philadelphia recently took part in an "escape room" exercise to strengthen their team-building skills. Escape rooms are game-like settings in which groups work together to solve problems or complete tasks in a specific amount of time in order to "escape the room." The participants reported engagement in the activity, which allowed them to immerse themselves in a low-stakes scenario that rewarded their teamwork and leadership abilities.

Retrieved from <https://wire.ama-assn.org/education/3-ways-medical-schools-are-embracing-gamification>

Howarth, B. (2018, May 3). Rethinking gamification in marketing. *CMO*.

Gamification was once the big buzzword of the marketing world. Today, marketers are wondering whether it still has a place in that world or perhaps was just a fad. According to Morris Bryant, a partner with the digital agency Sparro, gamification “hasn’t become the game changer it was acclaimed to be. As with every trend, it was widely applied, and only the most practical uses have survived. The largest content-creation websites — Facebook, Instagram, YouTube — don’t use the model, which says a lot.”

Gamification caught on quickly in the field of marketing because it promised to rapidly build audience engagement. However, a growing number of experts now believe that its major focus on points, badges, and leaderboards was not that effective. “As we know, these are not the things that make a video game fun, which is about the challenge, or fulfilling certain needs,” says Zac Fitz-Walker, who studied gamification while earning his Ph.D. “And that wasn’t being captured in a lot of early gamification systems.”

New studies are underway to learn just how effective games might be in influencing individuals to behave in desired ways. One such study will focus on the effectiveness of game-based approaches to surveys. The belief remains that games and high-level engagement, under certain conditions, can indeed be used to guide individuals down specific paths because they activate the emotional part, rather than the rational part, of the human brain.

Retrieved from <https://www.cmo.com.au/article/640752/rethinking-gamification-marketing/?pp=2>

Hymers, L. (2016, November 20). Gamification and what it means for product development. *Medium*.

Used effectively, gamification can help companies generate customer loyalty. However, many businesses offer meaningless loyalty programs that do not appeal to customers and are easily forgotten. To incorporate gamification well, they need to reconsider how game mechanics can be used to make customers’ online experiences more enjoyable and engaging.

Rajat Paharia is the author of the book *Loyalty 3.0*. In it, he points out that people are not motivated by things that seem irrelevant to them. Instead, they embrace rewards that connect with individual aspirations, goals, and values. Five items that tend to motivate humans are autonomy, mastery, purpose, progress, and social interaction. Autonomy is the desire to control one’s own life. Mastery is the desire to improve in specific ways. Purpose is the desire to make a difference by being part of something bigger than oneself. Progress is the desire to achieve intended results. Social interaction is the desire to connect with others in meaningful ways.

Those five motivations are essential to any effective gamification process. Quick feedback, for example, serves the needs of progress and mastery. Clear goals to achieve serve the needs of purpose and progress. The earning and displaying of badges, as well as leveling-up, serve the needs of mastery, purpose, progress, and social interaction. Those elements and related others can combine to create a loyal, engaged customer base.

Retrieved from <https://medium.com/@MentallyFriendly/gamification-what-it-means-for-product-development-1ed8b1d25da3>

Jacobs, S. (2017, June 7). When should you say no to gamification? *Learning Solutions*.

Gamification is not some sort of magic wand that can instantly transform an organization. Many businesses have found that simply offering points, badges, and leaderboards as part of an app does not automatically lead to success.

There are at least five situations when gamification should be avoided. First, gamifying a system that doesn't work or has little chance of success is a waste of time. So is introducing gamification without first getting to know your audience. Because gamification incorporates a somewhat lighthearted approach to learning, it should not be used with very serious or sensitive subjects. It should also not be used when someone desires a one-size-fits-all solution, as the needs and preferences of younger people often differ substantially from those of older users. Finally, gamification should be avoided simply for the sake of introducing something different or new. It should only be embraced when it can clearly help achieve specific business goals.

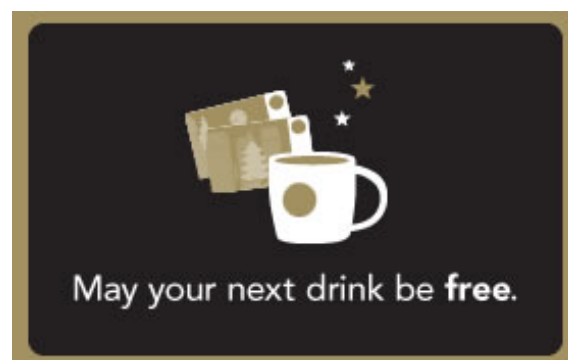
Retrieved from <https://www.learningsolutionsmag.com/articles/2351/when-should-you-say-no-to-gamification>

Kulpa, J. (2016, September 26). The right (and wrong) way to gamify work. *Fast Company*.

The goal of gamifying work tasks is to make them more fun and generate excitement. It doesn't always end up working out that way, though. Done poorly, gamification often leads to tension and frustration. Without clear guidelines and end goals, employees can find it to be a complete waste of time.

Two components are essential to effective gamification: (1) Designing with the intended players in mind and (2) Helping employees keep their "eyes on the prize." The first component helps to ensure that the users will want to participate and find the gamified task to be relevant. In the design phase, it is important to encourage healthy competition rather than overusing competition, which can cause individuals to lose motivation and result in underperformance. The second component ensures that gamification is about more than just having fun: the true goal is to improve workers' productivity. As a result, it is essential to determine the desired outcome first and then work backwards to create a measurable program that can be used to achieve it.

Retrieved from <https://www.fastcompany.com/3063932/the-right-and-wrong-way-to-gamify-work>





Kumar, J., Herger, M., & Dam, R. (2017). Introducing game mechanics for gamification. *Interaction Design Foundation*.

According to game designer Jesse Schell, “Game mechanics are the core of what a game truly is. They are the interactions that remain when all of the aesthetics, technology, and story are stripped away.” The list of possible game mechanics can become quite lengthy. That is because game mechanics include all of the following: achievements, badges, challenges, collaboration, countdowns, discovery, emotions, epic meaning, journeys, leaderboards, levels, loss aversion, narrative, relationships, rewards, points, progression, quests, rewards, and urgent optimism, among others.

What should be clear from the above list is that a designer has a wide range of game mechanics that can be used in any gamified experience. When incorporated effectively, they make that experience fun and exciting for the players. However, it is important not to use so many different mechanics that the game becomes confusing. When that occurs, players become overwhelmed and no longer want to play.

Retrieved from <https://www.interaction-design.org/literature/article/introducing-game-mechanics-for-gamification>

Kumar, P. (2016, December 26). How gamification in a digital media environment boosts sports fan engagement. *Entrepreneur*.

Watching sports can be a passive process. However, sports consumption today strives to be more captivating and interactive than in the past. Recent technological developments allow sports fans to interact with others constantly as a game unfolds. At any moment, for example, they can make predictions, provide live updates, and offer individual insights and commentary using online platforms such as Facebook and Twitter.

In the past, the fantasy sports market offered new delights to sports fans. However, team supporters in recent years have begun turning away from fantasy sports because they are too passive. Fantasy leagues require locking in team choices almost an hour before a match begins. As a result, a growing number of today’s sports fans are seeking a more exciting, real-time format. Live sports gaming appears to be providing the answer. In fact, live sports gaming is considered to be the next big thing in sports fan engagement. It allows fans to be involved in a game from its first minute to the last, connecting with others in various ways such as through pre-match quizzes, live-match predictions, and chat forums.

Retrieved from <https://www.entrepreneur.com/article/287025>

Kurshan, B. (2016, February 11). The intersection of learning and fun: Gamification in education. *Forbes*.

Computerized educational games first emerged in the 1980s. Today, curriculum development increasingly includes gamification right from the start. There are many different ways that games are used in schools. Some students use games to produce specific things, such as a written text or visual models. Others play games designed to teach them about specific aspects of history or to serve as starting points for educational discussions.

One challenge commonly faced by educational game designers is how to make the learning experience enjoyable. If they focus too highly on learning objectives, they run the risk of creating games that will not be fun or motivating for the students who play them. To create a truly effective game, it is often necessary for designers to incorporate the art, culture, and science of contemporary game design in partnership with educators and others.

Retrieved from <https://www.forbes.com/sites/barbarakurshan/2016/02/11/the-intersection-of-learning-and-fun-gamification-in-education/#2629c80e9c19>

Mathewson, T. G. (2017, November 29). Can this game-like app help students do better in school? *Wired*.

Middle school students in Fresno, California use a new game-like app called Strides. The app provides them with points based on the ways they use it, their attendance, their grade-point average, and other measures. Using the app every day helps the students to “level up” more quickly.

Strides is an experiment in Fresno. Based on the personal data-tracking trend inspired by Fitbit, it has been introduced to help students do better in school. The app emphasizes positive reinforcement, so users never end up losing points. Students who don’t get good grades but attend classes regularly and participate in extracurricular activities can end up earning as many points as those who earn top grades but are not involved in clubs or other activities. Some students say using the app has changed their personal behaviors for the better.

While using Strides, students earn badges for certain accomplishments. Sometimes gold stars are awarded. At other times, the gold stars transform into appealing memes instead, such as a winking puppy who emphasizes that the student user is awesome. The leaderboard helps students see how their performance compares to the accomplishments of their peers. However, some educational experts caution that too much emphasis on extrinsic motivation can end up hurting a student’s intrinsic desire to learn.

Retrieved from <https://www.wired.com/story/can-this-game-like-app-help-students-do-better-in-school/>

Newman, D. (2017, November 28). How to drive employee engagement with workplace gamification. *Forbes*.

Why do 70% of efforts to transform businesses fail nowadays? The answer is a lack of employee engagement. Workplace gamification can help to fix that. Today's workers want to know how they are doing on the job. They also want to know that their efforts matter. Gamification can be used to let them know both of those things.

Gamification is not intended to transform work into a game. Instead, it is more like "the carrot on the stick that the rabbit keeps chasing." In other words, it plays on human psychology to drive human engagement and to instantly reward individuals for the desirable things they do. Its benefits include offering real-time feedback and helping to avoid favoritism by managers.

Gamification works best in workplaces where accomplishments are easily measured. For example, it can be used to keep track of the number of contacts an employee makes, the number of complaints the employee addresses, or the number of customers the employee serves. It also works well for workplace training and mobility. With regard to training, gamification is more fun than sitting through webinars and traditional training sessions. With regard to mobility, it also allows managers to keep track of their employees' contributions even when they work outside of their direct line of sight. To be most effective, it is necessary to find the right amount of gamification that keeps workers engaged without making them feel overwhelmed or stressed.

Retrieved from <https://www.forbes.com/sites/danielnewman/2017/11/28/how-to-drive-employee-engagement-with-workplace-gamification/#5d4e4a593cf0>

Olenski, S. (2018, August 14). How to use gamification to reach consumers on mobile. *Forbes*.

The average American checks his or her cellphone 80 times a day. This frequent interaction provides companies with plenty of opportunities to engage people through gamification. The goal is to create a gamified experience that is interesting and user-friendly enough to convert them from "bypassers" into customers.

Most individuals value efficiency and fair prices. Many also enjoy the process of discovery, which can help online retailers compete more effectively with major companies like Amazon. Businesses offering unique methods of engagement can win the loyalty of consumers. Mobile shopping platforms that use gamification elements to make online exploration more enjoyable are therefore important.

Mobile is a great platform for gamification because it already has a strong social-sharing element. It allows consumers to immediately brag about their accomplishments or rewards to others. The more people share positive experiences with particular brands, the more likely it is that others will want to get in on the action. Rewards of various kinds, such as discounts or free swag, are essential to incentivizing continued use of gamification apps. Simplicity is also essential, so stay away from creating games that are hard to play or require have complicated instructions.

Retrieved from <https://www.forbes.com/sites/steveolenski/2018/08/14/how-to-use-gamification-to-reach-consumers-on-mobile/#6f4e0be11e0b>

Paynter, B. (2017, August 16). Bill Gates continues his quest to gamify philanthropy with a malaria quiz. *Fast Company*.

Bill Gates wants more people to understand the realities of global philanthropy. To get them interested, he has created “Mosquito Wars.” This is a letter, which contains a one-question quiz, informing readers about the global challenges of malaria and its spread by mosquitoes.

Gates knows that distributing insecticide-treated bug nets helps to reduce deaths from malaria. Anyone who reads his letter and correctly answers the quiz question gets an opportunity to donate one of the bug nets to a family that needs it. His immediate goal is to get 100,000 people to donate nets to families in Mozambique.

Retrieved from <https://www.fastcompany.com/40454227/bill-gates-continues-his-quest-to-gamify-philanthropy>

Pickard, T. (2017, February 22). 5 statistics that prove gamification is the future of the workplace. *Business.com*.

The following five statistics reveal that gamification is now central to the modern workplace: (1) Lack of engagement causes 70% of business-transformation efforts to fail. (2) By the end of 2015, 40% of Global 1000 organizations were already using gamification to transform their business operations, and that number is expected to grow. (3) The worldwide gamification market, worth \$242 million in 2012, grew to more than \$2 billion in 2016. (4) 53% of technology experts believe that gamification will continue to play an important role in the year 2020. (5) In only three months, the Stewart Agency used gamification to double the number of e-mail addresses collected about potential leads compared to the preceding two years. In addition to being the future of the modern workplace, gamification is already helping countless businesses succeed today.

Retrieved from <https://www.business.com/articles/5-statistics-that-prove-gamification-is-the-future-of-the-workplace/>



Rashid, B. (2017, May 20). Hacking children’s learning: Why gamification technology has the answer. *Forbes*.

Learning needs to be fun. Students and their parents should not see it as a chore. Gamified education apps put fun back in the learning equation. A growing number of studies show they can produce enhanced learning and engagement.

Here are some of the gamification elements that work best in e-learning courses: giving the ability to personalize user profiles and create avatars, dividing content into chapters to increase interest and retention, and adding incentives to recognize advancing status. Including specific deadlines and making the process social also aids in student engagement.

The Library of Miss Gadish is a learning app to increase students’ reading abilities. Founder Tali K. Gadish says gamification was essential to creating a product that would get young people excited about reading and stimulate their imaginations. Users collect a series of stars and shapes as rewards for the books they read. “I love the way in which content is made available and is structured so that children, parents, or teachers can grow the collection of stories on a customized basis at the child’s own pace,” remarks elementary school teacher Anita Steinfeld.

Retrieved from <https://www.forbes.com/sites/brianrashid/2017/05/20/hacking-childrens-learning-why-gamification-technology-has-the-answer/#2cfea5f22900>

Rovello, J. (2018, April 5). Want to gamify your workplace? Avoid these 4 mistakes at all costs. *Inc*.

Gamification can introduce friendly competition and excitement into a workplace in order to enhance a corporate culture. But it only works when you do it right. For example, United Airlines recently announced that it was replacing its employee bonus system with a lottery that would provide expensive prizes to only a small number of workers. Not surprisingly, the airline’s workforce strongly objected and the plan was abandoned.

Here are four important ways to help ensure the creation of a successful gaming strategy. First, it needs to align with your company’s values and corporate culture. Second, it must reward accomplishments rather than draw attention to shortcomings or failures. Third, it must involve randomness and exclusivity in order to have long-term appeal and not become boring. Fourth, it should only be introduced if it makes sense for your particular organization.

Retrieved from <https://www.inc.com/jessica-rovello/united-airlines-got-gamification-wrong-heres-how-you-wont.html?cid=search>

Ruch, D. (2016, March 30). Hate the games, not the players. *TechCrunch*.

When does gamification typically fail? When you create a game to provide a solution to a problem that you do not understand. In this sort of scenario, all of the points and badges in the world will not motivate users to continue using your gamified app or program.

Gamification can be defined as “the application to other activities of game-playing elements (such as point scoring, competition, and rules of play) in an attempt to achieve a measurable goal.” In the business world, this goal might be to increase productivity or worker satisfaction. In our personal lives, it might be to lose weight or unplug from our devices by a certain time each day.

A few years ago, gamification was viewed as the next best thing in the business world. Since then, that enthusiasm has decreased. As early as 2014, experts were predicting the end of gamification. What went wrong? Many times, gamified apps were unappealing to users, too complicated, or entirely unclear. The gold stars and other rewards they offered were not enough to motivate desired behaviors. Combined, those realities resulted in a negative user experience. As a result, users no longer wanted anything to do with such apps.

Many of the failed gamified apps too highly emphasized intrinsic motivation, or the process of playing the game as an end in itself. They failed to realize that when a desired behavioral shift is somewhat significant, extrinsic motivation — such as monetary or experiential rewards — is typically needed. One key to successful gamification is that the extrinsic reward must make players feel like they really stand to lose something important if they fail to change their behavior. Also, many of the apps required having to make too many decisions, which turned off users who are already tired of making decisions at the end of a long day. That’s why it is important to keep the rules of a game easy to understand and follow.

Retrieved from <https://techcrunch.com/2016/05/30/hate-the-games-not-the-players/>



Schiff, J. L. (2017, March 23). How gamification improves customer engagement and retention. *CIO*.

Successful gamification can improve customer engagement and retention. “According to Gallup, brands that engage their customers realize 63% lower customer attrition and 55% higher share of wallet,” says sales and marketing professional Alex Gault. That is why so many companies strive to engage their customers through games that reward them for playing and their loyalty.

Gamification can serve a variety of business goals. For example, rewards and giveaways can attract new customers. The games themselves can teach users more about a company the longer they continue to play. Specific sorts of new games can be developed to promote particular products. An effective rewards program can help a company retain its customers by keeping them coming back for more. For example, Open Table provides a \$20 gift certificate to users who collect 2,000 dining points by making repeat reservations through its restaurant-reservation service. The keys to successful gamification also include creating games that are easy to understand and winnable as well as making them mobile and social-media friendly. “Including social sharing into branded games will boost your company’s social media presence,” Gault says.

Retrieved from <https://www.cio.com/article/3184368/small-business/how-gamification-improves-customer-engagement-and-retention.html>

Sciicluna, C. (2017, May 24). Gamification is a fad. Shall we call it motivational design? *Medium*.

There is more to gamification than simply taking something and adding game elements and mechanics. Successful gamification also requires adequate motivation. Perhaps we should begin referring to this process as “motivational design.”

Some experts believe that motivational design will be the next big thing. Rather than creating gamified apps quickly and simply, it will require designers to accept the responsibility of creating apps and other products that can truly motivate others to carry out desired actions. From this point on, doing so will be an essential skill for any successful designer. It will require them to understand problems thoroughly before deciding how to creatively solve them.

Retrieved from <https://medium.com/casumo/gamification-is-a-fad-shall-we-call-it-motivational-design-5c8c836f4fc8>

Tabaka, M. (2017, March 15). They call it the Pokémon Go for brands. How to gamify your marketing with augmented reality. *Inc*.

Snatch is a virtual treasure hunt that people play using their mobile phones. It uses augmented reality to allow people to search for and “snatch” prizes, such as free vacations and meals. However, individuals must hold on to any found prizes for six hours before they receive them. If someone “snatches” those prizes away from them before then, they can end up empty-handed.

Snatch has been called the “Pokémon Go for brands.” It offers a fun, interactive experience to consumers. The key to its success, according to the company’s chief marketing officer Phil

Lloyd, is that “Snatch is about people engaging with brands in their own environment, rather than brands being in places we’d rather they weren’t, like YouTube and Facebook. We’re knocking on the door and asking to be let in, not kicking the door down and interrupting.”

Augmented reality is becoming a larger part of our daily lives. It immerses people in interactive environments. For businesses, it is an exciting marketing tool because it allows consumers to seek out their products and get excited when they win something. This form of gamification is proving to hold consumers’ attention much longer than traditional marketing approaches.

Retrieved from <https://www.inc.com/marla-tabaka/they-call-it-the-pokemon-go-for-brands-how-to-gamify-your-marketing-with-augmen.html?cid=search>

The top 15 examples of gamification in healthcare. (2017, July 20). *The Medical Futurist*.

Game play is helpful in focusing people’s attention and tapping their inner strengths. Gamification in healthcare can serve as a motivating force to make people happier and healthier. A variety of gamified apps and services are already helping individuals achieve health rewards and reinforce their ongoing commitment to personal well-being.

When it comes to physical fitness, Fitbit is a great example of an app that motivates people to count steps and achieve better performance at the gym. Blue Shield California uses social media to motivate users to earn points, badges, and status as they improve their health. CaféWell’s Pact app also tracks fitness progress, but with a twist: a user who fails to meet established goals must contribute some money to financially reward more successful users.

With regard to the management of medications and chronic medical conditions, Mango Health’s smartphone app reminds patients when it is time to take their medications. Bayer’s Didget blood glucose meter rewards children between the ages of 4 to 14 with access to new game levels and options for regularly checking their blood glucose levels. The mySugr app, also designed for diabetes management, features a cute diabetes monster that motivates both children and adults to consistently monitor their blood glucose levels.

A number of other gamified healthcare apps have been designed for children. One example is the American Red Cross’ Monster Guard app, which prepares young people to respond to emergencies. Users gain points and medals for completing various tasks associated with responding to fires, floods, hurricanes, and other natural disasters. Both Leapband and Vivofit jr. have been designed to keep young people moving, monitoring their activity levels throughout the day and providing virtual rewards.

In the area of physical therapy and rehabilitation, the University of Michigan’s SCI Hard gaming app makes stretching and other rehabilitation exercises more fun. Reflexion Health provides video feedback to users to ensure they properly perform all physical therapy exercises. The GestureTek Health app uses virtual reality programs to exercise individuals’ physical and cognitive abilities. MindMaze devices use gaming techniques to retrain the brains of stroke victims.

Retrieved from <https://medicalfuturist.com/top-examples-of-gamification-in-healthcare>

The ultimate step-by-step guide to understanding gamification. (2017, December 7). *Gamelearn*.

Want to have fun while managing your e-mail messages? The Email Game uses a system of points, penalties, and rewards to motivate users to keep their inboxes clean. It employs gamification to make a boring task less stressful and more enjoyable.

Successful gamification requires a solid understanding of human psychology. Technological mastery alone is not enough. Appealing apps tend to emphasize important elements such as altruism, competition, progress, recognition, rewards, and status. They also need to be fun.

Video game designers focus on key gamification techniques. The most important ones are badges, character selection, countdowns, levels, likes and recommendations, progress bars, rankings, stories, teamwork, upgrades and power-ups, and virtual rewards (e.g. points, stars, extra lives, etc.).

Although the various elements and techniques may sound simple, experts say you shouldn't be fooled by that simplicity. It takes far more to create an effective gamified app than simply including rankings, a points system, and a progress bar. According to gamification guru Yu-Kai Chou, "The key is to think first about the things that motivate human beings (competition, status, altruism, rewards, etc.) and then develop a strategy to achieve these (a story, levels, points, badges, and so on)."

Retrieved from <https://www.game-learn.com/ultimate-step-by-step-guide-to-understanding-gamification/>

Thurman, K. (2017, April 28). The myth and power of gamification (hint, it's not gaming). *LinkedIn*.

It's no secret at this point that a gamified workplace can increase productivity. In 2015, Gallup poll results revealed that 87% of workers throughout the world are not engaged. In the United States, 70% of workers admitted the same thing. Successful gamification can help to re-engage them and motivate them to work better.

In the business world, gamification can increase productivity in at least three important ways: by encouraging engagement, enhancing learning and expertise, and producing useful data. Engagement results from games that focus on rewards rather than punishments. Learning and expertise can grow when games reveal needed information and build in short quizzes along the way. Users of such games provide various kinds of data about employee behaviors and best practices. It is important, however, to keep in mind that individuals like to feel "in control" rather than being "controlled." As a result, a good game must never make them feel like they are being watched constantly by Big Brother.

Retrieved from <https://www.linkedin.com/pulse/gamification-workplace-kevin-thurman/>

Why your competitors are using edugames for staff training. (2017, June 9). *Gamelearn*.

Edugames can be helpful for training employees. They are appealing because most people have grown up playing different kinds of games, and they can also be very effective. As University of Colorado researcher Traci Sitzman has found, “The average scores of students who train with games (compared against other teaching methods) are 11% higher for learning factual knowledge, 14% greater for skills acquisition, and 9% better in retaining knowledge.”

Effectively designed edugames enhance learner engagement and motivation. Partly due to their interactivity, edugames are seen as more fun and less boring than traditional classroom-based and e-learning experiences. Meanwhile, it is possible for edugames to reproduce real-world working conditions and situations, which makes them relevant. They are often cheaper to use than classroom-based training, which can save a company both valuable time and money.

Retrieved from <https://www.game-learn.com/why-your-competitors-are-using-edugames-for-staff-training/>

Zurkus, K. (2018, August 27). How gaming prepares youth for careers in cybersecurity. *Security Intelligence*.

Gamification can be used to train the next generation of cybersecurity experts. In part, that is because many young people today have grown attached to their mobile phones, which can be utilized to educate them. Allowing kids of all ages to play online games that teach them about cybersecurity risks can be a good thing. In addition to helping them protect their privacy and personal information, it might even lead to a future career in cybersecurity.

Gamification can also be utilized to train today’s existing cybersecurity professionals. It is a useful tool in training individuals to detect and eliminate cyberthreats. For example, capture the flag competitions are now popular at various cybersecurity events. “There is a correlation between the use of gamification and happier cybersecurity staff,” remarks gamification researcher Jason Flood. “More than half of respondents who are extremely happy in their roles say they use ‘capture the flag’ gaming once or more a year.”

Retrieved from <https://securityintelligence.com/how-gaming-prepares-youth-for-careers-in-cybersecurity/>



Digital Resources: Gamification

52 Gamification mechanics and elements. *Gamified UK.*

Retrieved from <https://www.gamified.uk/user-types/gamification-mechanics-elements/>

Description: A periodic table of game mechanics

Amasty. [Types of gamification users]. [Infographic].

Retrieved from <https://visual.ly/community/infographic/business/ecommerce-gamification-types-users>

Description: An infographic breakdown of the four types of gamification users

Badgeville. [Motivating Today's Workforce]. [Infographic].

Retrieved from <https://visual.ly/community/infographic/business/motivating-todays-workforce>

Description: An infographic exploring what motivates employees and how gamification plays a part

Chou, Y. (2018) Gamification examples the fully comprehensive list.

Retrieved from <https://yukaichou.com/gamification-examples/>

Description: A list of gamification examples broken down by industry gamification pioneer and creator of the Octalysis Framework Yu-kai Chou

Duolingo. [Website].

Retrieved from <https://www.duolingo.com/register>

Description: A best-in-class example of gamification in learning; an explorative website that allows students to identify elements of gamification or try out the app to experience game mechanics through their own experiences

Effective Corporate Training: The positive effects of video games. (2015, August 09). *Gamelearn.* [Infographic]

Retrieved from <https://www.game-learn.com/effective-corporate-training-positive-effects-video-games/>

Description: An article and infographic outlining effectiveness of video games in training

Every Classroom Matters. [Serious games: Rethinking gamification in education]. [Podcast].*

Retrieved from <https://www.stitcher.com/podcast/bam-radio-network/every-classroom-matters/e/42838255?autoplay=true>

Description: A podcast with special guest Cat Flippen, who shares the ideas, strategies and tools she's currently researching on use of games in education

Gamification+. (2017, June 05). *How to run a successful gamification project.* [Infographic].

Retrieved from <https://gamificationplus.uk/gamification-project-design-framework/>

Description: A infographic providing the project workflow and written breakdown of how to successfully manage a gamification project

Katie Berton. *YouTube.* [YouTube Channel]

Retrieved from <https://www.youtube.com/channel/UCA9WFpbGRcbI0OJ7HBJImfg>

Description: A series of short videos on gamification published by a YouTuber on topics such as:

- Examples of Gamification
- What is Gamification?
- Effective Gamification

Savvidis, P. (2016, June 21). *Gamification for Business - Infographic*. [Infographic].

Retrieved from <https://www.webanywhere.co.uk/blog/2016/06/gamification-business-infographic/>

Description: A data-driven infographic detailing gamification in business

SuperCell. [How Gaming Relates to Your IRL Decisions]. [Video File].

Retrieved from <https://www.greatbigstory.com/stories/how-gaming-relates-to-your-irl-decisions>

Description: A video examination of how gaming informs learning in real life

TEDx Talks. (2014, February 26). *Gamification to improve our world: Yu-kai Chou at TEDxLausanne*. [Video File].

Retrieved from <https://www.youtube.com/watch?v=v5QjuegtiyC>

Description: A video portraying the eight pillars that drive human behavior and enable gamification to work

TEDx Talks. (2015, January 12). *Gamification at work*. [Video File].

Retrieved from <https://www.youtube.com/watch?v=6wk4dkY-rV0>

Description: A video overview of gamification, especially in the workplace

TechnologyAdvice. (2014, October 31). *Gamification in the workplace*. [Video File].

Retrieved from <https://www.youtube.com/watch?v=vlnCVUliq6g>

Description: A video detailing the basics of gamification strategy, including common terms

TechnologyAdvice. (2017, October 18). *Infographic: The history of gamification*. [Infographic].

Retrieved from <https://technologyadvice.com/blog/marketing/history-of-gamification-infographic/>

Description: An infographic timeline of the history of gamification

Techquickie. (2016, August 12). *How does gamification work?* [Video File].

Retrieved from <https://www.youtube.com/watch?v=VwGkKTNYxM>

Description: A short video addressing how, exactly, gamification works

Top 10 gamification examples. (2015, December 23). *Gamelearn*.

Retrieved from <https://www.game-learn.com/top-10-gamification-examples/>

Description: A web-list of ten gamification examples across a number of industries

Turning exam preparation into gaming in Jamaica (2016, April 05). *BBC*. [Video File].

Retrieved from <https://www.bbc.co.uk/news/av/business-35946567/turning-exam-preparation-into-gaming-in-jamaica>

Description: A short video and article showing how gamification helps Jamaican students prepare for exams

Zillion Designs. (2015). *Facts You Didn't Know About Gamification Industry*. [Infographic].

Retrieved from <https://www.zilliondesigns.com/blog/infographics/gamification-industry/>

Description: An infographic providing facts about gamification

**First 5-minutes are most relevant*

***Not all content has been screened for use in classroom*

Appendix

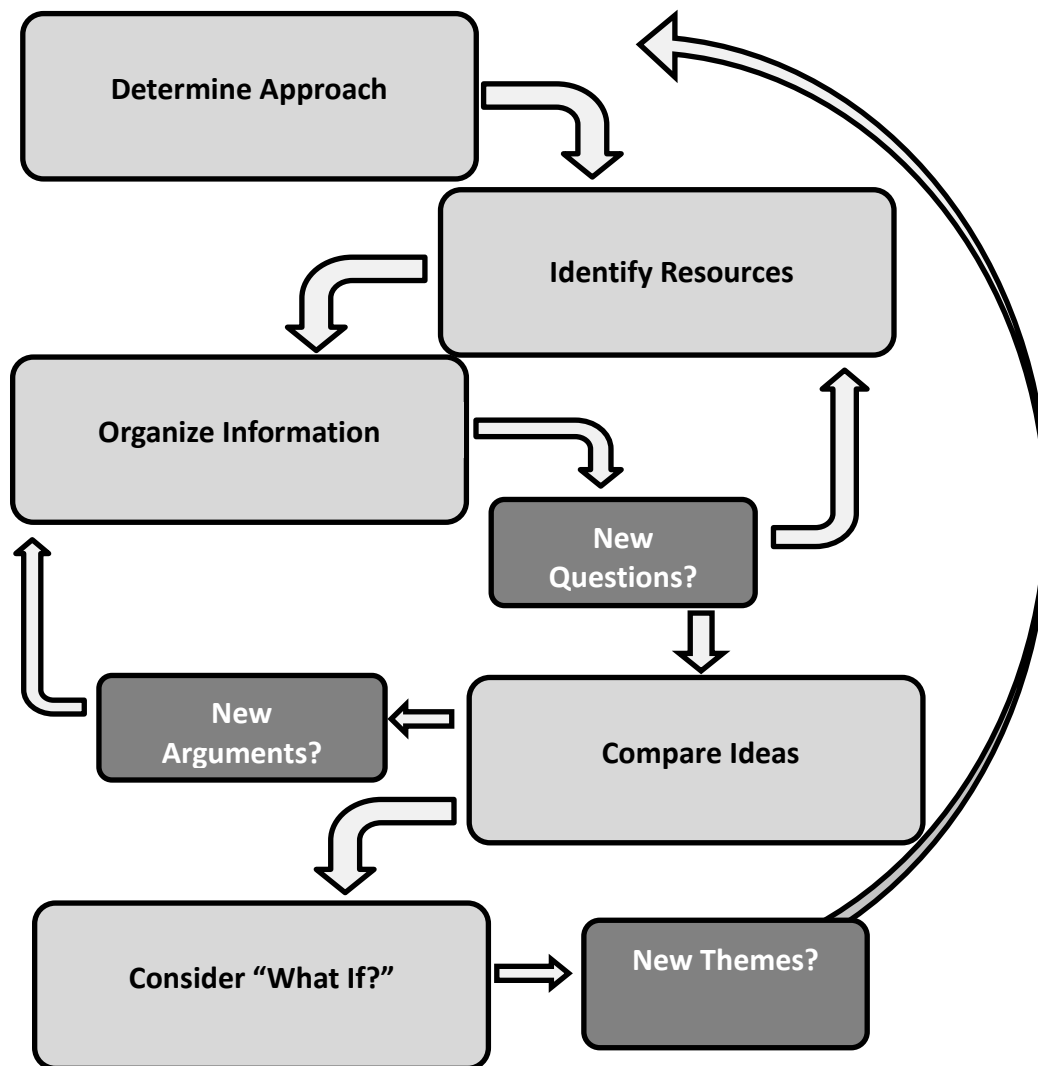
Research
Strategies,
Problem Solving
Tools, &
Practice Future Scene



Strategies for Research

It has been said that research is the “unofficial” first step of the problem solving process. Research gives an understanding of the topic and a “jumping-off point” when presented with a Future Scene. Although students do not use every piece of information they find for each topic, a broad base of knowledge is important. A well-rounded understanding of the past and current status of a topic allows students to better extrapolate those concepts into the future. A solid knowledge base serves students well beyond FPS competitions and often sparks ideas for school projects, creative writing, and beyond. The Categories of Knowledge section that follows can be applied to each step of the research process to expand thinking and approach themes from new or nonobvious directions.

A goal of Future Problem Solving is to understand the topic from which the problem arises, as well as the problem itself. Gathering knowledge is a life-long pursuit and thus a never-ending cycle. There are effective strategies to follow logical paths of inquiry and manage the information gained in a useful manner.



Determine Approach

Determine what you already know about the topic. Generate thoughts about your knowledge as a group. Discuss thematic vocabulary that will help you locate and understand your resources. At the beginning of each topic, consider an online collaboration site to gather and organize main concepts discovered by research.

- If more than one person is working on the topic, divide up the research responsibilities. One person might do interviews, one person might search through magazines, one person might search for videos.
- Organize bookmarks and use them. Every time you find an article, video, or infographic on the topic, save the information to your online account to share with your team.
- Set time limits on your research. Deadlines often create higher productivity and efficiency.
- Online collaboration tools are beneficial to organize and discuss information.
 - www.nowcomment.com
 - www.diigo.com
 - Virtual Classrooms – [Google](#), [Microsoft](#), etc.
 - www.edmodo.com
 - www.slack.com
 - www.livebinders.com

Identify Resources

Researching a subject thoroughly goes well beyond a single article or a chapter in a book. Consider a wide range of sources to gather a wide range of ideas and opinions.

Articles – Read everything you can get your hands on - both online and in print. Magazines, books, pamphlets, newspapers, and blogs are a few suggestions. Specific sources may include:

- News articles – consider local, national, international, and specialty papers
- Futuristic periodicals – The Futurist, Discover, Futurism, etc.
- Library searches – librarians can identify sources you did not even know exist
- Internet searches – use key terms and concepts you know to search a larger spectrum

People – Talk with the people around you. Interview topic stakeholders, people who impact and are impacted by a topic. Other students, parents, teachers, librarians, and professionals in the field possess both research information and a wealth of creative ideas and opinions.

Contacting people is an excellent way to compile a variety of ideas.

- Researchers
- Professionals
- Decision-makers
- General public

Media – Watch and listen to the things around you - videos, movies, TV shows, commercials, radio shows, podcasts, etc., to gather valuable information on a topic. Look for nonfiction as well as fiction.

- Newsmagazine shows – NZ Story, 60 Minutes, 20/20, Frontline, Panorama

Organize Information

After collecting a large volume of information, the organization process helps one to make sense of all the ideas. It also serves as a useful way to help one remember new knowledge. Similar items may be grouped together. Or consider pairing competing ideas. One of the best ways to organize information is to categorize it. As you organize ideas new questions may arise or underrepresented concepts may emerge. Identify new resources to help fill in these gaps.

Compare Ideas

Think about and discuss the reliability of the information gathered. Are you gathering the information with any kind of personal bias about the topic? Are sources of information about the topic biased in any way? In order to know what to trust, it's important to consider the source and slant of the information being gathered. When examining resources, discriminate between those with hard facts and those that offer only biased opinions. While both types of information can be useful, keep in mind that fact and opinion are not necessarily interchangeable.

- Who is presenting the argument? Do they have a personal interest?
- Who has endorsed or requested the information?
- Are all opinions represented?

Consider "What If?"

Understanding the present allows students to move forward in identifying future images. Future images can be structured in many ways – possible, probable, preferable, and unfavorable. With the knowledge gained from your research, consider what the future might look like.

- What do you want the future to look like?
- What do you hope does not happen?
- What happens if a likely advancement occurs? What if it doesn't?
- What would an unexpected future look like?

Categories of Knowledge

Organizing information helps make sense of the knowledge gained, to see how it all fits together. The goal of categorizing is to highlight connections between various pieces of information. Several types of category lists exist. You might pick one of the following ways to generate a list of people to contact for interviews. Another might help you identify common themes among the research you have collected. Categories are useful in understanding the information you gather.

Categories prepared for a specific subject

A Concept Map is beneficial in organizing information. Issues relating to the topic are organized under the topic with like items recorded together. A Concept Map example (Futures Wheel) is located in the Appendix.

The FPS Category List

Almost any issue will fit into at least one of the categories on the FPS Category List provided on the next page. The FPS Category List usually serves as a sufficient starting point for identifying categories for any topic. Keep in mind, however, not every topic has information related to every category on this list.

Categories you generate on your own

You may decide to generate your own category list by generating a sufficient number of categories to classify the information. Are there consistent subsets of a topic that emerge from your research? Do not divide the information into so many parts that the category list becomes a useless form of classification.

Categories that are generic systems of classification

When categories are not emerging easily, turn to some “tried and true” systems of classification. “Animal, Vegetable, Mineral” is an example of a generic system of classification. “Causes, Effects” is another. “Physical, Mental, Spiritual” is a third. You may want to make a list of other generic systems of classification you could use if more specific systems do not cause trends in the information to emerge.

FPS Category List

Arts & Aesthetics



Basic Needs



Business & Commerce



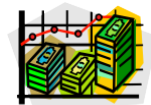
Communication



Defense



Economics



Education



Environment



Ethics & Religion



Government & Politics



Law & Justice



Miscellaneous



Physical Health



Psychological Health



Recreation



Social Relationships



Technology



Transportation



Tools for Generating

Generating tools are used to create new and unique ideas. Although they are often used in creating challenges and solution ideas during the problem solving process, these tools are useful when researching a topic. The most commonly known generating tool is brainstorming and its variations. As you read articles in *Readings, Research, and Resources*, use these tools to help you generate ideas to examine a wide range of ideas.

Generating Guidelines

When generating ideas, it is important to keep four guidelines in mind:

- **No Evaluation** should be given while generating ideas. Both criticism and praise are ruled out. Evaluation of ideas comes at a later time.
- **Quantity** is important. The larger the number of ideas, the greater the chance of reaching the best ideas!
- **Hitchhiking** is encouraged. Combining and improving ideas leads to great possibilities. When generating ideas, the sum is definitely greater than its individual parts.
- **Wild and Crazy** ideas can be very productive. Offbeat and silly ideas may trigger practical breakthroughs.

Ladder of Abstraction

When considering a concern or challenge, this tool is used to broaden or narrow the search for possibilities and new options. Broader or more abstract ideas emerge as you state your concern at the bottom of the ladder and work up the ladder, asking “why;” narrower or more specific options emerge as you work down the ladder, asking “how” you will address your concern.

Morphological Matrix

Using a chart with 4 columns and 6 rows, team members identify four major aspects (for example - people, setting, obstacle, goal) of the topic and place across the top row (one per column). Next ten specific topic related elements of each heading are listed in the columns. Random combinations are then formed to create new and interesting possibilities.

SCAMPER

This tool is used to change the attributes of an idea by: **S**ubstituting, **C**ombining, **A**dapting/**A**dding/**A**ltering, **M**inifying/**M**agnifying, **P**utting to other uses, **E**liminating/**E**laborating, **R**eversing/**R**earranging/**R**educing.

Silent Brainwriting

Each team member has a sheet of paper with 3 columns and 4 rows (12 boxes). Each person generates three ideas related to the topic, writing one idea in each of the boxes in the first row. Next, the sheets are passed around the group so the ideas can be read and new ideas are added, row by row, until all sheets are filled and all ideas have been read.

Tools for Focusing

Focusing tools are used to evaluate, compare, categorize, and highlight ideas. Simply gathering a large volume of information is not helpful, if you are not able to analyze it and focus on central concepts.

Focusing Guidelines

Focusing tools aid in selecting an idea that is workable, relevant, and unique. The following guidelines will help you focus:

- **Use affirmative judgment** to be thorough but positive when analyzing, refining, or choosing possibilities.
- **Follow a plan** and use the tools that assist in focusing.
- **Keep an eye on the goal** to focus on what is wanted and needed in order to accomplish the goal.
- **Stay open to all ideas** that might be workable. Look for new and unusual possibilities.

Identifying Hits

Read through your generated ideas and identify those which are on target for your goal. Develop your “hits” into complete ideas.

Hot Spots

Identify clusters of ideas that share common elements. Discuss how the ideas are similar. How are they different? Which will be most useful for your needs?

Advantages, Limitations (to overcome), Unique Potentials (ALoU)

Consider the advantages of each idea and the limitations you will need to overcome when dealing with the topic. Look for unique potentials one idea may have as compared to another.

Sequencing

Arrange options or possibilities in logical order. One example is time frame for completion (short range, medium range, long range). This is especially useful in developing an Action Plan.

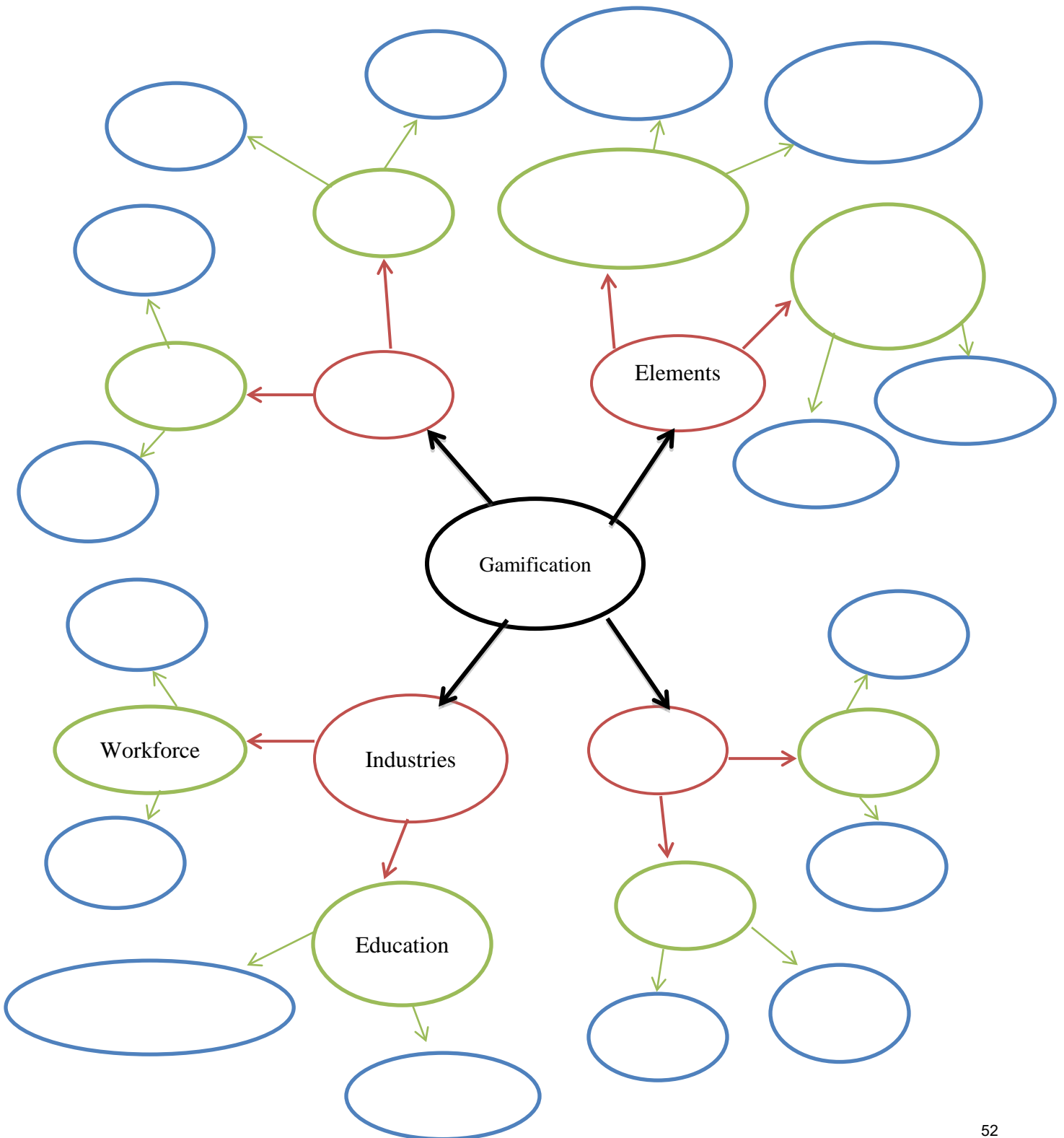
Paired Comparison Analysis (PCA)

When considering multiple possibilities, compare one possibility against another idea, one pair at a time, until all possible pairs have been analyzed. (Comparing A, B and C: A and B would be compared, then A and C, and finally, B and C.) As the favorite option is determined in the pair, a rank of 1, 2, or 3 is assigned according to degree of importance.

The Appendix contains examples of generating and focusing tools applied to the current topics. More resources can be found at www.creativelearning.com.

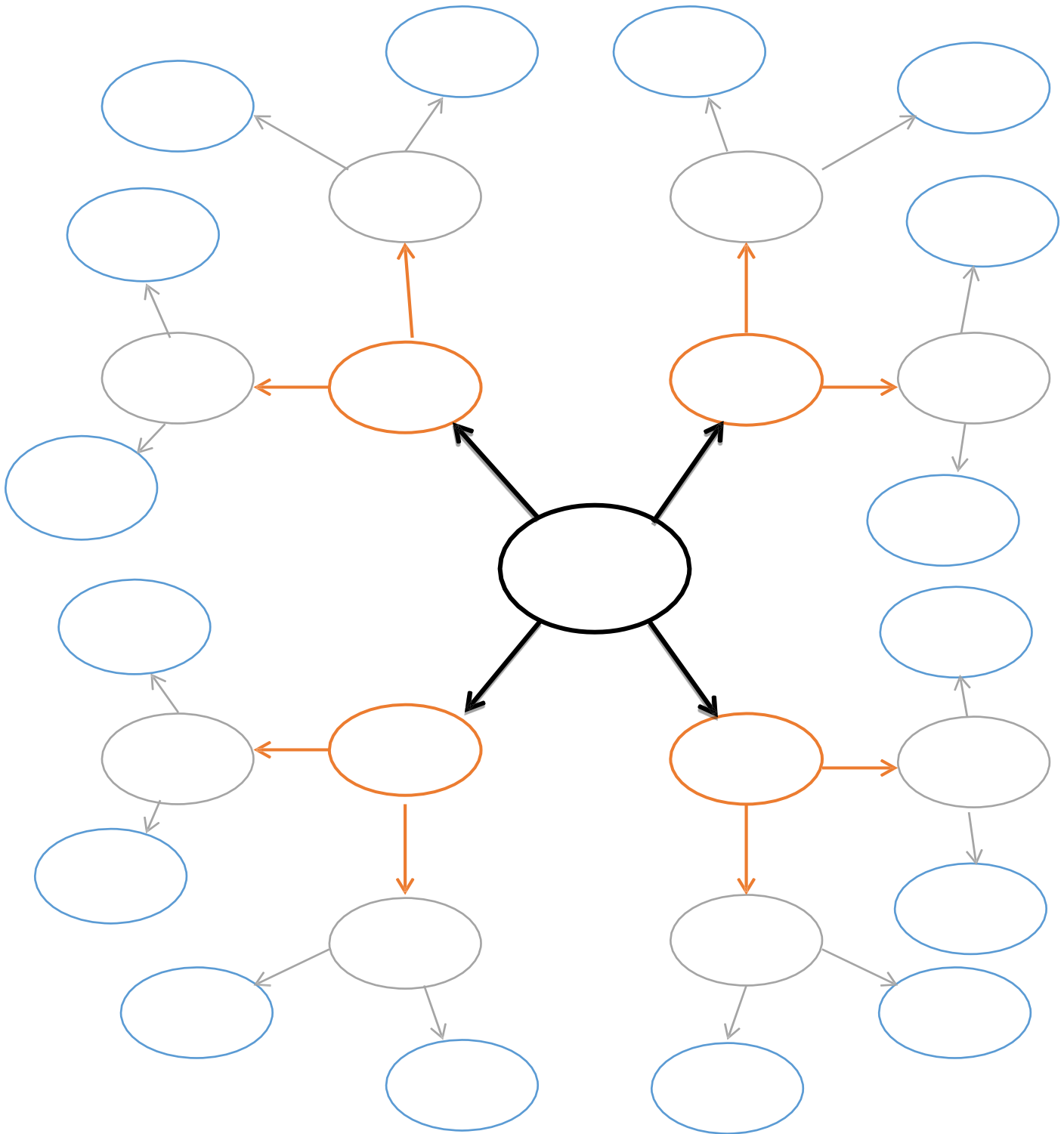
FUTURES WHEEL

A Futures Wheel is a tool that allows you to predict future events. Using the knowledge you have of the current situation, consider positive and negative results of an idea, event or trend. The starting idea is in the center of the page in the black circle. Fill in the red circles with first-order effects that could result from the starting idea. For each first-order effect identify two second-order effects (green circles). Repeat for the second-order effects to identify third-order effects (blue circles). After completing the Futures Wheel discuss which ideas on your wheel could be challenges and others could be solutions.



FUTURES WHEEL

A Futures Wheel is a tool that allows you to predict future events. Using the knowledge you have of the current situation, consider positive and negative results of an idea, event or trend. The starting idea is in the center of the page in the black circle. Fill in the orange circles with first-order effects that could result from the starting idea. For each first-order effect identify two second-order effects (gray circles). Repeat for the second-order effects to identify third-order effects (blue circles). After completing the Futures Wheel discuss which ideas on your wheel could be challenges and others could be solutions.



JUNE 7, 2027: Five thousand people were on hand yesterday for the grand opening of the Toledo PowerComp Mall. Featured speaker at the opening of the 100th U.S. competitopolis was PowerComp President Willa Gates. “We’re leading the U.S. into a new era of world competitiveness,” Gates told cheering supporters. “PowerComp asks: Where do you want to go tomorrow?”

When the first PowerComp Mall was built outside New York City in 2002, few people realized it’s true potential. Today, backed by many studies and millions of dollars from corporations, PowerComp is the fastest-growing U.S. Company and hottest “ticket” to improving America’s competitive edge.

PowerComp’s goal is to improve qualities and skills that are essential to “superior competitiveness.” “Self-confidence, perseverance, motivation risk-taking, ‘drive’, focus, hating to lose, and aggressiveness are qualities vital to success,” says Dr. Rhonda Simmons of the Michael Jordan Center in Chicago. Besides these and other qualities, PowerComp works on competitive skills such as visualization, teamwork, cooperation, negotiation, analysis of situations and opponents, and the ability to deal with pressure.

Each PowerComp Mall houses hundreds of “stores”. Each store works on a specific quality or skill of competitiveness. As activities, stores use both mental and physical competitive challenges, such as psi-debate, tetrachess, thinkbanx and techball. They use real-life and video simulations, virtual-reality technology, and hands-on experiences. Instructors serve as coaches, not only teaching specific skills, but urging quicker, better performance at each step along the way. Each session concludes with a test in the form of a competition to see who has learned the most and who is the best in the class in that session.

PowerComp’s users are limited to youth, 5 to 20 years old, and adults are permitted to observe only. “Study after study showed that working with adults on competitiveness was wasted effort,” says Dr. Rafe Goodall. “In fact, we go all the way back to the work of my great-aunt in observing that youthful play is by far the best method to learn survival skills.”

Schools and corporations support the Malls. Schools allow up to 7 hours a week of release time for students to use the Malls. Corporations provide major funding for the Malls, since they feel they are getting improved competitiveness in the workforce. Corporate support keeps user fees at \$2 per hour.

The most recent update to PowerComp Malls has brought an even higher-tech approach to “competitive conditioning.” On a user’s first and every tenth visit, a half-hour competitive analysis is performed. An NCG-scan looks at the neurological, chemical and genetic factors in the user’s competitive make-up. An interactive simulation provides data on the user’s emotional and intellectual competitiveness. An artificial-intelligence system then creates or updates the user’s “ideal competitive workout”.

What is PowerComp’s success in improving America’s competitive edge? To date, most information comes from individual success stories. True studies of the Mall’s long-term effects are just starting to be released. Most data show there has been a marked improvement in “competitive edge,” both of students in school and of the U.S. in the global economy. Studies on PowerComp’s effects on such things as creativity, empathy/compassion, and “personal balance” have yet to be completed.

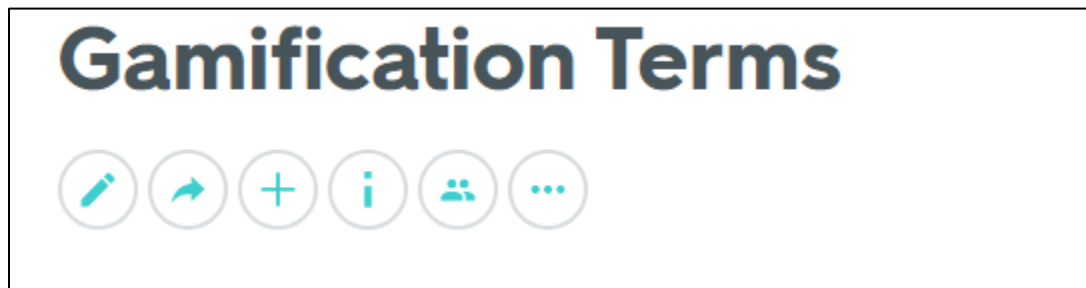
Brainstorm the problems and challenges presented by PowerComp Malls. Then complete the rest of the Future Problem Solving Process to meet a problem or challenge of this futuristic outlook on competition.

Utilizing Quizlet



You can use Quizlet with or without creating a Quizlet account. There is also a Quizlet mobile app that you can download from your mobile app store.

When you follow to the links provided in the packet and enter the password you will see a screen with a header (as the picture shows).



The icons shown here allow you to do different things.



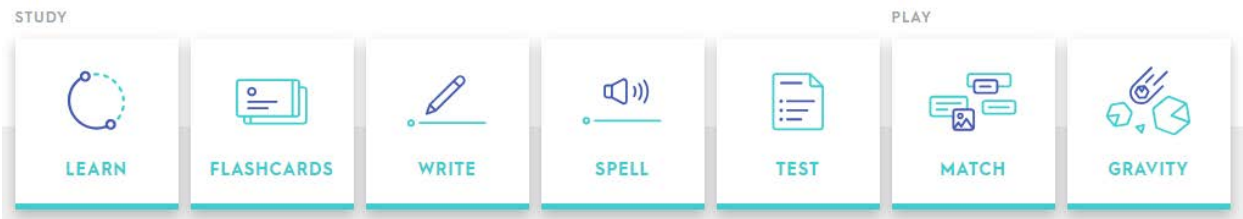
These buttons allow you to copy the set, if you have your own Quizlet account. Share the set, which should only be shared to your students. Or get information about the set.



If you hover over this button you will get options such as; scores, print, combine, export, and embed.

- The “scores” option would allow you to track your scores on games, if you were in your own Quizlet account.
- The “print” option allows you to print the set in many different formats, including printing them as flashcards on your own printer.
- The “combine” option will allow you to combine sets into 1 large group.
- The “export” option will allow you to export the set to a word file.
- The “embed” option will allow you to embed the set on your own website, but should not be used unless that website is password protected and for your students only, as it would violate the copyright if they were made accessible to anyone.

The next row of icons on the screen look like this.



These are divided into two parts; study and play.

In the study section you see icons for learn, flashcards, write, spell, and test.

- The “Learn” option will give students short quizzes using some questions. The more they answer correctly the more points they receive.
- The “Flashcards” option allows students to flip through the cards as flashcards and quiz themselves on the questions and answers.
- The “Write” option will allow your student to type in the answers to the questions presented. (To set this up, click on options on the bottom left and in the pop-up window change “Answer With” to “Definition”)
- The “Spell” option reads the question while displaying the answer, and allows students to type what they hear.
- The “Test” option will test the student on their knowledge. (To set this up, click on options on the bottom left and in the pop up window, only check “Written” in the question type section and set the number of questions you wish to be tested)

In the Play section you have the match and gravity options.

- The “Match” option randomly selects about 5 questions and asks students to match up the question with the proper answer by moving the items on the screen.
- The “Gravity” option lets student race against the clock to answer the questions as they fall like asteroids. Each correct answer gives you points and causes the asteroid to disappear, each incorrect answer deducts points and lets you keep answering until you get it correct, if you fail to answer before the asteroid falls the game will prompt you with the correct answer and no points are awarded.

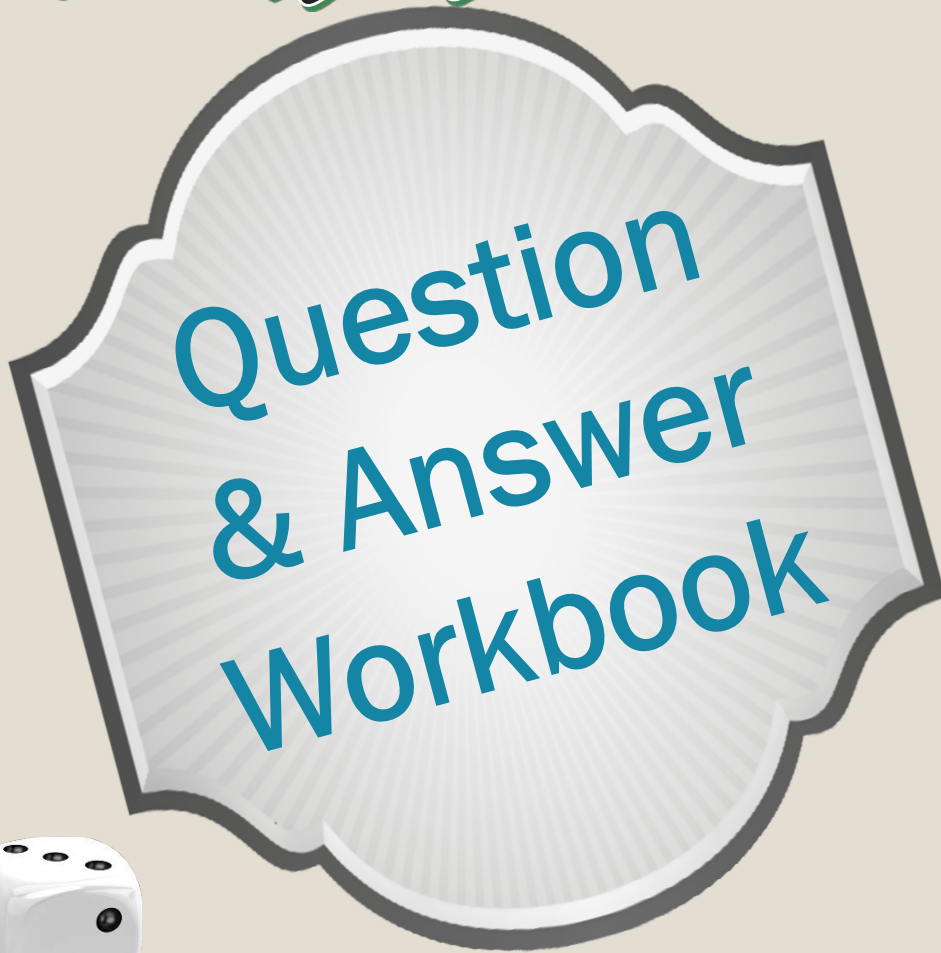


START



2019-20

Qualifying Problem



GAMIFICATION

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www.fpspi.org

Online/Mobile App Interactive Study Feature

Gamification

This workbook and the accompanying interactive features allow you to use the Question and Answer publication in a variety of ways with your students. Pages can be used as worksheet, flashcards can be printed from the Quizlet system, and students can play games with the content provided.

QUIZLET ONLINE

1. Go to the link below.

True/False

https://quizlet.com/_6b11o0

Multiple Choice

https://quizlet.com/_6b132i

Fill-in the Blank

https://quizlet.com/_6b15ed

2. Use this password:
1920QPplm

MOBILE APP

1. Download the “Zappar” App from the app store.
2. Scan the code below.



3. Click on the type of question you want to study.
4. Use this password:
1920QPplm

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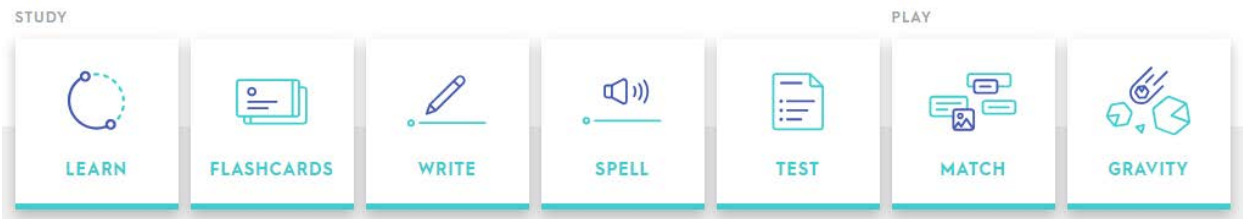
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These are divided into two parts; study and play.

In the study section you see icons for learn, flashcards, write, spell, and test.

- The “Learn” option will give students short quizzes using some questions. The more they answer correctly the more points they receive.
- The “Flashcards” option allows students to flip through the cards as flashcards and quiz themselves on the questions and answers.
- The “Write” option will allow your student to type in the answers to the questions presented. (To set this up, click on options on the bottom left and in the pop-up window change “Answer With” to “Definition”)
- The “Spell” option reads the question while displaying the answer, and allows students to type what they hear.
- The “Test” option will test the student on their knowledge. (To set this up, click on options on the bottom left and in the pop up window, only check “Written” in the question type section and set the number of questions you wish to be tested)

In the Play section you have the match and gravity options.

- The “Match” option randomly selects about 5 questions and asks students to match up the question with the proper answer by moving the items on the screen.
- The “Gravity” option lets student race against the clock to answer the questions as they fall like asteroids. Each correct answer gives you points and causes the asteroid to disappear, each incorrect answer deducts points and lets you keep answering until you get it correct, if you fail to answer before the asteroid falls the game will prompt you with the correct answer and no points are awarded.

True/False Section



2019-20 QP
Gamification

Gamification True/False Questions

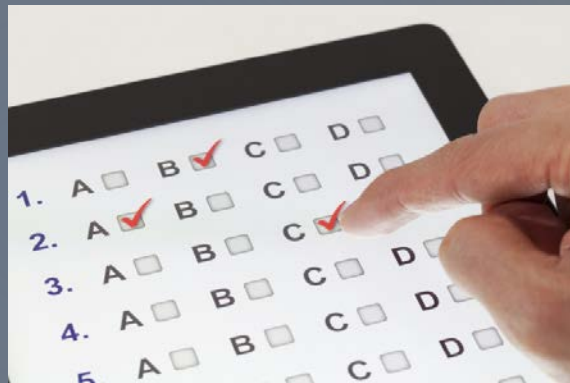
1. Among gamification user types, the "networker" most prefers earning badges.
2. Among gamification user types, the "enjoyer" most prefers fun, surprising inspiration.
3. A progress bar would be most appropriate for the gamification user known as a "networker."
4. It would be effective to design chat and mentoring mechanics for the "self-seeker" type of gamification user.
5. Psychologically, the user type known as the "farmer" feels the need to acquire collections and/or achievements.
6. Among their user needs, the "networker" craves privileges, not just contacts.
7. It would be recommended to design duel-based games focused on leaderboard recognition for an gamification audience of "enjoyers."
8. "Self-seeker" gamification users will likely need lots of game mechanics focused upon mentoring, community, and advice.
9. It is now customary to utilize manuals rather than short tutorials to orient users to a game.
10. All gamification users have the need for some form of feedback or user progress.
11. Time pressure helps users focus on the problem.
12. Time pressure does not tend to lead users into making different decisions than they might select otherwise.
13. Scarcity in gamification does not make something more desirable.
14. Users tend to value outcomes more when they make an investment of funds, effort, time, or emotion into a gamification concept.
15. Fixed rewards schedules are effective during on-boarding of users.
16. Giving rewards based upon leveling up or completing a certain degree of progress is otherwise known as issuing a time dependent reward.
17. Users have to be present to benefit from a time dependent reward.
18. Social pressure can cause motivation to decline when the expectations rise too high.
19. "Free Spirit" users perform best with mechanics and elements are focused upon challenges, certificates, quests, and boss battles.
20. Boss battles tend to signal the transition between two journeys.
21. Some gamification users need to feel part of something larger than themselves and see purpose to their activities in order to be engaged.

22. When a game allows users to gift items to others toward reaching their goals, the hope that the favor will be returned can be a strong motivator to help other users in need.
23. Users tend to want to be kept anonymous if given full freedom in a gamification setting.
24. It is advised by Gamified that disruptors be given a means of contributing innovation rather than be viewed as hackers.
25. Under some circumstances, Gamified advises allowing brief "no rules" events, especially when rules need to be thrown out before starting over again.
26. 3 out of 5 employees, on average, are looking for a new job.
27. Virtual rewards and "free" recognition are now seen as more important than concrete rewards of great expense.
28. Between 2007 and 2013, the number of employees expressing that their most appreciated recognition had no monetary value went up by 13%.
29. 30% of employees are more motivated by monetary rewards at work over non-monetary awards.
30. Gamification might give instant recognition to workers for saving on corporate travel expenses.
31. According to the employees of Fortune Magazine's 100 Best Companies to Work For, 81% of employees claim to be working within a fun environment.
32. By 2020, it is estimated that game-based learning will be used nearly 20% more often than eLearning in corporate trainings.
33. According to the Federation of American Scientists, serious games produce 20% more trust than other training methods.
34. According to the Federation of American Scientists, serious games increase the number of completed tasks during training by 300% compared to other traditional training.
35. According to the Federation of American Scientists, serious games increase retention by 90% over other forms of traditional training.
36. Traditional training methods tend to give more opportunities for corporate employees to apply what they have learned compared to serious games.
37. Corporate employees feel 20% more trust in training methods other than serious games.
38. ASTD Research has found that more corporate trainings use serious games over gamification.
39. By 2020, simulators will surpass game-based learning in corporate trainings.
40. By 2020, eLearning will surpass game-based learning in corporate trainings.
41. The biggest gamification market is expected to be found in Asia followed by Europe.
42. "Gamification," as a term, was coined by Nick Pelling.
43. Behavior that is driven by one's own personal satisfaction is known as extrinsic motivation.

44. Badges, levels, and leaderboards tend to improve attendance when paired with visual elements and storylines.
45. Introverts tend to feel stressed by the use of leaderboards.
46. Gamification that sets up competition-based environments to judge performance tends to reduce collaboration between employees.
47. Gamification has grown more popular in India as schools grow larger and larger class sizes.
48. For extrinsic motivation to be effective, players must feel as if they have something to love if their behaviors do not change.
49. Rewards systems are used with the primary goal of retaining customers.
50. It is not necessary to understand the problem or the audience in making an effective gamification solution.
51. Engaging customers can reduce customer loss or attrition by 63%.
52. Augmented reality games are holding the attention of users longer than more traditional marketing techniques.
53. Gamification has not yet been effective in motivating users to improve their health.
54. Effective gamification starts with strategy and then looks at customer motivation.
55. According to a 2015 Gallup poll, 87% of workers across the globe were unengaged.
56. According to a 2015 Gallup poll, employees in the United States were 35% more engaged than the global average.
57. Students who train with edugames retain 25% more knowledge than those who experience traditional training methods.
58. Students show a 14% increase in their skills acquisition when using edugames over traditional training methods.
59. Learning with edugames over traditional training methods has been seen to help students memorize facts with over 10% more effectiveness.
60. Games with intentional purpose beyond entertainment are known as serious games.
61. When educational content is delivered in small series, it is known as microlearning.
62. Users tend to prefer games that require them to make many different kinds of decisions.
63. Game users today are most motivated by earning badges and tokens.
64. It is important to have an understanding of human psychology in order to be effective in the gamification industry.
65. It is more effective to punish users for failures in a game than to reward positive behavior.
66. The concept of "gamification" emerged in the world of computer software in 2008.

67. Gamification is appropriate to use with serious and sensitive topics.
68. It is estimated that customer experience will soon outshine price or products as individuals select between brands.
69. Starbuck's points systems is an example of gamification.
70. In the last ten years, "gamification" made the short list for the Oxford Dictionary's Word of the Year.
71. Most businesses today are still wondering if gamification is worth a try.
72. Today, it is common to see educational curricula and games developed together.
73. The edugame industry is expected to rise above \$8 billion in value by 2022.
74. Humans are often motivated by concepts that seem irrelevant.
75. In recent years, Fortune Magazine declared gamification "over"
76. Well-designed games can give mental boosts that last months after the game is played.
77. Gamification is morphing into motivational design.
78. One of the authors of Gamification by Design argued that effective gamification practices is 50% technology and 50% psychology.
79. To be motivating, tasks or information must connect with personal values or goals.
80. The biggest downfalls in gamification is not understanding the problem and not understanding audience.
81. Badgeville's study determined that 91% of employees experiencing games-based motivation showed more productivity, awareness, and engagement at work.
82. According to Badgeville, only 41% of workers utilize games-based motivation in their jobs.
83. No matter what the goal is, most businesses or industries benefit from gamification.
84. There are approximately 183 million active gamers living in the United States.
85. Gamification can be used to monitor employee behaviors.
86. Gamification does not motivate employees to work harder in their jobs.
87. Gamification relies exclusively on the design of mobile apps.
88. Taking an online community and applying the elements of games to make the experience more enjoyable is an example of gamification.
89. Gamification tends to foster customer loyalty.
90. The rate of one's output or effectiveness of accomplishment is known as productivity.

Multiple Choice Section



**2019-20 QP
Gamification**

Gamification

Multiple Choice Questions

1. Which of the following is NOT a type of gamification user?
 - A. Farmer
 - B. Fast-Laner
 - C. Self-Seeker
 - D. Networker
2. Which of the following is NOT an example of a fixed reward schedules in action?
 - A. Awarding for completion of a first activity
 - B. Celebrating a birthday
 - C. Leveling up
 - D. Hitting a certain degree of progress
3. _____ surprise users with rewards just for being observant of their surroundings.
 - A. Easter eggs
 - B. Gold stars
 - C. Mystery bags
 - D. Treasure boxes
4. _____ of present-day employees are not engaged in their work.
 - A. 35%
 - B. 52%
 - C. 71%
 - D. 85%
5. _____ of workers express satisfaction with their job.
 - A. 19%
 - B. 37%
 - C. 48%
 - D. 67%
6. The _____ gamification user prefers game mechanics involving leaderboards.
 - A. "enjoyer"
 - B. "farmer"
 - C. "networker"
 - D. "self-seeker"

7. _____ of workers who see themselves as recognized meaningfully for their work will tend to surpass base job duties to do a task well.

- A. 20%
- B. 40%
- C. 58.50%
- D. 85.50%

8. If an employee does not feel recognized meaningfully for their work, _____ will choose to not go above their base duties to see that a job is done well.

- A. 20%
- B. 40%
- C. 58.50%
- D. 85.50%

9. Companies with highly engaged employees show _____ more productivity over five years.

- A. 13%
- B. 26%
- C. 39%
- D. 50%

10. Companies with highly engaged employees show _____ greater returns over five years for their shareholders.

- A. 13%
- B. 26%
- C. 39%
- D. 50%

11. _____ of employees claim that they feel more motivated by rewards that have no monetary value than those with monetary value.

- A. 40%
- B. 60%
- C. 70%
- D. 90%

12. Status and influence are most likely to appeal to the gamification user known as a/an _____.

- A. "enjoyer"
- B. "farmer"
- C. "networker"
- D. "self-seeker"

13. Which of the following is a player type strategy?

- A. Choosing game mechanics for each type of player
- B. Defining player demographics
- C. Identifying motivations of users
- D. All of the above

14. What is the best first step for running a successful gamification project?
- A. Assess objectives
 - B. Gather Intelligence.
 - C. Design a prototype
 - D. Determine player type strategies.
15. Finding a theme, building a prototype, testing the project with players, and creating specifications documents are all part of what element of running a successful gamification project?
- A. Assessing objectives
 - B. Defining target behaviors
 - C. Designing a prototype
 - D. Production
16. There was an expected _____ in gamification market growth in 2018.
- A. \$500 million
 - B. \$1.2 billion
 - C. \$5.5 billion
 - D. \$10 billion
17. According to ASTD Research, _____ of corporate workers prefer training involving video games overall traditional training.
- A. 17%
 - B. 33%
 - C. 53%
 - D. 79%
18. After witnessing their implementation, _____ of corporate workers would recommend gamification in corporate trainings.
- A. 21%
 - B. 45%
 - C. 58%
 - D. 99%
19. According to ASTD Research, _____ of corporate trainings utilize serious games.
- A. 10%
 - B. 20%
 - C. 30%
 - D. 40%
20. The _____ gamification user prefers the gamification style of a fortune wheel game.
- A. "enjoyer"
 - B. "farmer"
 - C. "networker"
 - D. "self-seeker"

21. It is estimated that video games will be used in trainings by 70% of companies by the year _____.
- A. 2020
 - B. 2023
 - C. 2027
 - D. 2032
22. Compared to other forms of training, the Federation of American Scientists notes that serious games increase _____.
- A. completion rates
 - B. retention
 - C. trust
 - D. all of the above
23. According to Webanywhere, _____ prefer a gamification strategy involving progressing to various levels of play.
- A. 12%
 - B. 30%
 - C. 62%
 - D. 89%
24. According to Webanywhere, _____ express being more motivated to learn when knowing a leaderboard is involved.
- A. 12%
 - B. 30%
 - C. 62%
 - D. 89%
25. According to Webanywhere, _____ desire content they can explore as well as multiple levels of difficulty in gamification.
- A. 29%
 - B. 47%
 - C. 65%
 - D. 82%
26. _____ of adults surveyed believe that involving a point system would increase their engagement.
- A. 12%
 - B. 30%
 - C. 62%
 - D. 89%
27. The term "gamification" was coined in _____.
- A. 1982
 - B. 1997
 - C. 2003
 - D. 2014

28. Rewards programs emerged in airlines, hotels, and car rental services in the _____.
- A. 1980s
 - B. 1990s
 - C. 2000s
 - D. 2010s
29. "The Game of Work" brought into the workplace the feedback loops previously found in _____.
- A. education
 - B. retail
 - C. sports
 - D. the film industry
30. S&H used a form of gamification in _____ when they sold green stamps to retailers for use as rewards for repeat customers.
- A. 1853
 - B. 1896
 - C. 1922
 - D. 1046
31. "Who Plays MUAs" (1996) by Richard Bartle divided players of video games into four types: explorers, achievers, killers, and _____.
- A. heroes
 - B. hiders
 - C. socializers
 - D. solvers
32. Progress bars in gamification will be most effectively used with _____ users.
- A. "enjoyer"
 - B. "farmer"
 - C. "networker"
 - D. "self-seeker"
33. Interactions viewed as benefitting both the brand and its customers fall under the concept of _____ marketing.
- A. experiential
 - B. good-will
 - C. two-way
 - D. hands-on
34. Which of the following is an element of game mechanics?
- A. badges
 - B. emotion
 - C. leaderboards
 - D. all of the above

35. The sense of being greatly involved in an activity is known as _____.
- A. achievement
 - B. competition
 - C. engagement
 - D. motivation
36. The process of providing orientation training to a new employee is called _____.
- A. immersing
 - B. level progressing
 - C. motivating
 - D. onboarding
37. Rooted in math, _____ studies what strategic interactions exist between players of competitive games.
- A. game design
 - B. game mechanics
 - C. game theory
 - D. microlearning
38. The state of being in short supply is known as _____.
- A. competition
 - B. loss aversion
 - C. retention
 - D. scarcity
39. Education gathered through electronic or internet media is best known as _____.
- A. gamifying
 - B. e-learning
 - C. game-based learning
 - D. immersive education
40. The ability to keep content learned in one's memory is known as _____.
- A. immersion
 - B. loyalty
 - C. productivity
 - D. retention
41. According to the Huffington Post, adolescents tend to use their devices _____ hours per day.
- A. three
 - B. five
 - C. seven
 - D. nine

42. To be successful, gamification strategies in the corporate world must align _____.
- A. culture and values
 - B. culture and creativity
 - C. creativity and strategy
 - D. strategy and culture
43. Which gamification approach is most effective?
- A. creating a lottery system that awards just a few employees with very expensive prizes
 - B. drawing attention to failures to help employees improve
 - C. rewarding accomplishment for all employees
 - D. emphasizing intrinsic motivation
44. Perhaps even more than mechanics and game elements, the future of effective gamification lies in creators understanding _____.
- A. addiction
 - B. competition
 - C. motivation
 - D. productivity
45. To want to take part after a long work day, players need easy-to-understand _____.
- A. deadlines
 - B. rules
 - C. goals and challenges
 - D. all of the above
46. Pairing gameplay with defined learning objectives is known as _____ learning.
- A. experiential
 - B. games-based
 - C. immersive
 - D. incentivized
47. Devices used to attract sales or attention are known as _____.
- A. badges
 - B. gimmicks
 - C. onboarding
 - D. motivations
48. Effective gamification involves a _____ goal.
- A. complex
 - B. creative
 - C. flexible
 - D. measurable

49. To have long-term appeal, gamification must involve _____.
- A. complexity
 - B. exclusivity
 - C. randomness
 - D. both B and C
50. _____ led to the prediction that gamification would meet its end by 2014.
- A. Lack of user appeal
 - B. Lack of clarity
 - C. Too much complexity
 - D. All of the above
51. As of 2015, _____ of Global 1000 organizations were utilizing gamification.
- A. 25%
 - B. 40%
 - C. 55%
 - D. 70%
52. Worldwide, the gamification market grew from _____ in 2012 to over \$2 billion in 2016.
- A. \$13 million
 - B. \$78 million
 - C. \$242 million
 - D. \$476 million
53. 70% of efforts to transform business fail because of lack of _____.
- A. creativity
 - B. engagement
 - C. financial investment
 - D. flexibility
54. _____ of leading technology experts anticipate that gamification will play a vital role in the market still in 2020.
- A. 29%
 - B. 53%
 - C. 72%
 - D. 89%
55. In the workplace, gamification works best when accomplishment is _____.
- A. a source of competition
 - B. easily incentivized
 - C. easily measured
 - D. in need of boosting

56. Experts in education warn that a student's desire to learn could be harmed by too much _____.
- A. competition
 - B. extrinsic motivation
 - C. screen time
 - D. social sharing
57. Computer-based education games have been prevalent since _____.
- A. the 1970s
 - B. the 1980s
 - C. the 1990s
 - D. the 2000s
58. Edugames too focused on _____ often fail to motivate their students.
- A. competition
 - B. incentives
 - C. leaderboards
 - D. learning objectives
59. Gamification should be avoided if used for the sake of _____.
- A. creating healthy competition
 - B. engaging employees
 - C. incentivizing productivity
 - D. introducing something new
60. Gamification injects a/an _____ angle to learning.
- A. confusing
 - B. light-hearted
 - C. one-size-fits-all
 - D. patient



Fill-in Section



Fill in the

Blank

2019-20 QP
Gamification

Gamification

Fill-in the Blank Questions

1. The type of gamification user known as a/an " _____ " needs surprise, fun, and inspiration, prefers game mechanics tied to immediate success or luck, and tends to like games such as a fortune wheel.
2. According to Gamefied UK, even the most experienced users can benefit from "just in time" _____ to help them proceed to the next step when stuck.
3. When users are able to strike a balance between challenge and skill, this tends to lead users to experience a state of _____.
4. Issuing _____ rewards aims to keep users on their toes.
5. Giving rewards to users based upon defined progress is known as a _____ reward schedule.
6. Rewards made available at a particular time period for a particular time period are known as time _____ rewards.
7. The fear of losing one's status, achievements, etc. in a game is known as loss _____.
8. _____ serve as physical symbols of achievement as a display of status.
9. _____ link together various challenges to produce cumulative feelings of mastery.
10. Goal _____ allow users to see where they need to progress next and where they've already been.
11. An epic challenge that consolidates all content thus far learned is known as a _____ battle.
12. _____ tends to bring out the worst in people in gamification settings.
13. _____ change can be brought about when combining spaced repetition with repeated retrieval of information.
14. The University of Essex found that _____% of users seek social connections in gaming.
15. According to M2 Research, a 100% to _____% rise in engagement can result from the inclusion of gamification.
16. Games designed for education are known as _____.
17. Integrating the mechanics of games into non-game experiences is called _____.
18. Playing a game with good design can give someone at the age of 60 years the intellectual abilities of someone _____ years in age.
19. According to Alex Gault, a company's social media presence can be enhanced by including _____ in branded games.
20. _____ of learners show more productivity with the inclusion of gamification.

21. 61% of senior executives have been surveyed to utilize game _____ during the work day on a daily basis.
22. An increasing number of critics consider gamification to be an unsuccessful _____.
23. In games, individual users must feel they are in control of their _____.
24. Gamers often need to compare their _____ with their peers'.
25. Gamification seeks to takes common tasks and make them more engaging and _____.
26. A gamification system that assesses accomplishments of users by adding up what points are assigned to them is known as a _____ system.
27. The general process of promoting the sale of services or products is known as _____.
28. Designing games or content to be compatible with smaller screens is making them _____-friendly.
29. Games relying upon level progression requires users to complete a series of _____ before moving ahead in the game.
30. To engage in hefty amounts of time for a specific gaming activity is known as _____.



Gamification

True/False Answers

- | | | | |
|-----------|-----------|-----------|-----------|
| 1. True | 24. True | 47. True | 70. True |
| 2. True | 25. True | 48. True | 71. False |
| 3. False | 26. False | 49. True | 72. True |
| 4. False | 27. True | 50. False | 73. True |
| 5. True | 28. True | 51. True | 74. False |
| 6. True | 29. True | 52. True | 75. True |
| 7. False | 30. True | 53. False | 76. True |
| 8. False | 31. True | 54. False | 77. True |
| 9. False | 32. True | 55. True | 78. False |
| 10. True | 33. True | 56. False | 79. True |
| 11. True | 34. True | 57. False | 80. True |
| 12. False | 35. True | 58. True | 81. True |
| 13. False | 36. False | 59. True | 82. False |
| 14. True | 37. False | 60. True | 83. True |
| 15. True | 38. False | 61. True | 84. True |
| 16. False | 39. False | 62. False | 85. True |
| 17. True | 40. False | 63. False | 86. False |
| 18. True | 41. False | 64. True | 87. False |
| 19. False | 42. True | 65. False | 88. True |
| 20. True | 43. False | 66. True | 89. True |
| 21. True | 44. True | 67. False | 90. True |
| 22. True | 45. True | 68. True | |
| 23. True | 46. True | 69. True | |

Gamification

Multiple Choice Answers

- | | | |
|------------------------------|---------------------------|---|
| 1. B. Fast-Laner | 22. D. all of the above | 43. C. rewarding accomplishment for all employees |
| 2. B. Celebrating a birthday | 23. B. 30% | 44. C. motivation |
| 3. A. Easter eggs | 24. C. 62% | 45. D. all of the above |
| 4. C. 71% | 25. D. 82% | 46. B. games-based |
| 5. A. 19% | 26. D. 89% | 47. B. gimmicks |
| 6. D. "self-seeker" | 27. C. 2003 | 48. D. measurable |
| 7. D. 85.5% | 28. A. 1980s | 49. D. both B and C |
| 8. B. 40% | 29. C. sports | 50. D. All of the above |
| 9. B. 26% | 30. B. 1896 | 51. B. 40% |
| 10. A. 13% | 31. C. socializers | 52. C. \$242 million |
| 11. C. 70% | 32. B. "farmer" | 53. B. engagement |
| 12. D. "self-seeker" | 33. A. experiential | 54. B. 53% |
| 13. D. All of the above | 34. D. all of the above | 55. C. easily measured |
| 14. A. Assess objectives. | 35. C. engagement | 56. B. extrinsic motivation |
| 15. C. Designing a prototype | 36. D. onboarding | 57. B. the 1980s |
| 16. C. \$5.5 billion | 37. C. game theory | 58. D. learning objectives |
| 17. C. 53% | 38. D. scarcity | 59. D. introducing something new |
| 18. D. 99% | 39. B. e-learning | 60. B. light-hearted |
| 19. B. 20% | 40. D. retention | |
| 20. A. "enjoyer" | 41. D. nine | |
| 21. A. 2020 | 42. A. culture and values | |

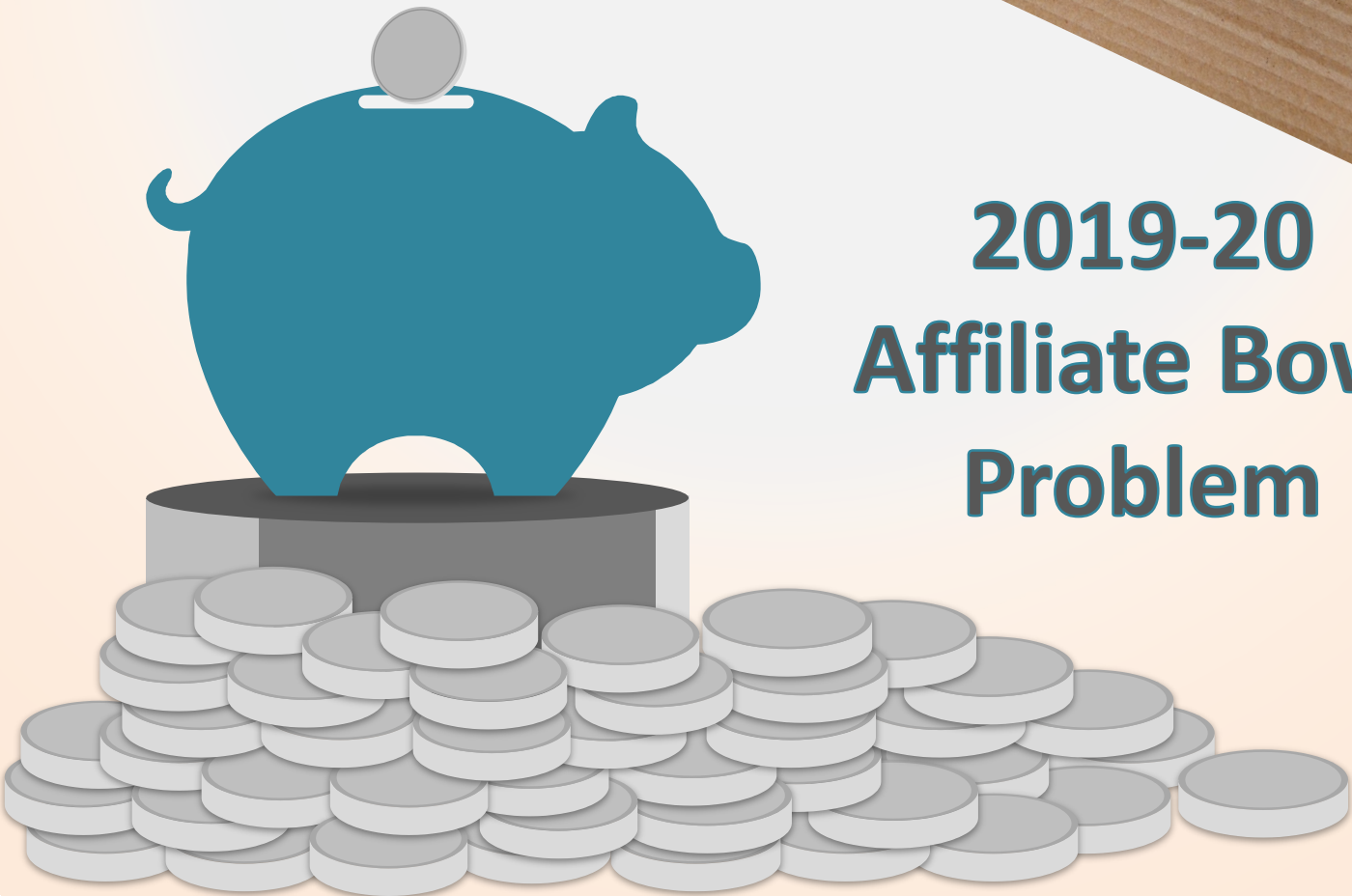
Gamification

Fill-in the Blank Answers

1. enjoyer
2. signposts
3. flow
4. random
5. fixed
6. dependent
7. aversion
8. Certificates
9. Quests
10. maps
11. boss
12. Anonymity
13. Behavioral
14. 80
15. 150
16. edugames
17. gamification
18. 35
19. social sharing
20. 80
21. breaks
22. fad
23. destinies
24. accomplishments
25. fun
26. point-based
27. marketing
28. mobile
29. actions
30. binging



Readings, Research, & Resources



**2019-20
Affiliate Bowl
Problem**

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Future Problem Solving Program International (FPSPI)

We hope you find this edition of *Readings, Research, and Resources* to be a valuable resource as your students gather knowledge about *Living in Poverty*.

This publication should be used as a starting point for research. By the time it is printed and distributed, some of the information may change or become out-of-date. Keep in mind, however, that observing and studying the changes that take place in a given subject area over a few months or years can be an incredible asset to problem solvers who work with scenarios set in the future.

A concerted effort was made to find recent articles from as many different perspectives as possible. While FPSPI attempts to present a balance in the range of opinions, some sides of an issue are often more represented than others. This does not mean that FPSPI supports that position. FPSPI supports no position. Information contained in this publication is a summary of the original article. It is up to the reader to determine which “facts” to accept.

FPSPI encourages coaches to preview the article summaries and links to determine whether all information is appropriate for their students. Efforts were made to minimize the sensitivity of the summaries’ contents; however, different standards of acceptability apply to each individual student, coach, and community. Please use your discretion with these materials.

At the end of this publication you will find an appendix containing a topic-related Future Scene from past years and a “Use the Tools” section dedicated to helping problem solvers apply creative thinking tools to their research.

About Topic Selection:

FPS topics are determined with the input of students, coaches, researchers, futurists and many others. FPSPI participants are encouraged to submit topics for consideration. Annually, the FPS community votes for their top five topics from three general themes: Science/Technology, Social/Political, and Business/Economics. The results of the voting determine which topics FPSPI uses each year. Information on topic submission and voting can be found at www.fpspi.org/topic-submission.

Acknowledgments:

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Chapter Authors:	Emily Miller and Kylo Hart
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About Themes & Concepts and Internet Resources:

Themes and Concepts serve as content organizers for each topic of study. Common themes are obvious in most subject matters or topics. Concepts represent mental images, constructs, or word pictures that help people to arrange and classify fragmented and isolated facts and information. Themes and concepts assist in organizing a lot of information into manageable threads or ideas, providing a complete picture or understanding of the subject.

Coaches may wish for younger students to utilize the provided Themes and Concepts for each topic as a reference and starting point in their research. Coaches of older and/or more advanced problem solvers may encourage students to take the research and develop their own Themes & Concepts for each topic.

Highly engaging curricular lessons to expand research, teach the problem solving process and explore the current topics are available. The [Topic Activity Units](#) are excellent resources for teachers and coaches alike, for both use in the classroom and after school. They incorporate best practices and provide step by step lesson plans for research based independent and collaborative work.

Readings, Research, and Resources includes specific web site addresses; however, site changes occur continuously. Some of the articles cited in this publication may be found by going directly to the source of the article; however, some articles can only be accessed by using an on-line database such as EBSCO or Cengage. Digital resources are checked at the time of publishing to ensure that the links are active, however, by the time you have purchased the publication these links may have changed.

Caution: We strongly advise coaches to review their educational organization's policies on appropriate content, and to screen any materials before making them available to students.

About Zappar:

Some sections feature an augmented reality (AR) code called a zap code. These codes, when scanned using the Zappar app, will give users an AR experience that provides more information about the publication and the topics inside.

You can download the app from your app store on iPhone and Android devices. Go to your app store and search for "Zappar", once you download it you can scan the codes found throughout this publication.



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Coaches should review these lessons before presenting them to students. There could be students who work through these lessons that are experiencing Poverty. Coaches should be aware of this potential issue.

Terms & Definitions

The Terms and Definitions are also available online with interactive games at

https://quizlet.com/_6lsmfi

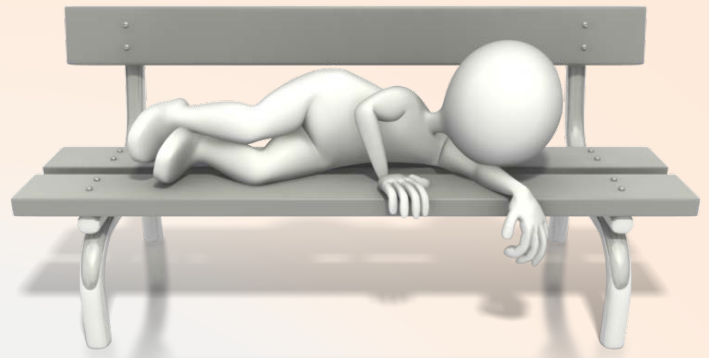
using the password:
2019ABtd1

You may also access by scanning the Zap Code below:



The Quizlet password is part of the copyright of this publication. Only share this password with the students of a single coach.

- **absolute poverty:** the state of lacking the minimum amount of income required to meet one or more essential living needs over an extended time period
- **anxiety:** feelings of worry and/or fear
- **charity:** an organization that is established to raise funds and provide help to those in need
- **child labor:** the use of children as workers, often in illegal or inhumane ways
- **chronic stress:** ongoing stress that affects individuals over a long period of time
- **depression:** a serious medical condition that causes a person to feel extreme sadness or hopelessness
- **deprivation:** a lack of something considered to be a necessity
- **developing country:** a poor agricultural country that is working to become more advanced
- **disposable income:** income remaining after necessary expenses have been paid that is thereby available to be spent in desired ways
- **donate:** to provide food, money, or another valuable item to an individual or organization
- **economic mobility:** the ability to improve one's overall economic status
- **eradicate:** to eliminate entirely
- **exhaustion:** the state of experiencing extreme physical or mental fatigue



- **extreme poverty:** the state of severely lacking essential human needs including adequate food, shelter, sanitation, and safe drinking water
- **food insecurity:** the state of lacking reliable access to sufficient amounts of affordable and nutritious food items
- **global health:** health and well-being throughout the world
- **global inequality:** inequality between people living in different countries
- **health:** the condition of being well and disease-free
- **healthcare:** the field that provides medical care for individuals and communities
- **homelessness:** the state of having no physical home
- **hunger:** a craving or uncomfortable feeling caused by lack of food
- **illiteracy:** the inability to read or write
- **income:** money received from work or investments
- **inequality:** the state of lacking equal rights, status, or opportunities
- **infectious disease:** a disorder caused by a bacterium, fungus, parasite, virus, or other organism
- **life expectancy:** the average number of years that an individual may expect to live (varies by demographic)



- **malnourished:** not having enough food to ensure proper health and development
- **minimum wage:** the lowest wage for workers that is permitted by law
- **poverty:** the scarcity of money or material possessions
- **poverty cycle:** the perpetuation of one's poverty unless some sort of meaningful outside intervention occurs
- **poverty line:** the minimum level of income required to provide for the necessities of life
- **poverty trap:** an economic term used to describe situations in which individuals are stuck in deprivation and do not have the ability to escape their situation on their own
- **relative poverty:** the assessment of one's wealth in relation to other individuals in the same population
- **rural:** pertaining to the countryside
- **sanitation:** the processes involved in providing clean drinking water and effective sewage disposal
- **scarcity:** the state of being in short supply
- **stigma:** a mark of disgrace associated with a specific circumstance or way of being
- **street children:** children who live on the streets as a result of poverty and/or homelessness



- **stress:** mental or emotional tension resulting from unfavorable or demanding circumstances
- **subsidized lunch:** a meal for which part of the total cost is paid for by an organization or activity
- **suburb:** an outlying district of a city, especially a residential one
- **Sustainable Development Goals (SDGs):** a set of 17 global goals established by the United Nations in 2015
- **unemployment:** the state of not having a job
- **universal basic income (UBI):** a concept that provides all citizens of a specific area or country with a set sum of money on a regular basis to provide for their essential needs
- **urban:** pertaining to a city
- **wealthy:** rich in assets
- **welfare:** an effort intended to provide for the basic physical and material well-being of people in need
- **well-being:** the state of being happy and healthy
- **working poor:** the working people whose incomes fall below an established poverty line
- **World Poverty Clock:** a tool that provides real-time estimates of ongoing progress in the fight against global poverty for most of the countries in the world



Topic Overview



T O Poverty is defined in many ways. Experts see poverty as the state of being extremely poor. Another definition says that poverty occurs when people cannot meet the basic needs of life such as food, clothing, shelter, education, and healthcare.

p e Poverty can be viewed both in an absolute way and in relation to others. Some people describe poverty as being unable to buy necessary things or having an inability to maintain minimal acceptable living standards.

C V The World Bank Organization (an international financial institution that provides loans to countries of the world for capital projects) emphasizes that poverty is hunger, lack of shelter, being sick and not being able to see a doctor. Poverty is not having access to good schools, and/or not having a job.

W No matter how poverty is defined, it is a multifaceted phenomenon with economic, political, and social elements. It is also common throughout the world. The true state of global poverty is hard to estimate. It is often inaccurately measured using arbitrary cut-offs and criteria. While poverty was previously believed to be a natural occurrence that would always exist, it is now increasingly viewed as a social problem that can be overcome through public action and social protections.

Poverty involves much more than money, possessions, or access to resources. The United Nations regards poverty as a violation of human dignity. Living in such a state simultaneously leads to powerlessness and exclusion. It also results in a lack of voice for many people regarding important matters in their communities.



Another reality is that the cycle of poverty negatively affects people both psychologically and physiologically. Individuals living with such struggles constantly experience various forms of stress, placing them at greater risk of depression and mental other disorders. Children who grow up in poverty often continue to struggle into adulthood. Those who grow up in low-income families even tend to have low incomes themselves later in life.

Reducing poverty is a global priority. The most recent international goal is to eliminate extreme poverty by the year 2030. While significant strides are being made, a variety of setbacks throughout the world make it difficult to achieve that goal.

An example of the difficulties in reaching international goals is that, in 2018, Nigeria replaced India as the country with the largest number of people living in extreme poverty. The good news, however, is that India is decreasing its number of extremely poor at a rate of nearly 45 people per minute. In contrast, the number of extremely poor people living in Nigeria is growing at a rate of six people per minute. Additionally, while Australia is one of the wealthiest countries in the world, the number of children living in poverty has started growing after three decades of decline. In 2017, poverty rates continued to increase in 30 countries across the globe. Meanwhile, the center of global poverty has shifted from Asia to Africa.

What can be done to reduce the poverty that remains in our world? One approach involves increasing government aid to people who are most in need. Another involves addressing income inequality to ensure that these individuals have adequate opportunities. Providing a quality education to all must become a greater priority, as well as ensuring that workers are able to find decent-paying jobs. We also need to challenge our ways of thinking. The widely held belief that individuals who work hard will ultimately succeed is not always true. It is quite common for many individuals who are working hard to still find themselves living in poverty. Another promising approach is to give vouchers to low-income individuals and families; such vouchers help them move out of poor neighborhoods into areas with better housing, schools, and employment opportunities.

Discussion Questions



Pre-Research

1. Do you feel that poverty is a serious problem in your own community? Why or why not?
2. Poverty can be defined in different ways. What is your personal definition of poverty?
3. Some people believe that extreme poverty will never be eliminated while others are hopeful it will be eradicated over the course of the next decade. What is your personal view about this, and why do you feel the way that you do?
4. Based on what you know about the realities of poverty, in what ways are children negatively affected by growing up in poverty?

Post-Research

1. What do you know about poverty, and from which sources have you received this information?
2. What do you feel are three of the most negative conditions experienced by people who live in extreme poverty, and what can be done to eliminate those conditions over time?
3. Many experts believe that poverty typically results in powerlessness and various forms of exclusion. What do you think they mean by this?
4. What are some of the health risks commonly experienced by individuals who are living in poverty, and how might they be reduced in the coming years?
5. What sorts of factors do you believe are causing poverty rates to increase, rather than decrease, in several countries today?
6. What do you feel are three of the most promising ways to combat the poverty that remains in our world?



Themes & Concepts



Central Theme #1: The conversation on extreme poverty is largely about Africa.

Africa has the fastest-growing population of any major region. The combination of population growth, conflict, economic and social problems, and bad government has led to a situation where poverty is increasing rather than decreasing.

MAJOR CONCEPTS:

- Of the 18 countries in the world where the number of extremely poor individuals is rising, 14 are in Africa.
- It is estimated that Africa must reduce poverty by approximately 57 people per minute to reach its global goal. Rather than progressing to that goal, Africa instead added 2.4 million more impoverished people, at a rate of 4.6 people per minute, in 2017.
- The increase in poverty is largely due to two of Africa's most populous countries, Nigeria and the Democratic Republic of the Congo, adding 9.3 poor people per minute.
- The Brookings Institution predicts that 90% of the world's poorest people will live in Africa within 12 years.

Poverty (typically measured as absolute or relative) describes the scarcity of money or material possessions. It is a complex concept that can impact, or be impacted by, social, economic, and political factors. Reducing and ultimately eliminating extreme poverty are major goals of many international organizations such as the World Bank and the United Nations.

Central Theme #2: Trends show that our world is not on pace to achieve SDG 1.

In January 2016, implementation of the international Sustainable Development Goals (SDGs) began. As of July 2018, the world has seen about 83 million people escape extreme poverty. While there has been significant progress, the world is not on pace to end poverty by 2030.

MAJOR CONCEPTS:

- If extreme poverty were to reach zero by 2030 (as outlined by SDG 1), 120 million people should have escaped extreme poverty by July 2018. There is now a 35-million-person "backlog" that will need to be made up to achieve the goal.
- Current projections suggest the world will fall short of achieving the goal by 2030, although poverty is likely to lower by about 200 million people by then. If these estimates are correct, 5% of the world's population will still be living in extreme poverty when the year 2030 arrives.
- At the current pace, forecasts suggest the poverty rate could be as low as 4% by 2030. Compared to the rate of 42% in 1981 and nearly 100% in the 19th century, 4% is significant progress even if it falls short of SDG 1.

Central Theme #3: Even though there is work to be done, the story on

poverty is one of success.

Over the last 200 years, the global population has increased seven times over. Despite more than two centuries of unprecedented population growth, the world has managed to lift more and more people out of poverty, largely due to economic growth that has completely transformed the world.

MAJOR CONCEPTS:

- In 1820, approximately one billion of the world's 1.1 billion people lived in extreme poverty while just a few elite enjoyed high standards of living.
- As more and more countries industrialized and increased work productivity, their economies started to grow and poverty began to decline. Despite those accomplishments, by 1950, about 74% of the world's population were living in poverty.
- Today, only 0.7 billion of the world's 7.5 billion people — or 10% of the world's population — live in extreme poverty, which is defined as living on less than \$1.90 a day. Not only is this the lowest percentage of people living in extreme poverty ever, it is also the lowest *total number* in more than 200 years.
- According to household surveys, 44% of the world population lived in extreme poverty in 1981. Since then, the percentage of poor people in the world has decreased quickly — faster than any other time in world history.

“Poverty is the worst form of violence” – Mahatma Gandhi

Central Theme #4: The effects of poverty are far-reaching, impacting life beyond having adequate access to money.

The standard methodology for measuring poverty relies on income and consumption data. This information is informative but does not include the wide range of aspects — including health, human rights, and education — that impact overall welfare.

MAJOR CONCEPTS:

- Poverty has effects on children that are not yet fully understood. For example, children born into poverty can be impacted before birth and are ultimately at higher risk of mental disorders, depression, and struggles as adults.
- Research shows that the cycle of poverty is both psychological and physiological. In other words, when people do not have enough money, they become stressed, which changes their outlook on life and how they make decisions. As a result, they become fearful of risk and focus on short-term decision-making.
- Many experts are calling for a universal basic income that guarantees people the right to an income that meets their basic needs. The idea has been or is being tested in Canada, Finland, and Kenya, while India and Scotland are considering similar programs.
- The term “poverty trap” is one economists use to describe situations in which individuals are stuck in deprivation and do not have the ability to escape their situation on their own. In other words, poverty today causes poverty in the future, meaning households that start out poor typically end up remaining poor.

Resources & Summaries



While we strive to ensure that these resources are suitable for all ages, you should review them before sharing with your students. Links and content can change over time and are beyond our control.

You may also access new articles via our Facebook page:

www.facebook.com/fpspi

Allard, S. (2018, June 2). Poverty is rising faster in US suburbs than in cities – here’s why. *Business Insider*.

Since 2000 in the United States, suburban counties have been experiencing greater increases in poverty than rural and urban counties. Poverty rates in U.S. suburbs have grown by 50% since 1990. This reality is called the “suburbanization of poverty.”

There are multiple reasons why poverty is rising more quickly in U.S. suburbs than in cities. One reason is that suburbs have experienced significant population growth in recent decades. Another is the changing nature of the U.S. labor market. High-paying jobs that do not require specialized training have been disappearing in suburban areas.

What, then, can be done to help reduce poverty in suburban areas? Government assistance programs could be made more readily available to those in need. Public funding for human service programs can be increased. Local leaders and nonprofit agencies can also work together to create new approaches to reducing poverty.

Retrieved from <https://www.businessinsider.com/poverty-is-rising-faster-in-us-suburbs-than-in-cities-heres-why-2018-6>

Anzilotti, E. (2018, June 8). American cities are failing on sustainable development. *Fast Company*.

About 85% of Americans live in metropolitan areas. However, the 100 most heavily populated U.S. cities and metropolitan areas are falling behind in meeting the Sustainable Development Goals (SDGs) established by the United Nations in 2015. More than 60 of these areas are less than halfway toward meeting the 15 SDGs that pertain to urban areas. The best-performing metropolitan area in the nation — San Jose-Sunnyvale-Santa Clara, California — is only 68% of the way to achieving those goals.

“The state of data available for many of these issues in America right now is pretty poor,” said Jessica Espey, senior advisor for the Sustainable Development Solutions Network. For instance, Espey noted that when it comes to reducing inequality, none of the 100 U.S. metro areas has yet received a “good performance” rating. “One of the most important things that cities should be doing is shining a spotlight on many of the issues the federal government won’t talk about or address,” she remarked.

Retrieved from <https://www.fastcompany.com/40582463/american-cities-are-failing-on-sustainable-development>



Beaumont, P., & Abrak, I. (2018, July 16). Oil-rich Nigeria outstrips India as country with most people in poverty. *The Guardian*.

Nigeria has one of the wealthiest economies in Africa. It also has the world's biggest concentration of extreme poverty. In May 2018, Nigeria overtook India as the country with the largest number of individuals living in extreme poverty.

Across the continent, growth in African poverty exceeds current efforts to eliminate it. A recent report from the Brookings Institution shows that 14 of the world's 18 countries in which the rate of extreme poverty is rising are in Africa. Statistics show that while the number of extremely poor individuals living in India is currently decreasing at a rate of approximately 44 people a minute, the number of similar individuals living in Nigeria is growing by six people a minute, which represents a shift in the center of global poverty from Asia to Africa.

"Africa has the fastest growing population of any major region, while population growth in India is probably under 1%," stated Homi Kharas of the Brookings Institution. "In Africa, however, a slow combination of population growth, conflict, economic and social problems, and bad government has led to the current situation."

Retrieved from <https://www.theguardian.com/global-development/2018/jul/16/oil-rich-nigeria-outstrips-india-most-people-in-poverty>

Bulman, M. (2018, February 5) Growing number of refugees and asylum seekers falling into poverty in Britain. *The Independent*.

In Britain, the number of refugees and asylum seekers who are living in food poverty increased by 20% between 2016 and 2017. The Red Cross is concerned about the lack of government aid for many of these individuals. Campaigners are working to increase the amount of time that asylum seekers may receive government support, which is currently limited to 28 days. Unfortunately, asylum decisions often take longer than that to determine.

"There is a global refugee crisis and the UK has a legal obligation under international law to take our fair share," said Thangam Debbonaire, chair of the All Parliamentary Group on Refugees. "However, we take a tiny number in any case and to read how many experience poverty and destitution instead of the welcome they deserve and are entitled to is an awful statement about who we are as a country."

"No one who has fled conflict and persecution should be left destitute as a side effect of being granted protection in this country," said Alex Frasier, director of Refugee Support with the British Red Cross. "Not only does destitution severely impact a person's ability to provide for themselves and their family, but in our experience it can also lead to an increased risk of exploitation."

Britain has the sixth-largest economy in the world. Critics argue that should make it possible for the country to adequately provide for the needs of refugees and asylum seekers. They are calling for the government to take action to ensure that such individuals are not cast aside, ignored, and left impoverished.

Retrieved from <https://www.independent.co.uk/news/uk/home-news/number-of-refugees-and-asylum-seekers-falling-into-poverty-soars-in-a-year-show-figures-a8195746.html>

Cowan, S. (2018, September 1). Inequality isn't Australia's issue — poverty should be our focus. *The Sydney Morning Herald*.

In Australia, income inequality has risen slightly over the past 30 years. During this same period, however, incomes have continued to grow and social mobility has remained high. Some people might be tempted to conclude that inequality does not matter. However, reaching such a conclusion would be going too far.

Australia ranks among the top-ten most equal societies according to the Organisation for Economic Co-operation and Development (OECD). However, some measurements show that poverty in Australia has not been significantly reduced despite three decades of economic growth. Policies designed to reduce inequality must focus on a wider range of issues besides poverty alone. One reason why many of the policies intended to target inequality fail are because they simply transfer funds from middle-income individuals to lower-income ones in a sort of “welfare churn.”

Retrieved from <https://www.smh.com.au/business/the-economy/inequality-isn-t-australia-s-issue-poverty-should-be-our-focus-20180830-p500to.html>

Daileida, C. (2016, August 24). The borders of rich and poor that divide America. *Mashable*.

Across the United States, school district borders commonly divide richer and poorer neighborhoods that are located close together. Fifty of the most extreme borders separate neighborhoods with an average poverty rate of 9% from those with an average poverty rate of 37%. In addition, the United States has about 4,000 borders dividing two school districts with poverty rates that differ by 14% or more, often involving racial differences.

Consider the situation of Grosse Pointe, Michigan and Detroit, Michigan. In 1970, Grosse Point had a poverty rate of 3% and Detroit had a poverty rate of approximately 15%. Four years later, the Supreme Court decided that desegregation could not be forced across school district borders. In 2016, Grosse Point had a poverty rate of about 6.5% and Detroit had a poverty rate of 49%.

Neighboring school districts in other areas face similar challenges. The poverty rate in Vestavia Hills, Alabama is about 6% today, whereas the poverty rate in Birmingham, Alabama is 48.5%. Dayton, Ohio's poverty rate is about 7% today compared with a 47% poverty rate in neighboring Oakwood, Ohio. Similarly, the poverty rate in Arizona's Scottsdale Unified School District is just over 10% compared with a nearly 50% poverty rate in the neighboring Balsz Elementary School District. Despite that significant difference, the Balsz Elementary School District receives 30% less state and local funding than Scottsdale Unified.

Retrieved from <https://mashable.com/2016/08/24/poverty-rate-disparity-school-districts-detroit-dayton/#gwgNDR7Luaq6>



Desmond, M. (2018, September 11). Americans want to believe jobs are the solution to poverty. They're not. *The New York Times*.

In the United States today, people often hear that the economy is strong. Unemployment has decreased. Many jobs remain unfilled. For many individuals without much education, though, the question isn't whether or not they can get a job but instead if can they find a job that will pay them enough money to live.

Over the past four decades in the United States, the economy has grown and corporate profits have increased. During this same period, however, real wages have remained unchanged for workers who lack a college education. Since 1973, U.S. productivity has increased by more than 75% while hourly pay has only grown by about 12%. This means that many U.S. workers are being shut out of the profits they work to generate. The decline of unions in the United States is one of the biggest reasons this has occurred.

It is true that government safety-net programs help to lift millions of American families above the poverty line every year. However, experts maintain that one of the best antipoverty solutions is a decent-paying job. In the United States today, nearly one-third of the entire workforce earns less than \$12 an hour and does not have employer-offered health insurance.

In 2016, approximately 7.6 million Americans were classified as “working poor.” The jobs of such individuals often involve cleaning hotel rooms, supervising children in daycare centers, stocking grocery store shelves, answering customer-service calls, smoothing asphalt on roadways, and driving taxis or Ubers. Unfortunately, in contrast to the promise of the American Dream, changes in the labor market have made it quite difficult today for people to launch themselves “from the mailroom to the boardroom.” Despite that reality, it remains common thinking that “in America, if you work hard, you will succeed. So those who do not succeed have not worked hard.”

Statistics from the Brookings Institution show that 33% of U.S. residents living in poverty in 2016 were children, 11% were elderly, and 24% were working-age adults who were either currently working or seeking employment. Of the remaining working-age adults 12% were unable to work due to a disability, 15% were students or caregivers, and 3% retired early. Many of these latter individuals are also parents, caregivers to their sick or dying parents, or both at the same time. They had worked hard to get where they were, but often the jobs they could find did not fully pay their bills.

Retrieved from <https://www.nytimes.com/2018/09/11/magazine/americans-jobs-poverty-homeless.html>



Dupere, K. (2016, October 17). 16 brilliant innovations tackling poverty around the world. *Mashable*.

A variety of creative innovations are helping to reduce poverty-related inequalities around the globe. The Shoe That Grows is one example. Because children quickly outgrow numerous pairs of shoes as they age, this unique shoe features a series of notches and snaps that allow it to expand five sizes and be worn for several years. The SafariSeat is a specially designed wheelchair, made from bicycle parts, that can be built and used in rural, developing areas. The Eco-Cooler is a low-cost cooling system, made from recycled plastic bottles, that can be used in places lacking electricity.

Each year, more than a million babies die on the day of their birth, and most of them are in developing nations where hypothermia is common. Embrace Warmer is a life-saving infant sleeping bag that keeps a baby warm during his or her vulnerable first days of life. LifeStraw is a straw-shaped filtration system that makes contaminated water safe to drink. The Hippo Roller is a water-collection drum that is easy to push and roll. It can be used by poor women and children in rural areas to collect water and transport it home. These are just a sampling of the ways that individuals today are reducing inequalities throughout the world.

Retrieved from <https://mashable.com/2016/10/17/poverty-innovations/#FYFOJoGPWkq6>

Editorial Board. (2018, September 12). Tickets from poverty to a better future. *The New York Times*.

One important way to improve the futures of poor children is to help them and their families escape poor neighborhoods. The creation of housing programs to assist low-income families can make this a reality. Once in their new environment, such individuals can have regular access to better housing, schools, transportation, and employment opportunities.

A 2015 study by a group of economists from Harvard University found that, in the 1990s, children whose families participated in a U.S. government-designed experiment using vouchers to move from very poor neighborhoods experienced a range of positive outcomes as they matured. For example, after moving to communities with greater opportunities, they ended up becoming better educated and earning more money than those who did not participate in the experimental program. It was also found that such gains increased more the longer they lived in better neighborhoods.

Retrieved from <https://www.nytimes.com/2018/09/12/opinion/vouchers-poverty-congress-mobility.html>



Eubanks, V. (2018, May 13). We created poverty. Algorithms won't make that go away. *The Guardian*.

In the United States, there is a great need for public service programs and not enough of them to go around. That is one thing on which most U.S. data scientists, policymakers, and social workers agree. To help improve efficiency in addressing poverty, a growing number of organizations are looking to automated decision-making. The goal is to help distribute limited resources more fairly.

“We have an extraordinary need and can't meet all of that need at once,” said Molly Rysman, a housing and homeless deputy in California's Los Angeles County. “So you've got to figure out: how do we get folks who are going to bleed to death access to a doctor and folks who have the flu to wait? It's unfortunate to have to do that, but it is the reality of what we're stuck with.”

In recent years, there has been an “explosion” of digital tools designed to manage poverty. Their use is intended to have advanced algorithms make the sorts of heartbreaking choices that humans often find too unpleasant or difficult to make. In this way, the algorithms act as “moral thermometers” to assist those who need help the most to receive it more quickly. This means that professionals increasingly use digital tools to determine which struggling individuals and families should receive limited-supply support.

“Automated decision-making systems act as empathy overrides, outsourcing human choices about who survives and thrives, and who doesn't,” explains Virginia Eubanks, author of *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*. “We empower machines to make these decisions because they are too difficult for us because we know better. We know that there is no ethical way to prioritize one life over the next.”

Retrieved from <https://www.theguardian.com/commentisfree/2018/may/13/we-created-poverty-algorithms-wont-make-that-go-away>

A future for all children: Addressing child poverty in Australia. (2017, October). *Acoss*.

Although Australia is one of the world's wealthiest countries, nearly 3 million of its residents are living in poverty. Approximately 730,000 of them are children under the age of 15. That figure represents 17% of the country's children. It has grown by 2% over the past decade.

Children living in poverty do not receive the food, clothes, and other items they need to avoid hunger, develop effectively, and do well in school. In contrast, studies have found that reducing poverty results in better health, education, and employment outcomes for children as they age.

It is not uncommon today for many children (and their parents) to skip meals, live without heat or electricity, or be at risk of eviction from their homes. Unemployment in Australia is too high and social security payments too low. Experts emphasize that poverty is not simply about numbers. Instead, it has real impacts on real children's lives.

Retrieved from <https://www.acoss.org.au/a-future-for-all-children/>



India no longer a nation with world's largest poor population: Report. (2018, June 27). *The Times of India.*

India no longer has the largest number of poor people in the world. That status shifted to Nigeria in early 2018. At the end of May 2018, there were approximately 87 million people living in extreme poverty in Nigeria, and 73 million people doing so in India. While the poverty rate in India continues to decrease, extreme poverty in Nigeria is increasing. In recent years, India has achieved decreases in extreme poverty as a result of solid growth and high development spending.

Retrieved from <https://timesofindia.indiatimes.com/india/india-no-longer-a-nation-with-worlds-largest-poor-population-report/articleshow/64766766.cms>

The Irish Times view on child poverty: Giving children a chance in life. (2018, September 12). *The Irish Times.*

In 1866, the British charity Barnardos was established to help care for vulnerable children and young people. In recent years, it has become a strong advocate for the rights of disadvantaged children and their family members. In the United Kingdom today, childhood poverty is most extreme in single-parent and traveler families. Addressing their needs in the coming years will require significant investments in early-years counseling, mental health services, and related community programs. The goal of all such efforts must be to provide adequate nourishment, security, shelter, and stability to every child and their families. The reality is that experiencing poverty as a child is quite similar to being punished for a crime you have not committed.

Retrieved from <https://www.irishtimes.com/opinion/editorial/the-irish-times-view-on-child-poverty-giving-children-a-chance-in-life-1.3625868>

Ito, J. (2018, March 29). *The paradox of universal basic income. Wired.*

Philip Alston, the United Nations Special Rapporteur on extreme poverty and human rights, visited the United States in 2017. In summarizing the findings of his visit in December of that year, Alston noted that “the American dream is rapidly becoming the American illusion, as the U.S. now has the lowest rate of social mobility of any of the rich countries.” The same month, the *Boston Globe* reported that the median net worth of nonimmigrant African American families living in the Boston area was \$8, as compared to the \$247,500 median net worth of white families living in the same area.

Experts say that income disparity is tearing apart the United States. They also note that efforts to reduce such differences do not seem to be working. In some circles, the concept of a universal basic income (UBI) keeps coming up. This idea is a relatively simple one. As entrepreneur and venture capitalist Joi Ito explains, “The idea of UBI, in fact, is an old idea, older than me even: Either through direct cash payments or some sort of negative income tax, we should support people in need — or even everyone — to increase well-being and lift society overall.”

Some supporters of this concept regard UBI as an effective way to reduce expensive social welfare services in the United States, including those pertaining to food assistance, healthcare, and unemployment assistance. Others regard it as a promising means to eliminate poverty. Although many individuals remain skeptical of UBI, a good percentage of them support the idea of experimenting with the concept to see if it can work.

Sam Altman, President of Y Combinator, is launching an experiment to see how people react when they are given free money. Called the Basic Income Project, 1,000 individuals will be given \$1,000 a month over the course of five years. Two thousand additional participants will be given only \$50 a month during the same five-year period. The findings are expected to offer insight into people’s behavior when they receive free money and whether UBI can actually work.

Retrieved from <https://www.wired.com/story/the-paradox-of-universal-basic-income/>

Keegan, M. (2018, April 24). Hong Kong’s ‘cardboard grannies’: the elderly box collectors living in poverty. *The Guardian*.

Miss Wong lives in Hong Kong. She is 65 years old. Seven days a week, from 7 a.m. to about 9 p.m., she searches the city streets for discarded cardboard that she can sell to local recyclers. On average, she receives HK\$41 (which amounts to £3.60 or US\$5.24) a day for the cardboard she collects.

Wong is one of approximately 1,000 senior citizens in Hong Kong who have been nicknamed “cardboard grannies.” She began collecting and selling cardboard when the company she worked for went out of business and she was unable to find another job. She has no savings or family support, so this is currently her only means of scraping by. “I ended up homeless because I didn’t have enough money to pay the rent,” Wong said.

Residents of Hong Kong now have the longest life expectancy of any country in the world. On average, men in Hong Kong live 81.3 years and women 87.3 years. At the same time, one-third of Hong Kong’s elderly residents live in poverty. This is an embarrassing reality for one of the world’s richest cities.

Furthermore, Hong Kong law makes it possible to prosecute “cardboard grannies” for violations including unlicensed hawking and blocking public space. “Although we understand the officers are exercising the law, the issue highlights a complete lack of respect for the work that these grannies do,” said Tang Wing-him, a ministry officer with the Hong Kong School of Poverty Caring. “The government has to recognize the contribution that the elderly make in a rapidly aging society. My view is that the government has a responsibility to look after the retired population as a basic right.”

Retrieved from <https://www.theguardian.com/cities/2018/apr/24/hong-kong-cardboard-grannies-elderly-box-collectors-recycling-poverty>

Kharas, H., Hamel, K., & Hofer, M. (2018, June 19). The start of a new poverty narrative. *Brookings*.

Africa has become the center of extreme poverty in today's world. In early 2018, Nigeria displaced India as the country containing the highest number of extreme poor. In the near future, it is expected that the Democratic Republic of the Congo will move into the number 2 slot. Also, it is becoming harder and harder to achieve the Sustainable Development Goal SDG 1, which aims to eliminate extreme poverty across the globe by the year 2030. Our world continues to fall further behind in meeting this goal, and we are running out of time to do so.

Retrieved from <https://www.brookings.edu/blog/future-development/2018/06/19/the-start-of-a-new-poverty-narrative/>

Lack of paid sick leave increases poverty (2018, May 24). *Science Daily*.

Researchers at Florida Atlantic University and Cleveland State University have found that individuals who do not have sick leave benefits at work are more likely to encounter food insecurity and need welfare services. "Numerous studies have shown the negative effects lack of paid sick leave have on society, but this is the first time a direct correlation has been observed between the absence of these benefits and the incidence of poverty," said Cleveland State social worker Patricia Stoddard Dare. "This adds to the growing body of evidence that paid sick leave is a key factor in healthcare affordability and economic security."

Retrieved from <https://www.sciencedaily.com/releases/2018/05/180524112356.htm>

Lawler, D. (2018, August 6). The two biggest trends on Earth. *Axios*.

Today's world is experiencing two interrelated trends: While extreme poverty is decreasing, extreme inequality is growing. As a result, the millions of people who find themselves successfully able to escape poverty are beginning to find that they do not have far to rise once they do.

According to the Organisation for Economic Co-operation and Development (OECD), although income inequality has been reduced since the 1990s, social mobility has stalled during this same period. The result is that fewer individuals at the bottom have successfully moved up, in contrast to the richest individuals who have retained much of their fortunes.

Retrieved from <https://www.axios.com/population-living-in-poverty-around-the-world-4e9a1682-8635-46f5-8c20-43264b765c5e.html>

Leber, J. (2016, June 6). Poverty can alter your DNA so you're at greater risk for depression. *Fast Company*.

Researchers have known for a while that the cycle of poverty has both psychological and physiological effects. For example, individuals who lack money experience greater stress, which changes their outlook and the ways they make decisions. In addition, children who are born into poverty are at greater risk of experiencing depression and other mental disorders.

A new study published in *Molecular Psychiatry* reveals that poverty can affect low-income individuals through their entire adolescence. Its findings contribute to the realization that stress and adversity can change the chemical environment surrounding a person's DNA, altering how his or her genes get expressed. This, in turn, increases the person's risk of experiencing a variety of psychological disorders. The findings also offer insight into how the early effects of poverty can cause them to continue to struggle into adulthood.

Retrieved from <https://www.fastcompany.com/3060504/poverty-can-alter-a-persons-dna-to-put-them-at-great-er-risk-for-depression>

Lomborg, B. (2017, October 28). Digital solutions can help even the poorest nations prosper. *Wired*.

Priorities in the world's poorest nations include: improving healthcare, infrastructure, and schools. In contrast, technological innovations are often regarded as luxuries that can be developed in the future. However, kick-starting a technological revolution can be helpful in many areas. Doing so can lead to rapid economic growth, which is an effective way to reduce poverty.

Currently, the South Asian nation of Bangladesh has little in the way of digital technologies. However, it is working to change that quickly. Bangladesh is committed to becoming an important player in the digital economy. It recently moved into eighth place among countries throughout the world for its pace of technological advancement.

Technological advancements can help the Bangladeshi government to become more efficient. For example, switching to online systems for purchasing supplies and services can result in faster deliveries, lower prices, and less corruption. Digitizing the country's land records system would reduce costs by about 90% and provide more secure property rights.

Another country with extremely limited digital technologies is Haiti. Internet coverage there is rare and expensive, with only 4% of households having access to it. Less than 1% of Haitians in 2017 had access to mobile internet. Increasing mobile broadband access in the coming years could stimulate economic growth in Haiti. The benefits of doing so would exceed the costs twelve times. In Bangladesh, Haiti, and other poor nations, a little money invested now can generate huge benefits in the future.

Retrieved from <https://www.wired.com/story/digital-solutions-can-help-even-the-poorest-nations-prosper/>

Mallonee, L. (2018, August 8). The mighty honeybee is fighting poverty and deforestation in Zanzibar. *Wired*.

In Zanzibar, beekeepers understand the positive impact that honeybees have on the local environment. Honeybees there are assisting in the fight to reduce poverty and deforestation as well as the negative effects of climate change. One-third of the 1.3 million people who live on the tropical archipelago of Zanzibar survive on less than \$1 per day. Droughts and flooding caused by climate change endanger the local economy, and deforestation eliminates approximately 2,500 trees per year.

Honeybees help by pollinating fruit and spice trees that local farmers rely on to earn a living. They also provide beekeepers, who can sell the honey they produce, with additional profits that serve to reduce poverty. “The money they earn from honey enables them to provide for themselves,” said Jurre Rompa, the Dutch photographer who is responsible for the series *Jungle Bees*. “They gain status within their families and villages.”

Retrieved from <https://www.wired.com/story/honeybees-zanzibar-photo-gallery/>

New research points to the future of global poverty monitoring. (2017, July 6). *The World Bank*.

The World Bank’s *World Development Report: 1990* focused the world’s attention on the problem of global poverty. At that time, more than a billion individuals throughout the world were estimated to be living in extreme poverty. Nearly three decades later, the number of people living in extreme poverty is estimated using a single “absolute poverty line” that no longer appears to be sufficient.

The 2011 figure is used to determine if someone is experiencing extreme poverty is set as one whose income or consumption falls below an average of US\$1.90/day. “As the world progresses toward eradicating extreme poverty, the absolute poverty line is becoming less relevant for many countries,” said Asli Demirguc-Kunt, director of research at the World Bank. “This progress calls for new measures that take into account assessments of poverty that vary by country and context.”

Some experts are calling for multiple global poverty lines that can be applied in different areas. For example, researchers have concluded that a poverty line of US\$3.20/day is typical of a national poverty line in lower-middle income countries, and US\$5.50/day is typical in upper-middle income countries. At the same time, it must be noted that the use of an absolute poverty line - whether it be US\$1.90, US\$3.20, US\$5.50, or some other figure - still tends to overlook important elements associated with living in poverty. As World Bank economist Dean Jolliffe explains, “As countries grow economically, the cost of participating fully in society may correspondingly increase. While this relative aspect of poverty has been recognized since the time of Adam Smith, it has not previously been incorporated into global measures of poverty.”

Retrieved from <https://www.worldbank.org/en/news/feature/2017/07/06/new-research-points-to-the-future-of-global-poverty-monitoring>

Osumi, M. (2018, September 8). Japanese woman works to give impoverished Filipinos path to education and jobs. *The Japan Times*.

In 2009, Takako Yamada opened the Waku Work English project, a school that offers online courses to Japanese individuals living in the Philippines. Her goal was to help young street children be able to pursue their dreams. Earning an education helps the school's students avoid having to search through garbage regularly or selling small items in the streets to earn money. The school's name is a play on the Japanese word *wakuwaku*, which translates as "inner motivation to live."

One thing that differentiates Yamada's school from other online programs in the Philippines is that it employs teachers full-time. Many of them are former street children themselves. They are recruited with help from nongovernmental organizations. Their efforts benefit a range of underprivileged children, addressing the country's social issues in the process. In the near future, Yamada hopes to build on her success by opening a facility to provide educational and work opportunities to an even wider range of young people in the Cebu province in the Philippines.

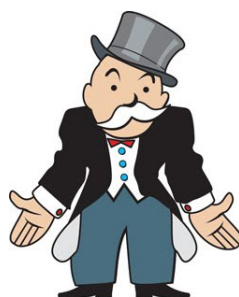
Retrieved from https://www.japantimes.co.jp/news/2018/09/08/national/japanese-woman-works-give-impoverished-filipinos-path-education-jobs/#.W6B_KLQ-dbV

Paynter, B. (2017, September 5). Taking advantage of behavioral economics can get aid to more people in poverty. *Fast Company*.

People experiencing poverty also regularly experience stress. Most commonly, they focus on immediate rewards rather than long-term planning. Besides, their attention is limited when they constantly find themselves experiencing a lack of time, food, and sleep. Helping such individuals break out of this vicious cycle is not an easy thing to do. The most effective approaches must focus on reducing upfront costs (in terms of both time and money) and presenting options at moments when such individuals feel at least somewhat financially stable.

Paperwork is a major obstacle for individuals who need assistance. As a result, efforts to auto-populate forms with their relevant data and automatic enrollment options often prove effective in aiding people in poverty. Strategically timed subsidies can also be effective. "When people's attention is so heavily taxed that they simply can't devote any of it to noticing interesting things that might be useful to them, then something as simple as pointing out what seems obvious to you can be really useful," said Christopher Bryan, an assistant professor at University of Chicago Booth School of Business and co-author of *Overcoming Behavioral Obstacles to Escaping Poverty*.

Retrieved from <https://www.fastcompany.com/40460387/taking-advantage-of-behavioral-economics-can-get-aid-to-more-people-in-poverty>



Peters, A. (2016, November 29). Experience how expensive it feels to live below the poverty line. *Fast Company*.

If a resident of San Francisco is living on the poverty line, buying just one gallon of milk costs more than 1% of his or her weekly take-home pay. For someone earning \$150,000 a year, the equivalent would be spending about \$23.50 for a single gallon of milk. At that same salary level, a bottle of laundry detergent would cost about \$58, and four rolls of toilet paper would cost nearly \$17.

Those are the findings of a new website that tries to put the experience of poverty in perspective for individuals with greater financial resources. Its goal is to help a wider range of people get a better sense of what it feels like to shop for everyday necessities when someone is poor. In 2016, the average San Francisco resident needed to work four minimum-wage jobs to be self-sufficient. In addition, one out of every ten families living in the San Francisco Bay Area in 2016 was living below the US federal poverty line.

Retrieved from <https://www.fastcompany.com/3065895/experience-how-expensive-it-feels-to-live-below-the-poverty-line>

Peters, A. (2017, July 18). To get the world's attention, these African farmers turned a field into data. *Fast Company*.

In December 2016, farmers and villagers living in Zambia tilled a local field in order to create a series of graphs in the soil. Their goal was to share current realities with the rest of the world. It was also to spread the message that more money needs to be invested in African agriculture.

Although Africa contains 25% of the world's arable land, it produces only 10% of the world's food supply. In addition, a growing number of young people are leaving rural communities for other places at a time when the need for food is growing. Throughout the world today, 80% of the world's poorest people live in rural areas, where they earn money from agriculture. Improving food production and access to markets in these areas can serve two purposes: increasing their incomes and providing for growing food needs.

“Rising prices and demand hold tremendous promise for the people who work the world's 500 million small farms to grow and sell more food, lifting themselves out of poverty and food insecurity,” said Gilbert Houngbo, President of the International Fund for Agricultural Development. “When connected to markets, smallholder farmers can generate an income and create a multiplier effect — sending their children to school and stimulating the economy to help lift their community out of poverty for the long term.”

Retrieved from <https://www.fastcompany.com/40441083/to-get-the-worlds-attention-these-african-farmers-turned-a-field-into-data>

Ravallion, M. (2016, January 4). Poverty: The past, present and future. *World Economic Forum*.

Over the past 200 years, views about poverty have changed. Before, the widespread belief was that poor people would always be poor. It was generally assumed that poverty would always exist. Some experts even argued that poverty was essential for economic advancement because poor people were necessary for farming the land and working in factories.

In more recent times, poverty is regarded as a social problem that can be avoided with public action. Social protection is offered to individuals who need it most. As a result, poverty is no longer viewed as either a natural or an inevitable condition. Instead, efforts are regularly implemented to help future generations escape poverty for good.

Progress in addressing poverty differs by location and historical period. There have been significant advances toward eliminating poverty as well as setbacks along the way. It has been common for major steps forward to be followed by a backlash in thinking and public policies. With approximately one billion individuals throughout the world living in poverty in 2016, more must be done to address this complex situation.

Going forward, one of two things is likely to happen. The “pessimistic” path will be that most of the developing world will revert to the slow progress toward addressing poverty that was common in the 1980s and 1990s. The “optimistic” path will maintain the positive strides made in the past two decades without any rise in overall inequality. If inequality increases, many poor people will not experience positive change. External development assistance can help improve their chances at a better quality of life. Growing urban economies can also create new opportunities for poorer individuals. The question is whether politicians will remain willing and able to continue working to eliminate poverty in the years to come.

Retrieved from <https://www.weforum.org/agenda/2016/01/poverty-the-past-present-and-future/>

Reddy, D. (2018, December 9). Poverty a social phenomenon. *Telangana Today*.

According to the World Bank Organization, “Poverty is hunger. Poverty is a lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not having access to school and not knowing how to read. Poverty is not having a job, is fear for the future, living one day at a time.”

Naturally, poverty is a complex phenomenon from which most individuals experiencing it wants to escape. Efforts to reduce or eliminate poverty focus on providing all individuals with adequate food, shelter, healthcare, and access to education. They also strive to provide a voice to all people concerning what happens in their communities.

Poverty has been defined in various ways. Some people regard poverty as a lack of funds to buy a refrigerator or a car. Others define poverty as the experience of lacking housing, basic services, and opportunities for employment and training. At the simplest level, however, poverty can be defined as “a social condition where individuals do not have financial means to meet the most basic standards of life that are acceptable by the society.”

Many people believe that we will never be able to eliminate poverty entirely. While they may be right, it is clear that extreme poverty can be eliminated. To do so, it is important to understand and address the causes of extreme poverty. They include a lack of clean water in the home, lack of enough food (which depletes a person's energy and strength and endangers overall well-being), and lack of easy access to healthcare.

Retrieved from <https://telanganatoday.com/poverty-social-phenomenon>

Schiller, B. (2016, February 5). Among poor kids, there's a reverse gender gap in employment. *Fast Company*.

It is well known that children born to low-income families tend to have low-income themselves later in their lives. New research shows that this situation is even worse for young men than for young women. In many economies, the gender gap typically places women at a disadvantage, leaving them to earn less money than their surrounding men. When it comes to the realities of poor kids as they age, this gender gap is reversed. In part, that is because researchers have found that "low-income boys who grow up in high-poverty, high-minority areas work significantly less than girls" as they age. The situation is more extreme in some countries than others.

Retrieved from <https://www.fastcompany.com/3056314/among-poor-kids-theres-a-reverse-gender-gap-in-employment>

Schiller, B. (2018, February 22). Inside Ontario's big, bold basic income experiment. *Fast Company*.

Ontario recently launched a basic income experiment. Participants in the experiment receive guaranteed monthly stipends intended to help them improve the quality of their lives. This pilot experiment is occurring in Ontario's Hamilton, Lindsay, and Thunder Bay metropolitan areas. Single recipients receive up to \$16,989 and couples up to \$24,027 a year. The additional income is helping some participants to eat fruit and vegetables rather than junk food and improve their health.

A major goal of this experiment is to help bring more people out of poverty. Similar experiments are being launched around the world. Ontario's \$50-million pilot experiment will continue until 2021. At that point, its overall effect will be assessed to see if it should move from the pilot stage into a full-fledged government program.

Retrieved from <https://www.fastcompany.com/40532513/inside-ontarios-big-bold-basic-income-experiment>



Toner, K. (2018, November 26). Disadvantaged girls change their communities by learning to code. *CNN*.

Seventeen-year-old Sharon Okpoe has lived her entire life in Makoko, the world's largest "floating slum" in Lagos, Nigeria. Approximately 65% of Lagos residents do not have reliable electricity, sanitation, or clean water. However, the city is now being regarded as "Nigeria's Silicon Valley," as both Facebook and Google recently opened offices there.

Okpoe's father works as a fisherman. Her mother sells smoked fish. To help improve her financial future, Okpoe regularly participates in GirlsCoding, a local program that teaches girls about computer programming. Since 2012, the program has helped hundreds of disadvantaged girls transform their lives. It is currently training dozens of them, between the ages of 10 and 17, in CSS, HTML, JavaScript, Python, and Scratch.

Okpoe applied her training to create an app called Makoko Fish. It allows local fishers (her father included) to sell the seafood they catch directly to customers. Based on that success, she is hoping to study computer science at Harvard University to become a software engineer.

Lagos-based computer programmer Abisoye Ajayi-Akinfolarin started the GirlsCoding program. Her goal in doing so was to help fix the gender gap in the programming field. Her efforts are now being expanded into different states in Nigeria. One day, she hopes to launch an institution called Girls Village, a residential program to provide a variety of training and skills to young girls.

Retrieved from <https://www.cnn.com/2018/09/13/world/cnnheroes-abisoye-ajayi-akinfolarin-pearls-africa-foundation/index.html>

Weller, C. (2017, October 17). A top economist just put the fight against poverty in stunning perspective. *Business Insider*.

October 17 is the International Day for the Eradication of Poverty. Fortunately, efforts to combat poverty throughout the world continue. As Oxford economist Max Roser has noted, "Newspapers could have had the headline 'Number of people in extreme poverty fell by 137,000 since yesterday' every day in the last 25 years."

Roser says the trend to eliminate extreme poverty is very impressive. He points out that the total number of people living in extreme poverty today is three times less than in 1970. He further notes that the number of individuals living in moderate poverty has also been decreasing in recent years. Roser believes it is important that people know such positive change is occurring. Otherwise, they are likely to assume that poverty is a naturally occurring problem with no end in sight.

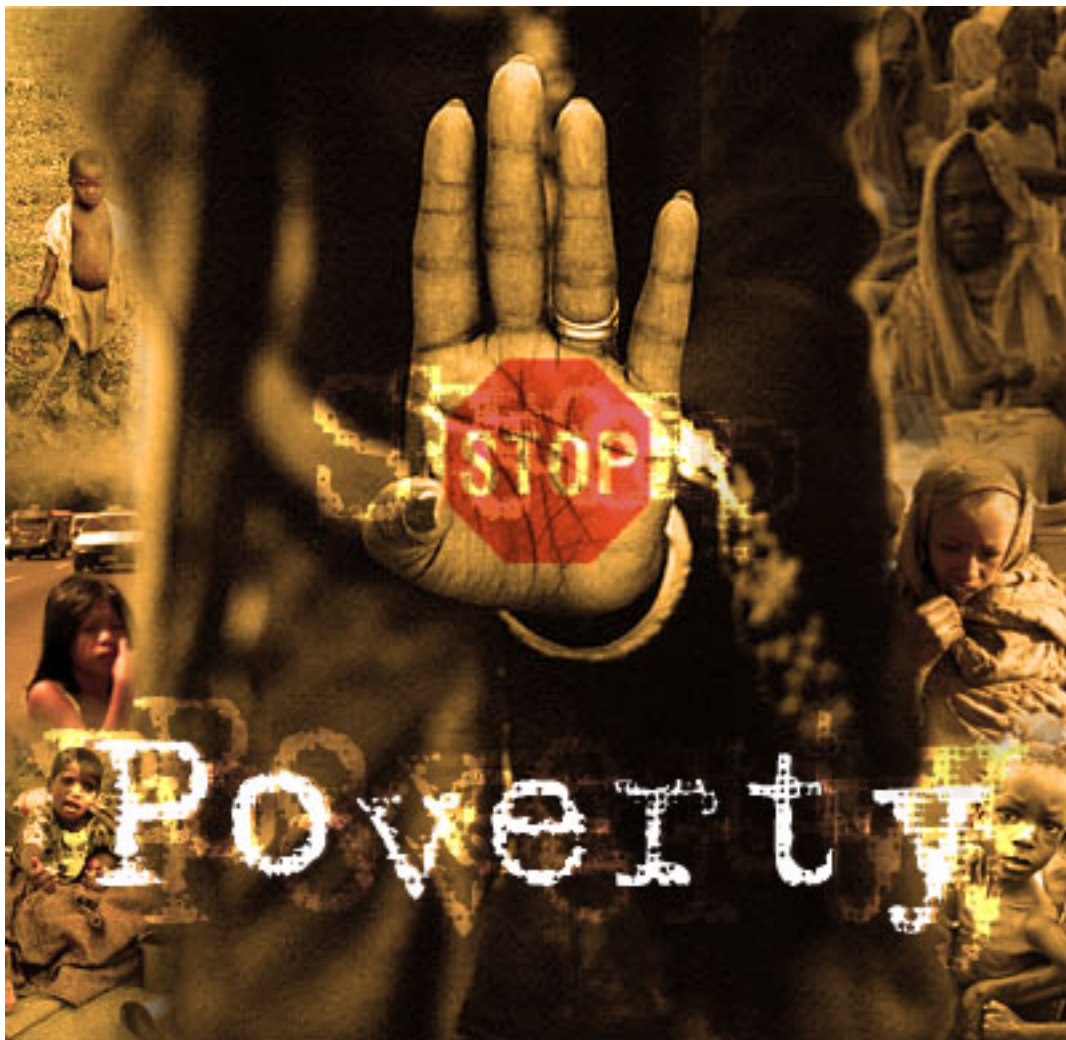
Retrieved from <https://www.businessinsider.com/max-roser-puts-fight-against-poverty-in-stunning-perspective-2017-10>

World hunger levels rise for third year running — UN. (2018, September 11). *The Irish Times*.

In 2017, world hunger increased for the third year in a row. In part, such change is the result of conflict and ongoing climate change. This reality will make it quite challenging to achieve the global goal of eliminating extreme poverty by the year 2030. “We need to act now,” said Cindy Holleman, a senior economist at the Food and Agriculture Organisation (FAO). “Because we’re concerned it’s not going to get better, that it’s only going to get worse.”

In 2017, nearly 124 million individuals in 51 countries experienced crisis levels of hunger. Climate disasters (such as droughts and floods) and prolonged conflicts made troublesome conditions even worse. In September 2018, the Save the Children charity cautioned that 600,000 children living in war zones could die from extreme hunger by the end of that year. For those who survive, food deprivation can still lead to harmful metabolic changes and psychological disorders.

Retrieved from <https://www.irishtimes.com/news/world/world-hunger-levels-rise-for-third-year-running-un-1.3625312>



Digital Resources: Living in Poverty

Al Jazeera English. (2018). *Princess of the dump*. [Video File].*

Retrieved from <https://www.facebook.com/aljazeera/videos/10156287201728690/>

Description: An inside look at what it is like to live by and scavenge at Indonesia's biggest rubbish dump

BBC News. (2018). *From rubbish dump to dinner table*. [Video File].*

Retrieved from <https://www.facebook.com/bbcnews/videos/1887606311258486/>

Description: A video that describes the process in which food from the garbage or dump is scavenged and becomes a meal

Black, M. *The geography of poverty*. [Website].**

Retrieved from <http://www.mattblack.com/the-geography-of-poverty/>

Description: A captivating photo series of poverty in the U.S.; pairs well with <http://www.msnbc.com/interactives/geography-of-poverty/index.html>

Borovoy, A. (2014, May 25). *Great resources for teaching about global poverty*. [Video Playlist].**

Retrieved from <https://www.youtube.com/playlist?list=PLvzOwE5IWqhS4jY8K27Xjp9r5p1DuMFY5>

Description: A YouTube playlist of 8 mini-videos about poverty

Bregman, R. (2017, April). *Poverty isn't a lack of character it's a lack of cash*. Ted. [Video File].

Retrieved from

https://www.ted.com/talks/rutger_bregman_poverty_isn_t_a_lack_of_character_it_s_a_lack_of_cash?language=en#t-627973

Description: A lecture sharing one proposed way to end poverty - through universal basic income.

Caution: contains one instance of language

BuzzFeedVideo. (2017, May 15). *Childhood poverty explained with cake // Presented by BuzzFeed & Walgreens*. [Video File].

Retrieved from <https://www.youtube.com/watch?v=i1WIN0qvVNO>

Description: A lighthearted video that uses cake to visualize poverty statistics; serves as a promotional video for the efforts of Walgreens and BuzzFeed in fighting poverty

Gates Foundation. *Data check*. [Interactive Quiz].

Retrieved from <https://www.gatesfoundation.org/goalkeepers/report/data-check>

Description: A hands-on interactive quiz on recent poverty trends and how the world is progressing toward Global Goals to fight poverty

Gates, M. (2018, September 24). *What happens when countries invest in health and education*. [Video File].

Retrieved from <https://www.facebook.com/melindagates/videos/1705635482899129/>

Description: A closer look at the education and health investments that will help eliminate extreme poverty in Africa

Peters, A. (2015, December 17). *See the story of income inequality in photos of people's household possessions*. [Photo Series].

Retrieved from <https://www.fastcompany.com/3054578/see-the-story-of-income-inequality-in-photos-of-peoples-household-possessions>

Description: A photo series comparing common objects (e.g. couches, beds) of those who are living in poverty and those who are not

Play Spent [Website].

Retrieved from <http://playspent.org/>

Description: A web-based “game” involving the making of choices through the course of a month to manage expenses; includes facts about low-income situations as selections are made

The Economist (2018, November 28). *Can extreme Ppoverty ever be eradicated?* [Video File].

Retrieved from <https://www.youtube.com/watch?v=HEB4tvIRTXo>

Description: A look at data and trends helping one understand if eradicating poverty is possible

The Global Goals. (2017, June 12). *Leave no one behind: Juddy's story*. [Video File].

Retrieved from https://www.youtube.com/watch?v=oiTz6j_Mjlc

Description: A video examination of one woman's story on the fight to end poverty for females in her community; examines possible connection between poverty and disability

Tipping Point [Website].

Retrieved from <https://tippingpoint.org/povertylineprices/index.html#1>

Description: A short film that (upon scrolling) uses an example income to simulate the value of everyday items for those living below the poverty line

Caution: Video does include 2-3 instances of censored language.

USAID. (2012). *Mobile phones tackling poverty*. [Infographic].

Retrieved from <https://visual.ly/community/infographic/technology/mobile-phones-tackling-poverty>

Description: An infographic (albeit dated) that highlights how technology (specifically mobile phones) can help lift people out of poverty

Visual Capitalist. (2018, September 21). *The decline of extreme poverty in perspective*. [Infographic].

Retrieved from <http://www.visualcapitalist.com/decline-extreme-poverty-perspective/>

Description: A visual of the latest global data on poverty from the World Bank

Vox. (2014, November 14). *Basic income, explained*. [Video File].

Retrieved from <https://www.youtube.com/watch?v=c9xVWOfXW7U>

Description: A short introduction to the concept of basic income and why some view it as a promising idea

World Bank. (2016, October 02). *Poverty and shared prosperity 2016 - taking on inequality*. [Infographic].

Retrieved from <http://www.worldbank.org/en/news/infographic/2016/10/02/infographic-poverty-and-shared-prosperity-2016-taking-on-inequality>

Description: An infographic on movement out of poverty and continued presence of poverty across the world

World Poverty Clock. [Website].

Retrieved from <http://worldpoverty.io/>

Description: An interactive website that shows the rate at which individuals are escaping poverty; has global maps and statistics with which one may engage

WorldVision Aus. (2015, September 14). *What causes poverty?* [Video File].

Retrieved from https://www.youtube.com/watch?v=SCUhFFQ_ZRA

Description: A 3-minute video comparing two young people with very different living conditions

WorldVision Aus. (2015, September 14). *What is poverty?* [Video File].

Retrieved from <https://www.youtube.com/watch?v=tXpm7xDRWk4>

Description: An adapted game-show/quiz describing the basics of poverty

** Recommend for mature audiences*

*** Has not been fully screened, should be reviewed before use in classroom*



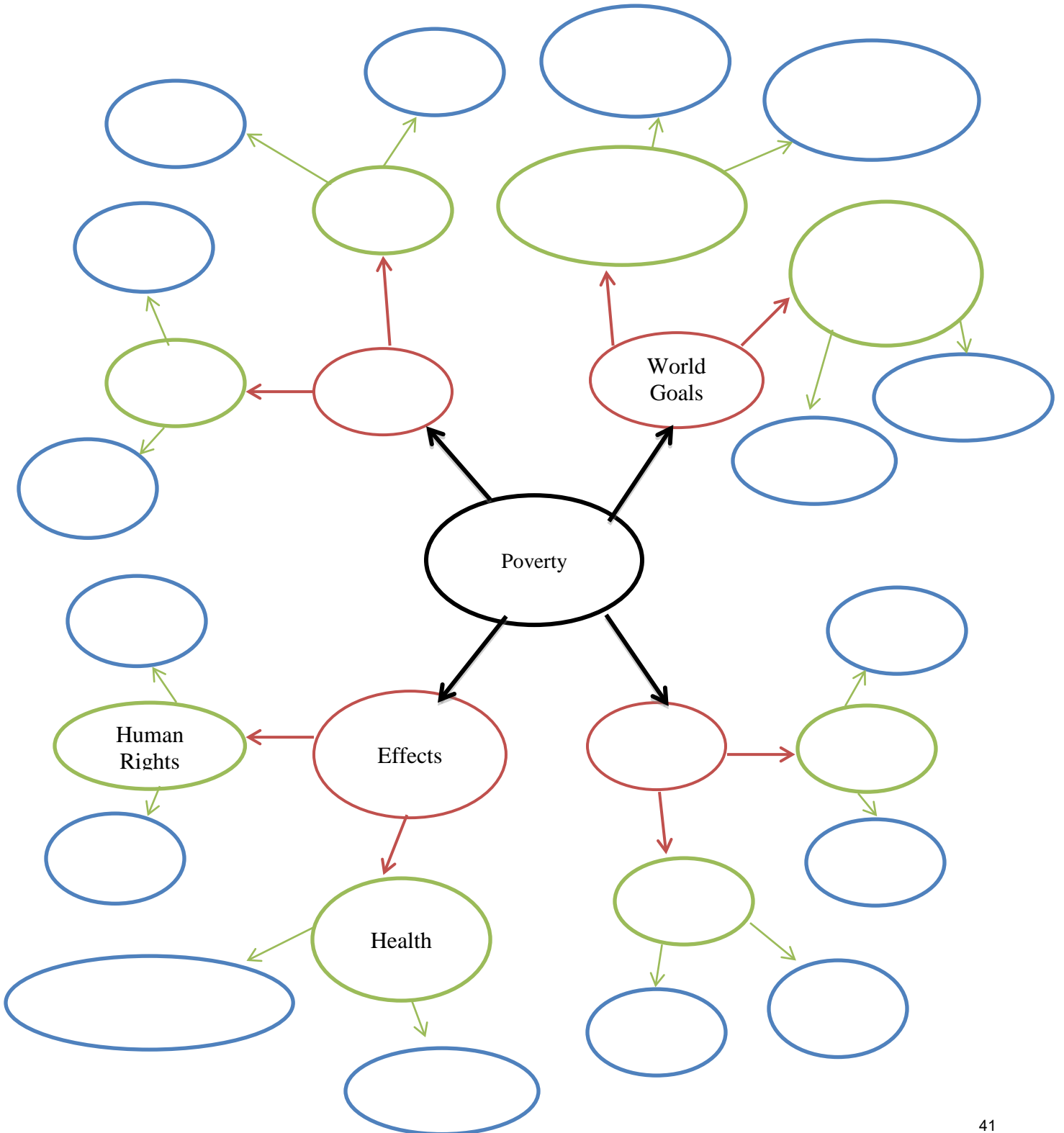
Appendix

Research
Strategies,
Problem Solving
Tools, &
Practice Future Scene



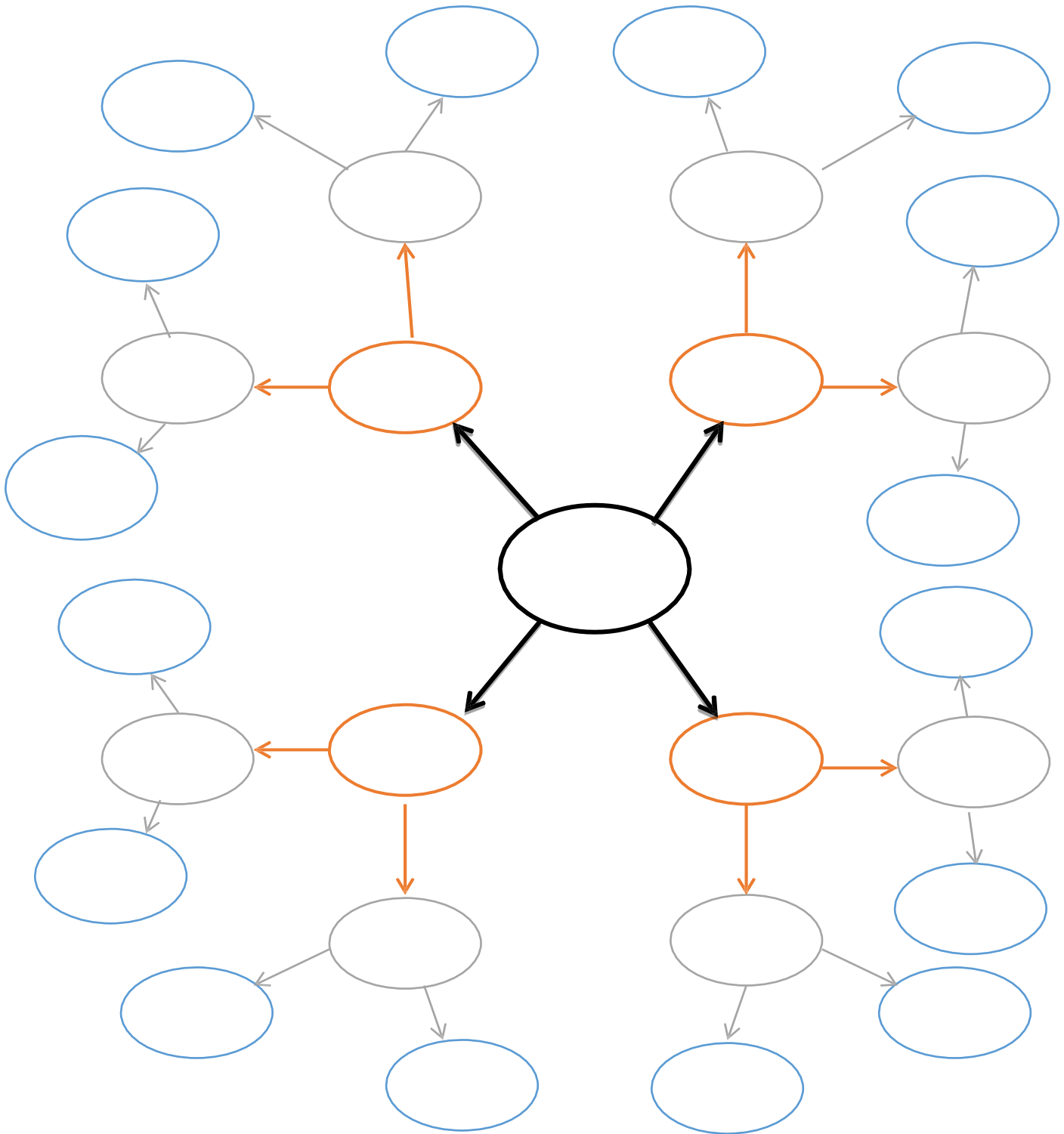
FUTURES WHEEL

A Futures Wheel is a tool that allows you to predict future events. Using the knowledge you have of the current situation, consider positive and negative results of an idea, event or trend. The starting idea is in the center of the page in the black circle. Fill in the red circles with first-order effects that could result from the starting idea. For each first-order effect identify two second-order effects (green circles). Repeat for the second-order effects to identify third-order effects (blue circles). After completing the Futures Wheel discuss which ideas on your wheel could be challenges and others could be solutions.



FUTURES WHEEL

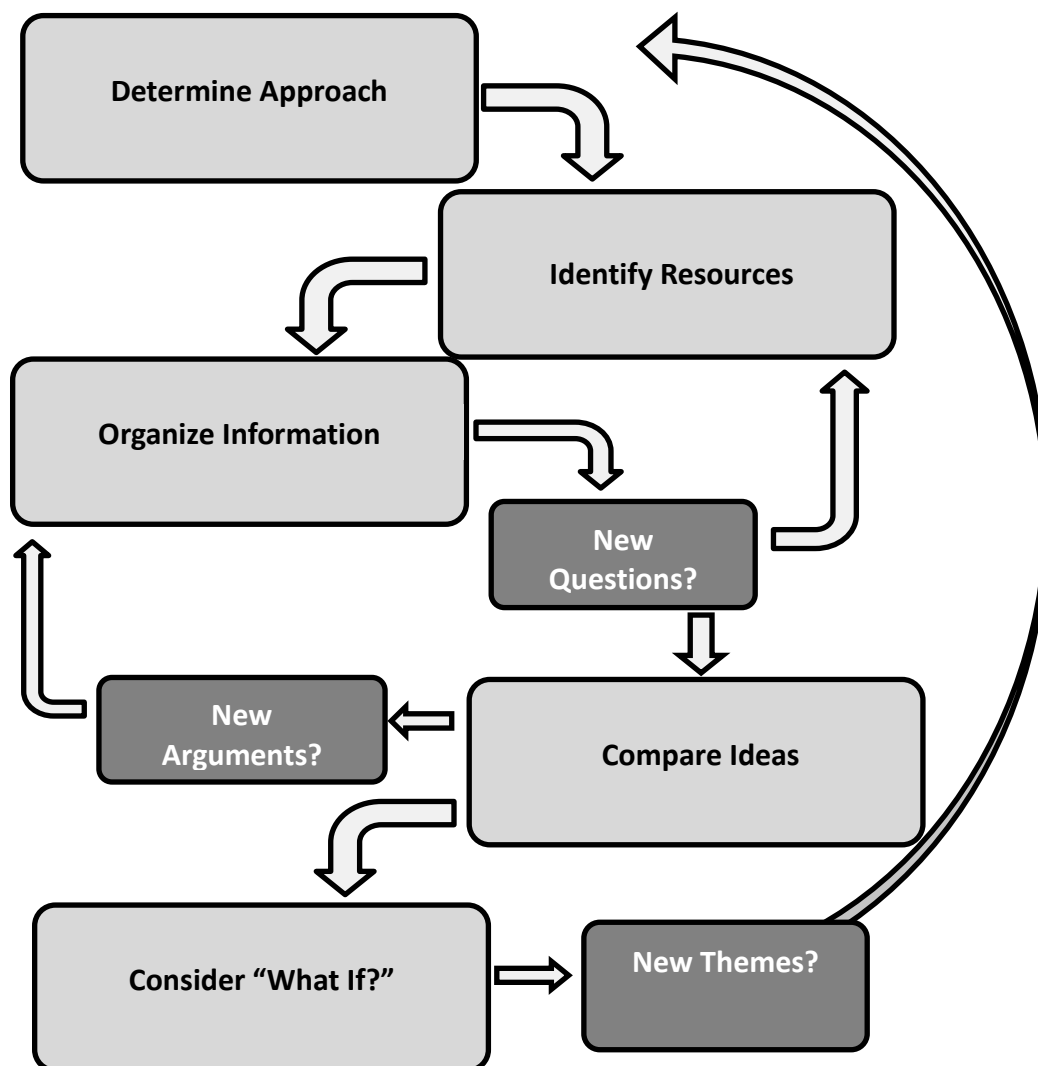
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Strategies for Research

It has been said that research is the “unofficial” first step of the problem solving process. Research gives an understanding of the topic and a “jumping-off point” when presented with a Future Scene. Although students do not use every piece of information they find for each topic, a broad base of knowledge is important. A well-rounded understanding of the past and current status of a topic allows students to better extrapolate those concepts into the future. A solid knowledge base serves students well beyond FPS competitions and often sparks ideas for school projects, creative writing, and beyond. The Categories of Knowledge section that follows can be applied to each step of the research process to expand thinking and approach themes from new or nonobvious directions.

A goal of Future Problem Solving is to understand the topic from which the problem arises, as well as the problem itself. Gathering knowledge is a life-long pursuit and thus a never-ending cycle. There are effective strategies to follow logical paths of inquiry and manage the information gained in a useful manner.



Determine Approach

Determine what you already know about the topic. Generate thoughts about your knowledge as a group. Discuss thematic vocabulary that will help you locate and understand your resources. At the beginning of each topic, consider an online collaboration site to gather and organize main concepts discovered by research.

- If more than one person is working on the topic, divide up the research responsibilities. One person might do interviews, one person might search through magazines, one person might search for videos.
- Organize bookmarks and use them. Every time you find an article, video, or infographic on the topic, save the information to your online account to share with your team.
- Set time limits on your research. Deadlines often create higher productivity and efficiency.
- Online collaboration tools are beneficial to organize and discuss information.
 - www.nowcomment.com
 - www.diigo.com
 - Virtual Classrooms – [Google](#), [Microsoft](#), etc.
 - www.edmodo.com
 - www.slack.com
 - www.livebinders.com

Identify Resources

Researching a subject thoroughly goes well beyond a single article or a chapter in a book. Consider a wide range of sources to gather a wide range of ideas and opinions.

Articles – Read everything you can get your hands on - both online and in print. Magazines, books, pamphlets, newspapers, and blogs are a few suggestions. Specific sources may include:

- News articles – consider local, national, international, and specialty papers
- Futuristic periodicals – The Futurist, Discover, Futurism, etc.
- Library searches – librarians can identify sources you did not even know exist
- Internet searches – use key terms and concepts you know to search a larger spectrum

People – Talk with the people around you. Interview topic stakeholders, people who impact and are impacted by a topic. Other students, parents, teachers, librarians, and professionals in the field possess both research information and a wealth of creative ideas and opinions.

Contacting people is an excellent way to compile a variety of ideas.

- Researchers
- Professionals
- General public

Media – Watch and listen to the things around you - videos, movies, TV shows, commercials, radio shows, podcasts, etc., to gather valuable information on a topic. Look for nonfiction as well as fiction.

- Newsmagazine shows – NZ Story, 60 Minutes, 20/20, Frontline, Panorama

Organize Information

After collecting a large volume of information, the organization process helps one to make sense of all the ideas. It also serves as a useful way to help one remember new knowledge. Similar items may be grouped together. Or consider pairing competing ideas. One of the best ways to organize information is to categorize it. As you organize ideas new questions may arise or underrepresented

concepts may emerge. Identify new resources to help fill in these gaps.

Compare Ideas

Think about and discuss the reliability of the information gathered. Are you gathering the information with any kind of personal bias about the topic? Are sources of information about the topic biased in any way? In order to know what to trust, it's important to consider the source and slant of the information being gathered. When examining resources, discriminate between those with hard facts and those that offer only biased opinions. While both types of information can be useful, keep in mind that fact and opinion are not necessarily interchangeable.

- Who is presenting the argument? Do they have a personal interest?
- Who has endorsed or requested the information?
- Are all opinions represented?

Consider "What If?"

Understanding the present allows students to move forward in identifying future images. Future images can be structured in many ways – possible, probable, preferable, and unfavorable. With the knowledge gained from your research, consider what the future might look like.

- What do you want the future to look like?
- What do you hope does not happen?
- What happens if a likely advancement occurs? What if it doesn't?
- What would an unexpected future look like?

Categories of Knowledge

Organizing information helps make sense of the knowledge gained, to see how it all fits together. The goal of categorizing is to highlight connections between various pieces of information. Several types of category lists exist. You might pick one of the following ways to generate a list of people to contact for interviews. Another might help you identify common themes among the research you have collected. Categories are useful in understanding the information you gather.

Categories prepared for a specific subject

A Concept Map is beneficial in organizing information. Issues relating to the topic are organized under the topic with like items recorded together. A Concept Map example (Futures Wheel) is located in the Appendix.

The FPS Category List

Almost any issue will fit into at least one of the categories on the FPS Category List provided on the next page. The FPS Category List usually serves as a sufficient starting point for identifying categories for any topic. Keep in mind, however, not every topic has information related to every category on this list.

Categories you generate on your own

You may decide to generate your own category list by generating a sufficient number of categories to classify the information. Are there consistent subsets of a topic that emerge from your research? Do not divide the information into so many parts that the category list becomes a useless form of classification.

Categories that are generic systems of classification

When categories are not emerging easily, turn to some “tried and true” systems of classification. “Animal, Vegetable, Mineral” is an example of a generic system of classification. “Causes, Effects” is another. “Physical, Mental, Spiritual” is a third. You may want to make a list of other generic systems of classification you could use if more specific systems do not cause trends in the information to emerge.

FPS Category List

Arts & Aesthetics



Basic Needs



Business & Commerce



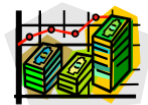
Communication



Defense



Economics



Education



Environment



Ethics & Religion



Government & Politics



Law & Justice



Miscellaneous



Physical Health



Psychological Health



Recreation



Social Relationships



Technology



Transportation



Tools for Generating

Generating tools are used to create new and unique ideas. Although they are often used in creating challenges and solution ideas during the problem solving process, these tools are useful when researching a topic. The most commonly known generating tool is brainstorming and its variations. As you read articles in *Readings, Research, and Resources*, use these tools to help you generate ideas to examine a wide range of ideas.

Generating Guidelines

When generating ideas, it is important to keep four guidelines in mind:

- **No Evaluation** should be given while generating ideas. Both criticism and praise are ruled out. Evaluation of ideas comes at a later time.
- **Quantity** is important. The larger the number of ideas, the greater the chance of reaching the best ideas!
- **Hitchhiking** is encouraged. Combining and improving ideas leads to great possibilities. When generating ideas, the sum is definitely greater than its individual parts.
- **Wild and Crazy** ideas can be very productive. Offbeat and silly ideas may trigger practical breakthroughs.

Ladder of Abstraction

When considering a concern or challenge, this tool is used to broaden or narrow the search for possibilities and new options. Broader or more abstract ideas emerge as you state your concern at the bottom of the ladder and work up the ladder, asking “why;” narrower or more specific options emerge as you work down the ladder, asking “how” you will address your concern.

Morphological Matrix

Using a chart with 4 columns and 6 rows, team members identify four major aspects (for example - people, setting, obstacle, goal) of the topic and place across the top row (one per column). Next ten specific topic related elements of each heading are listed in the columns. Random combinations are then formed to create new and interesting possibilities.

SCAMPER

This tool is used to change the attributes of an idea by: **S**ubstituting, **C**ombining, **A**dapting/**A**dding/**A**ltering, **M**inifying/**M**agnifying, **P**utting to other uses, **E**liminating/**E**laborating, **R**eversing/**R**earranging/**R**educing.

Silent Brainwriting

Each team member has a sheet of paper with 3 columns and 4 rows (12 boxes). Each person generates three ideas related to the topic, writing one idea in each of the boxes in the first row. Next, the sheets are passed around the group so the ideas can be read and new ideas are added, row by row, until all sheets are filled and all ideas have been read.

Tools for Focusing

Focusing tools are used to evaluate, compare, categorize, and highlight ideas. Simply gathering a large volume of information is not helpful, if you are not able to analyze it and focus on central concepts.

Focusing Guidelines

Focusing tools aid in selecting an idea that is workable, relevant, and unique. The following guidelines will help you focus:

- **Use affirmative judgment** to be thorough but positive when analyzing, refining, or choosing possibilities.
- **Follow a plan** and use the tools that assist in focusing.
- **Keep an eye on the goal** to focus on what is wanted and needed in order to accomplish the goal.
- **Stay open to all ideas** that might be workable. Look for new and unusual possibilities.

Identifying Hits

Read through your generated ideas and identify those which are on target for your goal. Develop your “hits” into complete ideas.

Hot Spots

Identify clusters of ideas that share common elements. Discuss how the ideas are similar. How are they different? Which will be most useful for your needs?

Advantages, Limitations (to overcome), Unique Potentials (ALoU)

Consider the advantages of each idea and the limitations you will need to overcome when dealing with the topic. Look for unique potentials one idea may have as compared to another.

Sequencing

Arrange options or possibilities in logical order. One example is time frame for completion (short range, medium range, long range). This is especially useful in developing an Action Plan.

Paired Comparison Analysis (PCA)

When considering multiple possibilities, compare one possibility against another idea, one pair at a time, until all possible pairs have been analyzed. (Comparing A, B and C: A and B would be compared, then A and C, and finally, B and C.) As the favorite option is determined in the pair, a rank of 1, 2, or 3 is assigned according to degree of importance.

The Appendix contains examples of generating and focusing tools applied to the current topics. More resources can be found at www.creativelearning.com.

POVERTY

In the mid-1990s Birmingham, Alabama was one of the most rapidly growing cities in America. To make way for the many new buildings being constructed, the city had to destroy large areas of older buildings. Many of these older buildings provided homes for a major segment of the city's poor. To solve the problem of housing these people, city, state, and federal officials designed and built a planned community on the gently rolling hills outside the city. It was here in Roosevelt Hills (named for the president who had been a champion of the poor) that many of the poor people from Birmingham began to move in 2002.

120 apartment buildings, each designed for ten to twelve families, were constructed to house a total of 6,000 people. Small parks were created throughout the community. Areas were set aside for churches, shops, offices, etc. One high school, two intermediate schools, and four middle schools were also built. A high-speed monorail train linked Roosevelt Hills with Birmingham, so that people could easily get into the city for jobs.

Most of the residents selected to move to Roosevelt Hills were members of the underclass. The people of the underclass are the poorest of the poor and make up about 15% of the poor population. They are unemployed, have been supported by government welfare for several years, and seem to have little chance of escaping poverty.

The officials who planned and built Roosevelt Hills saw the new community as more than just a place to put the poor. They wanted it to be a model project, developed to break the cycle of poverty. They knew that the government welfare programs, begun in the 1960s to help the poor, had actually created a group of people who were dependent upon welfare for their survival. The plan was to wean the residents of Roosevelt Hills from welfare.

Therefore, every adult accepted as a resident of Roosevelt Hills was required to enroll in a job-training program with the intent of having a job within two years. Applicants also agreed to gradual decreases in their welfare payments until the payments stopped after five years. In exchange, they were given the right to live rent-free in Roosevelt Hills for as long as they wish. There was no penalty for not getting a job after two years, but job or no job, the welfare payments stopped after five years. Many people accepted these conditions, and the community was filled by 2003. Many are currently on lists, waiting for apartments to open up, so they can move to Roosevelt Hills.

It is now 2010. Roosevelt Hills is home for almost 9,000 people. The growth is due to a high birth rate, as well as people moving in with relatives and friends. Of the 4,127 adults residents, approximately 65% hold jobs. The absence of welfare money appears to have motivated many to work. Government welfare has stopped for all five-year (and longer) residents, and there are some who, without jobs, have no source of income. They rely on handouts from neighbors and relatives, or worse, from money received from illegal activities. They seem to place little value on education or hard work. This attitude is being passed on to their children, who do poorly in school and usually drop out of school in their early teens. The community's appearance ranges from tidy to slumlike. Some areas have been kept up, while others have degenerated badly with walls of the buildings covered with graffiti and trash littering the grounds.

You and your team members live in Roosevelt Hills, and you are concerned about the situation. Use your problem solving skills to examine the situation and develop an action plan.

Utilizing Quizlet



You can use Quizlet with or without creating a Quizlet account. There is also a Quizlet mobile app that you can download from your mobile app store.

When you follow to the links provided in the packet and enter the password you will see a screen with a header (as the picture shows).



The icons shown here allow you to do different things.



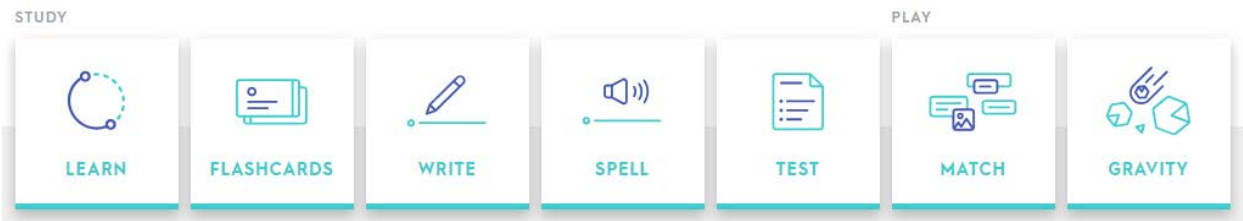
These buttons allow you to copy the set, if you have your own Quizlet account. Share the set, which should only be shared to your students. Or get information about the set.



If you hover over this button you will get options such as; scores, print, combine, export, and embed.

- The “scores” option would allow you to track your scores on games, if you were in your own Quizlet account.
- The “print” option allows you to print the set in many different formats, including printing them as flashcards on your own printer.
- The “combine” option will allow you to combine sets into 1 large group.
- The “export” option will allow you to export the set to a word file.
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In the study section you see icons for learn, flashcards, write, spell, and test.

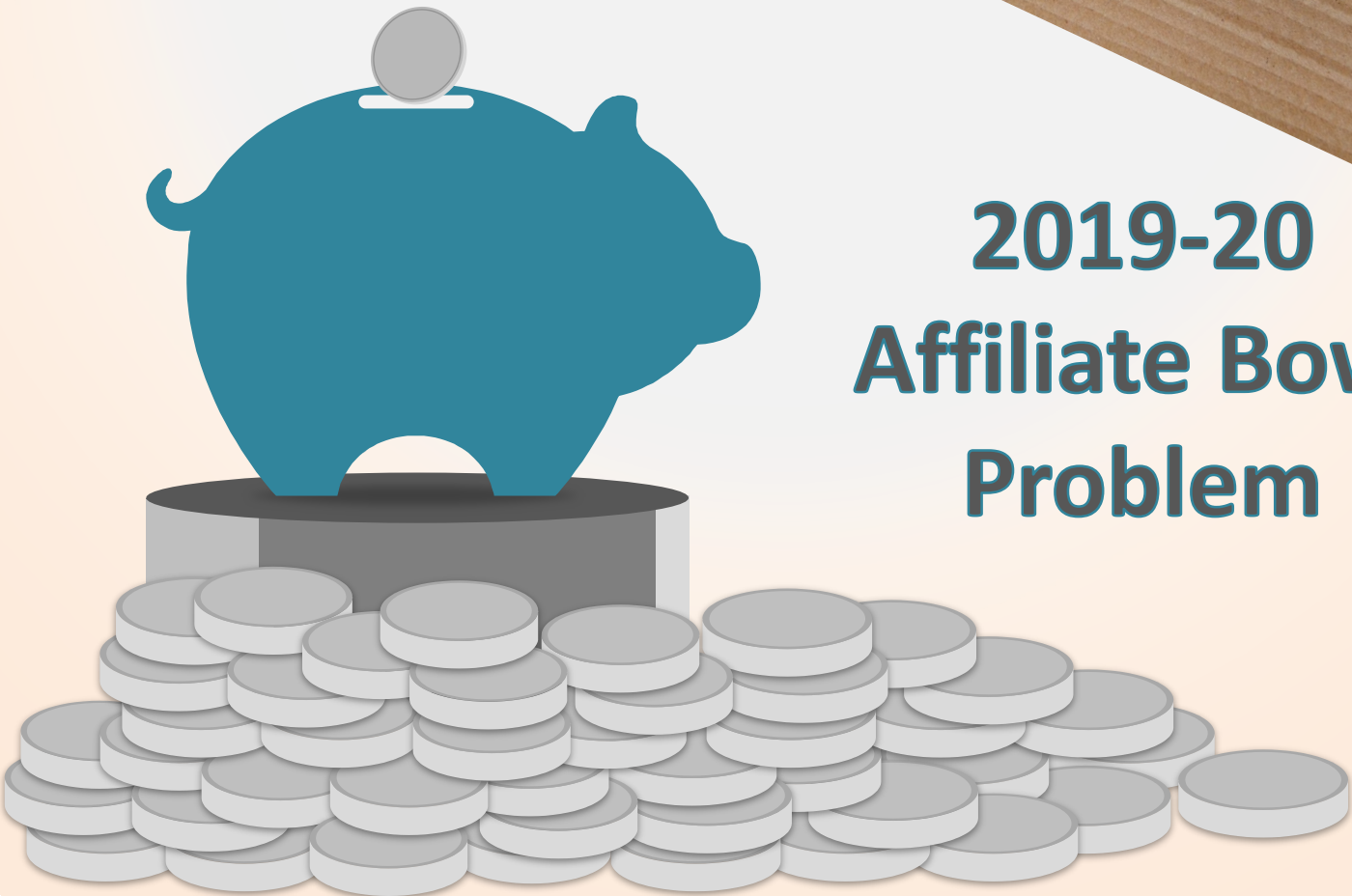
- The “Learn” option will give students short quizzes using some questions. The more they answer correctly the more points they receive.
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In the Play section you have the match and gravity options.

- The “Match” option randomly selects about 5 questions and asks students to match up the question with the proper answer by moving the items on the screen.
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Question & Answer Workbook



**2019-20
Affiliate Bowl
Problem**

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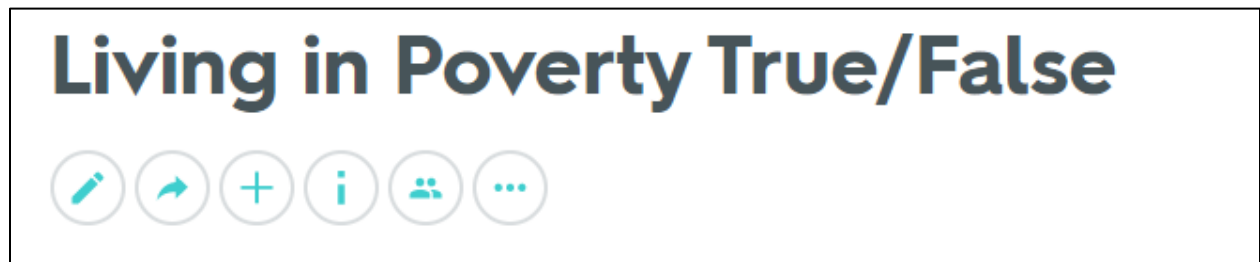
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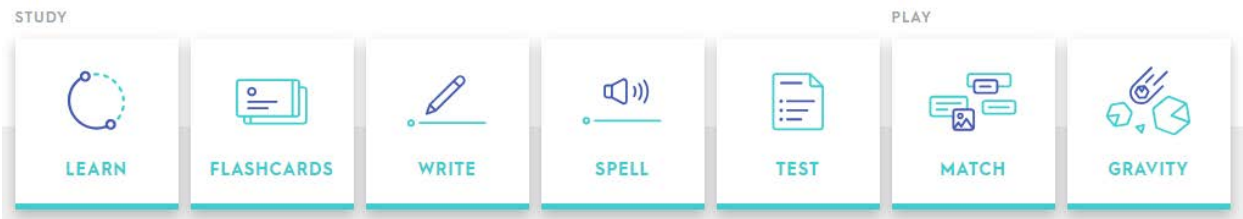
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Online/Mobile App Interactive Study Feature

Living in Poverty

This publication and the accompanying interactive features allow you to use the Question and Answer publication in a variety of ways with your students. Pages can be used as worksheet, flashcards can be printed from the Quizlet system, and students can play games with the content provided.

QUIZLET ONLINE

1. Go to the link below.

True/False

https://quizlet.com/_6ltf8q

Multiple Choice

https://quizlet.com/_6lth39

Fill-in the Blank

https://quizlet.com/_6ltlhf

2. Use this password:
1920ABrgj

MOBILE APP

1. Download the “Zappar” App from the app store.
2. Scan the code below.



3. Click on the type of question you want to study.
4. Use this password:
1920ABrgj

True/False Section



2019-20 AB
Living in Poverty

Living in Poverty

True/False Questions

1. Rural counties have shown the greatest increases in poverty over the last twenty years.
2. Within suburban areas of the United States, high-paying jobs tend to require specialized training.
3. In recent decades, suburban areas have shown great declines in population growth.
4. As of 2018, a majority of the 100 most populated metropolitan areas of the U.S. were meeting their Sustainable Development Goals (SDGs).
5. The most concentrated amount of extreme poverty around the globe has been found in Nigeria.
6. Countries with wealthy economies have not been found to have greater concentrations of extreme poverty than struggling economies.
7. The world's center of poverty recently shifted from Africa to Asia.
8. According to the Brookings Institution, Asia has the swiftest growing population of all major regions.
9. As of 2018, those seeking asylum in Britain receive aid from the government for less than a month.
10. According to The Independent, the world is currently experiencing a global refugee crisis.
11. Those struggling with poverty, according to The Independent, are at greater risk of exploitation by others than those possessing greater wealth.
12. Britain has the second largest economy in the world.
13. Between 2016 and 2017, the number of individual refugees and asylum seekers in Britain experiencing food poverty went up by 20%.
14. According to the Sydney Morning Herald, despite being ranked as one of the most equal societies by the OECD, Australia has not shown any major decreases in poverty in the last thirty years.
15. In Australia, both incomes and income inequality have risen in the last three decades.
16. In the United States, school districts are required to draw boundaries that maintain a balance of richer and poorer neighborhoods between the two neighboring districts.
17. The fifty most extreme school district borders in the United States separate two districts where one, on average, shows 28% higher poverty rates than the other.
18. In the 1970s, the U.S. Supreme Court ruled that states could not force desegregation across school district borders.
19. Over the last 40 years, wages have not increased for workers lacking a college education.

20. As of 2018, The New York Times noted that roughly one-third of the U.S. workforce does not have employer-offered health insurance.
21. Roughly one million babies die annually on the day they are born.
22. According to The New York Times, an important step for helping impoverished children find a better future is to get them out of poor neighborhoods.
23. A 2015 Harvard University study revealed that U.S. families who accepted government vouchers in the 1990s to leave poor neighborhoods did not experience noticeable benefits the longer they were in better neighborhoods.
24. The number of impoverished youth in Australia has fallen by 2% in the last decade.
25. The United States of America has shown the lowest rate of social mobility of all wealthy nations.
26. Individuals living in Hong Kong possess the longest life expectancy of any nation around the world.
27. 17% of Australia's children in 2017 were living in poverty.
28. Those experiencing poverty still tend to perform well in school.
29. Getting someone out of poverty increases the likelihood that they will have better health.
30. India presently has the greatest number of impoverished inhabitants.
31. According to the Boston Globe, the median net worth of Boston residents who are nonimmigrant families of color is the same as those for white families.
32. The Irish Times declared it important to provide mental health services to those in significant poverty.
33. Income disparity is not an issue of concern in the United States' battle against poverty.
34. Implementing a Universal Basic Income (UBI) system has been thought by some experts to be a viable option for eliminating poverty in a community.
35. The Basic Income Project is testing over five years how people respond when given free money.
36. Those going around to collect recyclable items for money in Hong Kong can be prosecuted.
37. Employees who do not receive sick-leave time from their jobs are much more likely to face food insecurity.
38. According to the Organisation for Economic Co-operation and Development (OECD), social mobility has stalled for the impoverished over the last thirty years.
39. The OECD has found that the wealthiest individuals of the world have not retained their fortunes.
40. It has been determined that adversity does not impact how person's genetic makeup is expressed.
41. Individuals born into a life of poverty do not have a greater chance of developing mental disorders than those not experiencing poverty.
42. It is thought that technological revolutions can jumpstart rapid economic growth in a community.
43. Bangladesh ranks first in technological advancement of all nations.

44. If Bangladesh were to digitize their land records system, it is thought they could decrease operating costs by 90%.
45. 40% of households in Haiti have access to the Internet.
46. In Zanzibar, a major player in reducing poverty is their honeybee population.
47. In Zanzibar, over 400,000 people live on less than \$1 each day.
48. The "absolute poverty line" is the most versatile method of determining poverty around the world.
49. As of 2017, extreme poverty noted that an individual made less than \$1.90 per day in 2011 U.S. dollars.
50. Poverty lines do not differ by country.
51. Most individuals experiencing poverty are able to participate fully in their societies.
52. One of the best ways of helping someone step out of poverty is reducing the upfront costs, delaying them for when the individual is more financially stable.
53. If someone earning \$150,000 annually had to spend the same percentage of their salary as an impoverished San Francisco resident does on four rolls of toilet paper, that purchase would cost an estimated \$58.
54. If someone earning \$150,000 annually had to spend the same percentage of their salary as an impoverished San Francisco resident does on a gallon of milk, the milk jug would cost an estimated \$23.50.
55. 10% of households residing in the San Francisco Bay Area were noted as living below the United States' federal poverty line in 2016.
56. According to Fast Company, 80% of the most impoverished individuals live in suburban areas.
57. 25% of the world's most arable land is located in Africa.
58. 45% of the globe's food supply is grown by Africa.
59. The World Economic Forum contends that the presence of poverty is vital to economic advancement.
60. In 2016, Fast Company revealed that boys who grew up in low-income families surrounded by significant poverty and large minority groups tended to work significantly less than girls.
61. The largest "floating slum" in the world is located in Lagos, Nigeria.
62. Across more than 50 countries, there were over 120 million individuals suffering from hunger crises in 2017.
63. Absolute poverty is the state of temporarily lacking basic human needs.
64. Economic mobility is the sharing of one's funds with others.
65. The poverty cycle tends to continue unless significant, external intervention takes place.
66. A subsidized lunch is, by definition, a lunch that is substandard compared to normal meals in terms of quality and/or nutritional content.
67. Relative poverty compares someone's wealth to other individuals' wealth within the same population.

68. It is estimated that, by 2030, 5% of the global population will still be struggling with extreme poverty.
69. Developing countries are typically seeking to become more advanced.
70. At present, the world is on track to eradicate poverty by 2030.
71. There is a "back-log" of 35 million people keeping the globe from being on track with the current international Sustainable Development Goals.
72. If the same pace of poverty reduction is kept as is shown today, the poverty rate is on track to be as low as 4%.
73. In 1981, the world's poverty rate was 42% of the global population.
74. Nearly all of the world's population lived in poverty in the 19th century.
75. Currently, the world is showing its lowest-ever percentage of people suffering from extreme poverty.
76. Those growing up in poverty tend to become fearful of risk.
77. A universal basic income gives individuals the right to a paycheck that meets all basic needs.
78. The World Poverty Clock estimates progress in the battle against poverty in real time.
79. By definition, someone in poverty lacks a job.
80. Chronic stress refers to stress that is contagious.
81. Child labor is oftentimes illegal or inhumane.
82. The state of having unreliable access to enough nutritious or affordable food is called "food insecurity."
83. Poverty has both negative physiological and negative psychological impacts.
84. If a child grows up in a low-income family, he or she is more likely to have a low income as an adult, too.
85. Poverty is only measurable in relation to others.
86. Poverty is only measurable in an absolute manner.
87. Poverty does not have an impact on one's ability to have a voice on important matters.
88. Those living in poverty have an increased risk of depression.
89. In America, any person who works hard will not experience poverty.
90. Poverty, at the root, is a simple concept that can be easily eliminated.

Multiple Choice Section



2019-20 AB
Living in Poverty

Living in Poverty

Multiple Choice Questions

1. Since 1990, U.S. poverty rates have grown in suburbs by _____.
 - A. 15%
 - B. 35%
 - C. 50%
 - D. 75%
2. Since 2000, _____ areas of counties have experienced the greatest amount of poverty growth.
 - A. exurban
 - B. rural
 - C. suburban
 - D. urban
3. In 2015, the United Nations created the _____.
 - A. Special Dietary Goals
 - B. Specialized Development Group
 - C. Structured Data Group
 - D. Sustainable Development Goals
4. As of 2018, at least _____ of the 100 most populated metropolitan areas of the U.S. were not even halfway toward meeting the urban-area SDGs declared by the United Nations.
 - A. 25
 - B. 40
 - C. 60
 - D. 85
5. According to The Guardian, _____ of the world's countries still showing increasing amounts of extreme poverty are in Africa.
 - A. 26%
 - B. 48%
 - C. 62%
 - D. 77%

6. According to the Brookings Institution, Africa's current struggles with extreme poverty has been tied to the slow rise of _____.
- A. conflict and population growth
 - B. economic and social issues
 - C. governmental struggles
 - D. all of the above
7. Extreme poverty in Nigeria is increasing at a rate of _____ people per minute.
- A. 6
 - B. 12
 - C. 24
 - D. 36
8. 4,000 school district borders in the United States divide two school districts that differ in their poverty rates by at least _____.
- A. 8%
 - B. 14%
 - C. 19%
 - D. 28%
9. Productivity in the U.S. has grown by 75% in the U.S. since 1973, and during the same time hourly wages have increased by _____.
- A. 12%
 - B. 25%
 - C. 39%
 - D. 57%
10. An estimated 33% of U.S. employees earn less than _____ per hour.
- A. \$9.50
 - B. \$12
 - C. \$14.50
 - D. \$17
11. An example job held by the working poor would be _____.
- A. stocking grocery store items
 - B. taxi driving
 - C. working in a daycare center
 - D. all of the above

12. According to the Brookings Institution, _____ of impoverished U.S. residents were elderly in 2016.

- A. 5%
- B. 11%
- C. 25%
- D. 33%

13. Roughly _____ of U.S. residents suffering from poverty were either working or in the process of seeking employment.

- A. 25%
- B. 33%
- C. 50%
- D. 75%

14. The SafariSeat utilizes bicycle parts to create _____ for developing or rural areas.

- A. car seats
- B. computers
- C. traps
- D. wheelchairs

15. The Guardian notes that automated decision-making systems can "outsource" difficult human decisions, especially those involving the determination of which individuals receive life-saving resources, by serving as _____ overrides.

- A. dedication
- B. empathy
- C. ethical
- D. moral

16. Roughly _____ of Australia's 3 million impoverished residents are youth below the age of 15 years.

- A. 280,000
- B. 730,000
- C. 1.3 million
- D. 1.7 million

17. Reducing poverty has been linked to better _____.

- A. education outcomes
- B. employment
- C. health and wellness
- D. all of the above

18. As of May 2018, there were _____ impoverished individuals living in India and _____ living in Nigeria.
- A. 73 million; 87 million
 - B. 87 million; 73 million
 - C. 19 million; 52 million
 - D. 52 million; 19 million
19. According to the Boston Globe, the median net worth of Boston residents who are nonimmigrant families of color is _____.
- A. \$8
 - B. \$45,000
 - C. \$92,000
 - D. \$247,500
20. According to the Boston Globe, the median net worth of Boston residents who are white families is _____.
- A. \$8
 - B. \$45,000
 - C. \$92,000
 - D. \$247,500
21. In Hong Kong, there are roughly 1,000 senior citizens known as " _____ " grannies.
- A. business
 - B. cardboard
 - C. dumpster
 - D. tin can
22. The average life expectancy in Hong Kong is _____ for women and _____ for men.
- A. A. 92.5 years; 87.3 years
 - B. B. 98.5 years; 81.3 years
 - C. 87.3 years; 81.3 years
 - D. 81.3 years; 87.3 years
23. _____ of Hong Kong's elderly inhabitants are living in poverty.
- A. 15%
 - B. 25%
 - C. 33%
 - D. 50%
24. According to Wired, _____ is not a top priority in the poorest nations.
- A. improving healthcare
 - B. improving infrastructure
 - C. improving schools
 - D. improving technology

25. _____ of residents in Haiti have access to mobile internet.
- A. Less than 1%
 - B. 4%
 - C. 15%
 - D. 35%
26. _____ of Haitian households have access to general Internet coverage.
- A. Less than 1%
 - B. 4%
 - C. 15%
 - D. 35%
27. According to The World Bank, at least _____ people in 1990 were living in poverty around the globe.
- A. 50 million
 - B. 500 million
 - C. 1 billion
 - D. 1.5 million
28. Those experiencing poverty are more likely to experience _____.
- A. lack of food
 - B. lack of sleep
 - C. lack of time
 - D. all of the above
29. A San Francisco resident living below the poverty line would spend more than _____ of one's weekly wages on a gallon of milk.
- A. 1%
 - B. 5%
 - C. 9%
 - D. 12%
30. A San Francisco resident, in 2016, had to work _____ minimum-wage job(s) to safely pay one's bills.
- A. 1
 - B. 2
 - C. 3
 - D. 4
31. Africa contributes _____ of the globe's food and contains _____ of world's plowable land.
- A. 10%; 25%
 - B. 18%; 20%
 - C. 25%; 35%
 - D. 15%; 40%

32. 65% of residents living in Lagos, Nigeria do not have access to reliable sources of _____.
- A. clean water
 - B. electricity
 - C. sanitation
 - D. all of the above
33. Business Insider revealed in 2017 that the number of individuals living in extreme poverty is _____ compared to those impoverished in 1970.
- A. two times greater
 - B. two times lower
 - C. three times lower
 - D. four times greater
34. In 2018, Save the Children noted that there were _____ children at risk of death from extreme starvation in war zones around the world.
- A. 9,000
 - B. 600,000
 - C. 1 million
 - D. 3 million
35. _____ people were able to escape extreme poverty as of July 2018.
- A. 752,000
 - B. 15 million
 - C. 45 million
 - D. 83 million
36. Roughly _____ of the globe's 1.1 billion people lived in poverty in 1820.
- A. 40 million
 - B. 240 million
 - C. 570 million
 - D. 1 billion
37. In 1950, _____ of the world's population struggled with poverty.
- A. 33%
 - B. 52%
 - C. 74%
 - D. 91%

38. Those in poverty who do not have the ability to escape a particular situation on their own are most precisely victims of " _____ " according to economists.

- A. absolute poverty
- B. disposable income
- C. global inequality
- D. the poverty trap

39. Which of the following countries are testing out a universal basic income?

- A. Canada
- B. Finland
- C. Kenya
- D. all of the above

40. When someone doesn't have enough food to maintain appropriate nutrition and development, they would be considered _____.

- A. depressed
- B. insecure
- C. malnourished
- D. subsidized

41. Young people living on the streets due to poverty or homelessness are often known as _____.

- A. cardboard grannies
- B. child laborers
- C. street children
- D. the working poor

42. Not having consistent or reliable access to food that is affordable and nutritious leads to _____.

- A. absolute poverty
- B. extreme poverty
- C. food insecurity
- D. poverty traps

43. Poverty often leads to _____.

- A. exclusion
- B. powerlessness
- C. both A and B
- D. neither A nor B

44. _____ has an active goal of eliminating international poverty.

- A. The World Bank
- B. The United Nations
- C. both A and B
- D. neither A nor B

45. Within the next 12 years, the Brookings Institution contends that _____ of the most impoverished humans around the globe will live in Africa.
- A. 60%
 - B. 70%
 - C. 80%
 - D. 90%
46. Poverty between the Democratic Republic of the Congo and Nigeria are increasing at a rate of _____ people per minute.
- A. 4.6
 - B. 9.3
 - C. 12.5
 - D. 17.8
47. _____ more poor people found themselves in poverty within Africa in 2017.
- A. 87,000
 - B. 359,000
 - C. 2.4 million
 - D. 7.1 million
48. It would take reducing poverty at a rate of _____ people per minute in Africa to be on track with poverty reduction goals.
- A. 4.6
 - B. 9.3
 - C. 12.5
 - D. 17.8
49. In 1981, _____ of the global population lived in extreme poverty.
- A. 21%
 - B. 44%
 - C. 62%
 - D. 81%
50. Mahatma Gandhi saw poverty as "the worst form of _____."
- A. despair
 - B. exclusion
 - C. oppression
 - D. violence

51. "Economic _____" is the ability to change one's economic circumstances.
- A. charity
 - B. inheritance
 - C. mobility
 - D. stigma
52. Children born into poverty can _____.
- A. experience impacts prenatally
 - B. find themselves at higher risks of mental disorders
 - C. still encounter a variety of struggles as adults
 - D. all of the above
53. _____ describes one experiencing mental or physical fatigue to the extreme.
- A. Depression
 - B. Eradication
 - C. Exhaustion
 - D. Insecurity
54. To designate something as " _____ " means that it pertains to the countryside.
- A. exurban
 - B. rural
 - C. suburban
 - D. urban
55. To designate something as " _____ " means that it pertains to the city.
- A. exurban
 - B. rural
 - C. suburban
 - D. urban
56. To designate something as " _____ " means that it pertains to a residential area that lies just beyond the city.
- A. exurban
 - B. rural
 - C. suburban
 - D. urban
57. The World Poverty _____ is the tool utilized for gathering current estimates for how well poverty is being battled against in most of the world.
- A. Calculator
 - B. Clock
 - C. Tracker
 - D. Trap

Fill-in Section



Fill in the

Blank

2019-20 AB
Living in Poverty

Living in Poverty

Fill-In the Blank Questions

1. The trend of poverty increasing outside of U.S. city centers has created a reality known as the "_____ of poverty."
2. To help reduce poverty, it is recommended that funding be increased for human _____ programming.
3. The United States' strongest-performing metropolitan area has only reached _____% of the United Nations' Sustainable Development Goals.
4. As of April 2019, the United Nations had _____ Sustainable Development Goals.
5. Extreme poverty is decreasing in India at a rate of _____ people per minute.
6. The transfer of funds from middle-income to lower-income individuals is known as a "_____ churn."
7. According to The New York Times, the decline of _____ has been blamed for U.S. workers not receiving a fair share of the profits they bring to employers.
8. Roughly _____ of the U.S. workforce earns less than \$12 per hour.
9. According to The New York Times, 7.6 million Americans were considered part of the "_____ poor."
10. In 2016, the Brookings Institution found that 33% of impoverished individuals living in the U.S. were _____.
11. The Guardian noted that algorithms can be used as a "moral _____" in order to determine which struggling families or individuals should receive scarce supplies or support.
12. India lost the status of holding the largest numbers of impoverished residents to Nigeria in _____.
13. In the United Kingdom, poverty for children tends to emerge most often in traveler and _____ families.
14. In Hong Kong, an estimated _____ of elderly residents live in poverty.
15. It is expected that the Democratic Republic of the Congo will become the _____ concentrated area of poverty.
16. The goal of British charity Barnardos seeks for the United Kingdom to provide _____ services to the impoverished.

17. The United Nations Special Rapporteur for human rights and extreme poverty declared that "the American dream is rapidly becoming the American _____."
18. According to Wired, economic experts believe the U.S. is being torn apart by income _____.
19. A Universal Basic _____ system would involve having a negative income tax or direct cash payment given to those in need within a society.
20. Florida State University found that there is a direct correlation between poverty and the absence of _____ time.
21. Those experiencing poverty tend to focus less on long-term planning and more so upon immediate _____.
22. GirlsCoding seeks to reduce the gender _____ in the field of computer programming.
23. October 17th is known as the International Day for the _____ of Poverty.
24. Global poverty reduced as more and more countries became _____.
25. At present, the world contains the lowest total number of humans living in extreme poverty in more than _____ years.
26. The inability to write or read is known as _____.
27. The average total number of years a person may anticipate living is known as one's life _____.
28. The lowest, legally allowed wage in an area is known as the _____ wage.
29. When someone's development or overall health is hindered due to lack of nutritional foods, the individual would be considered _____.
30. To allow poverty, according to the United Nations, is to allow a violation of human _____.



Answers



2019-20 AB Living in Poverty

Living in Poverty

True/False Answers

- | | | | |
|-----------|-----------|-----------|-----------|
| 1. False | 24. False | 47. True | 70. False |
| 2. True | 25. True | 48. False | 71. True |
| 3. False | 26. True | 49. True | 72. True |
| 4. False | 27. True | 50. False | 73. True |
| 5. True | 28. False | 51. False | 74. True |
| 6. False | 29. True | 52. True | 75. True |
| 7. False | 30. False | 53. False | 76. True |
| 8. False | 31. False | 54. True | 77. True |
| 9. True | 32. True | 55. True | 78. True |
| 10. True | 33. False | 56. False | 79. False |
| 11. True | 34. True | 57. True | 80. False |
| 12. False | 35. True | 58. False | 81. True |
| 13. True | 36. True | 59. False | 82. True |
| 14. True | 37. True | 60. True | 83. True |
| 15. True | 38. True | 61. True | 84. True |
| 16. False | 39. False | 62. True | 85. False |
| 17. True | 40. False | 63. False | 86. False |
| 18. True | 41. False | 64. False | 87. False |
| 19. True | 42. True | 65. True | 88. True |
| 20. True | 43. False | 66. False | 89. False |
| 21. True | 44. True | 67. True | 90. False |
| 22. True | 45. False | 68. True | |
| 23. False | 46. True | 69. True | |

Living in Poverty

Multiple Choice Questions

1. C. 50%
2. C. suburban
3. D. Sustainable Development Goals
4. C. 60
5. D. 77%
6. D. all of the above
7. A. 6
8. B. 14%
9. A. 12%
10. B. \$12
11. D. all of the above
12. B. 11%
13. A. 25%
14. D. wheelchairs
15. B. empathy
16. B. 730,000
17. D. all of the above
18. A. 73 million; 87 million
19. A. \$8
20. D. \$247,500
21. B. cardboard
22. C. 87.3 years; 81.3 years
23. C. 33%
24. D. improving technology
25. A. less than 1%
26. B. 4%
27. C. 1 billion
28. D. all of the above
29. A. 1%
30. D. 4
31. A. 10%; 25%
32. D. all of the above
33. C. three times lower
34. B. 600,000
35. D. 83 million
36. D. 1 billion
37. C. 74%
38. D. the poverty trap
39. D. all of the above
40. C. malnourished
41. C. street children
42. C. food insecurity
43. C. both A and B
44. C. both A and B
45. D. 90%
46. B. 9.3
47. C. 2.4 million
48. A. 4.6
49. B. 44%
50. D. violence
51. C. mobility
52. D. all of the above
53. C. Exhaustion
54. B. rural
55. D. urban
56. C. suburban
57. B. Clock
58. C. tension
59. D. Stigmas
60. D. Relative

Living in Poverty

Fill-In the Blank Answers

1. suburbanization
2. service
3. 68%
4. 17
5. 44
6. welfare
7. unions
8. one-third
9. working
10. children
11. thermometer
12. 2018
13. single-parent
14. one-third
15. second-most
16. adequate
17. illusion
18. disparity
19. Income
20. sick-leave
21. rewards
22. gap
23. Eradication
24. industrialized
25. 200
26. illiteracy
27. expectancy
28. minimum
29. malnourished
30. dignity

