

# Executive Function

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LCPS Parent Resource Services

# Agenda

- What are Executive Functions?
- The cause of deficits in Executive Functions
- What Executive Function challenges look like at home and school
- Strategies for learning Executive Function skills
- Strategies for compensating for deficits in Executive Function skills

# What are Executive Functions?

- Provides us with the ability to decide what activities and tasks we will pay attention to and which ones we will choose to do
- Allows us to organize our behavior over time and override immediate demands in favor of long-term goals
- Allows us to plan and organize tasks, change our behavior to meet evolving demands, and persist to complete tasks
- Enables us to manage our emotions and monitor our thoughts in order to perform more efficiently and effectively



ORGANIZE, PRIORITIZE,  
ACTIVATE WORK

MONITOR AND  
SELF-REGULATE ACTIONS

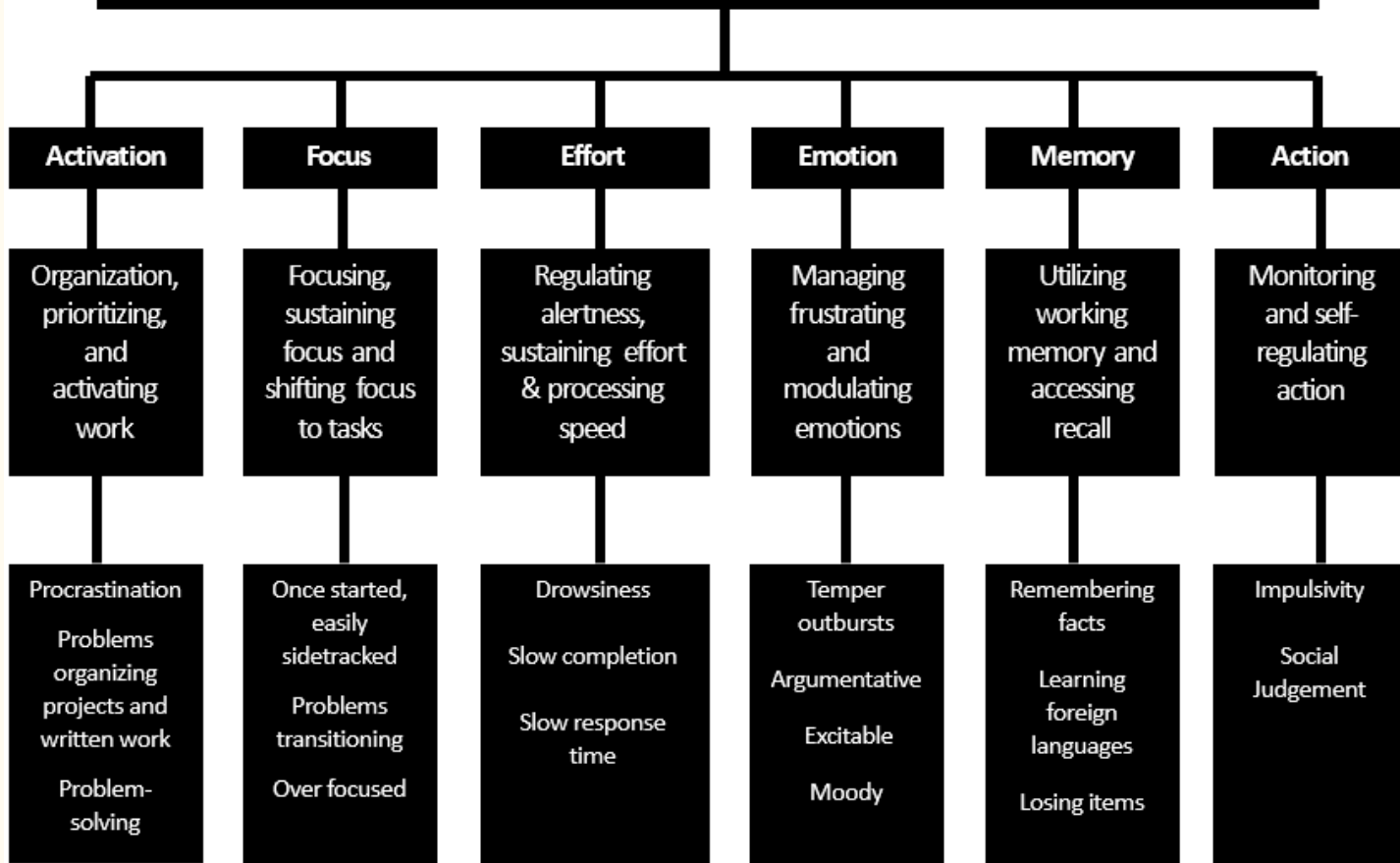
UTILIZE WORKING  
MEMORY & SHORT TERM  
RECALL

MANAGE FRUSTRATIONS  
AND MODULATE  
EMOTIONS

REGULATE ALERTNESS,  
SUSTAIN EFFORT AND  
SPEED

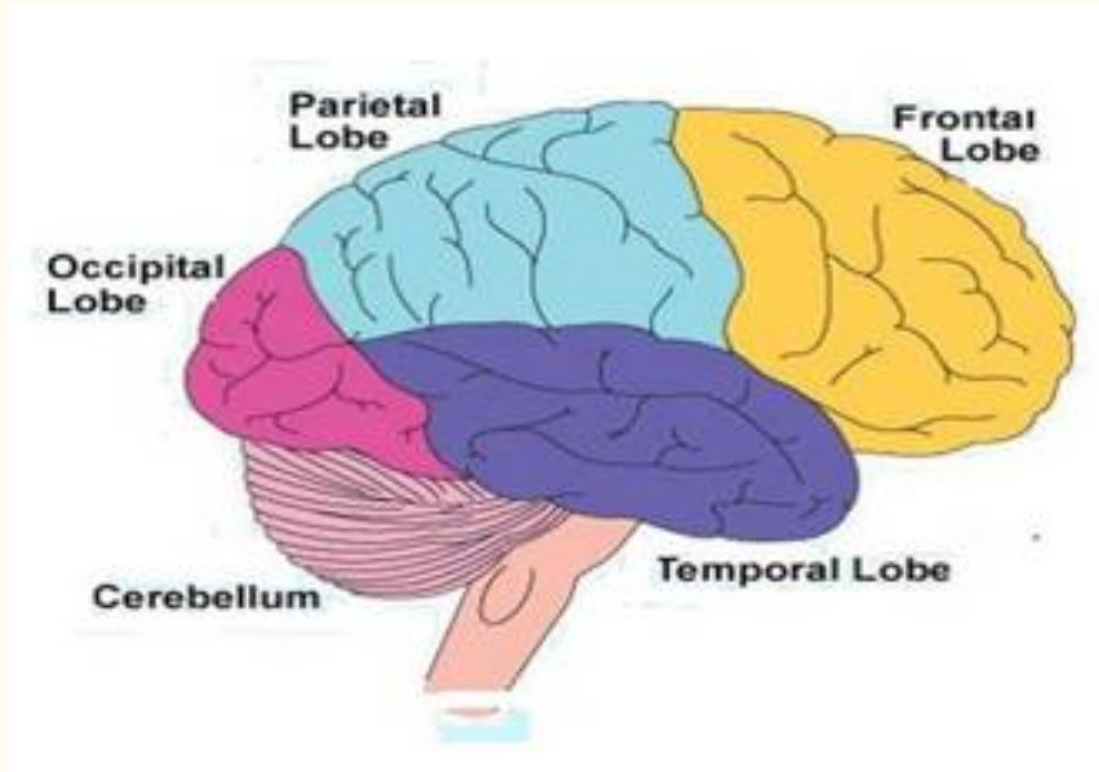
FOCUS, SUSTAIN AND  
ABILITY TO SHIFT TASK  
ATTENTION

# Problems Linked to Executive Functions



Executive Functioning Challenge	Area of Deficit
Rebecca has difficulty following the steps required to begin an assignment such as writing her name at the top of the page, and then following the directions to complete the assignment.	Memory
It takes Kareem 10 minutes to get his material out for class	Effort
Tosha is unable to prioritize which information to study when preparing for the test.	Activation
Julie cried and screamed this morning while getting ready for school because she could not find her favorite pair of socks.	Emotion
Sarah played with a girl or the first time on the playground. After playing, Sarah called the girl her best friend.	Action
Tom refused to leave the classroom at dismissal because he wanted to finish his assignment.	Flexibility

# The Causes of Deficits in Executive Function



# Executive Functions

**Response Inhibition**- The capacity to think before you act; the capacity to delay or inhibit responding based on the ability to evaluate multiple factors.

- Questions to consider:
  - Does the child:
    - Act impulsively, either verbally or physically?
    - Interrupt others?
    - Have difficulty waiting for their turn?





# Executive Functions

**Sustained Attention**- the capacity to maintain attention to a situation or task in spite of distractibility, fatigue, or boredom.

- Questions to consider:
  - Does the child:
    - Able to keep working despite distractions?
    - Stick with it long enough to complete tasks?
    - Take breaks that are either too frequent or too long?
    - Run out of steam before done?



# Executive Functions

**Working Memory**- the ability to hold information in mind while performing other tasks.

- Questions to consider:
  - Does the child:
    - Remember to hand in assignments?
    - Follow directions carefully? (may also be metacognition)
    - Write down assignments? (may also be metacognition)
    - Bring home appropriate materials? (may also be metacognition)
    - Remember classroom procedures?
    - Lose things?
    - Remember instructional sequences after normal instruction?



# Executive Functions

**Task Initiation**- the ability to begin a task in a timely fashion.

- Questions to consider:
  - Does the child:
    - Does the child get started on his own?
    - Get started at the expected time?
    - Restart tasks efficiently after interruptions or breaks?
    - Does the child need reminders to get started on homework?



# Executive Functions

**Planning**- the ability to create a roadmap to reach a goal or complete a task.

- Questions to consider:
  - Does the child:
    - Decide on a topic independently?
    - Decide what should come first, second, third, and so forth?
    - Break big assignments into smaller parts?
    - Develop a timeline



# Executive Functions

**Organization**- the ability to arrange or place things according to a system.

- Questions to consider:
  - Does the child:
    - Keep notebooks and papers organized?
    - Keep desk or bedroom tidy?
    - Keep belongings near and in the appropriate location?
    - Keep backpack organized?



# Executive Functions

**Time Management**- the capacity to estimate, allocate, and execute within time constraints.

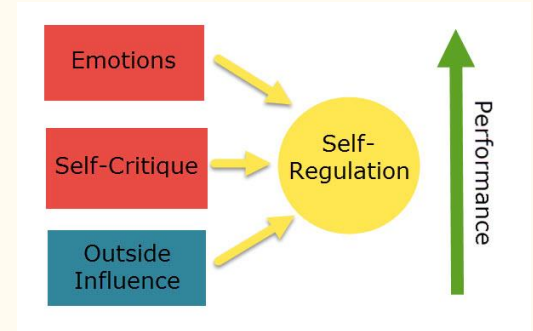
- Questions to consider:
  - Does the child:
    - Finish work on time?
    - Follow a timeline?
    - Estimate how long it will take to complete something?



# Executive Functions

**Self-Regulation of Affect**- the ability to manage emotions in order to achieve goals, complete tasks, or control and direct behavior.

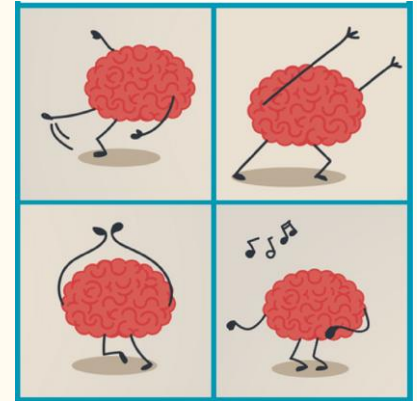
- Questions to consider:
  - Does the child:
    - Become upset easily in the face of adversity?
    - Throw temper tantrums when things do not come easily?
    - Shut down in the face of adversity?



# Executive Functions

**Flexibility**- the ability to revise plans in the face of obstacles, setbacks, new information or mistakes; it relates to an adaptability to changing conditions.

- Questions to consider:
  - Does the child:
    - Get stuck on one way of doing things, even if it's not working?
    - Try to solve the problem on his own before going to an adult?
    - Does the child try to access resources to help solve the problem?





# Executive Functions

**Metacognition**- the ability to stand back and take a bird's-eye view of oneself in a situation.

- Questions to consider:
  - Does the child:
    - Evaluate own performance and know whether the problem was solved successfully?
    - Know when they do not understand directions?
    - Ask for help when needed?
    - Recognize that they have a problem?



# Executive Function Challenges at School

- Initiating tasks
- Completing class work
- Completing long-term projects on time
- Following directions
- Getting organized
- Changing activities or classes
- Controlling emotions



# Executive Function Challenges at Home

- Getting ready in the morning
- Completing chores
- Maintaining a schedule
- Doing homework; studying; doing long-term projects
- Controlling impulsive behavior
- Handling changes in plans (flexibility)
- Learning to manage anxiety



# Interventions to Promote Executive Functions

Two Key Principles:

1. The developmental progression is from external to internal.
2. Individuals with Executive Dysfunction can be supported in one of two ways:
  - Intervention at the level of the environment
  - Intervention at the level of the person

# Strategies Teachers Use at School

- Task analysis: breaking down a task into its basic components
- Visuals as cues
- Memory tricks such as acronyms or mnemonics
- Shorten assignments
- Present information in a variety of modes: visually, auditorily

# Strategies for Learning Executive Function Skills



# Strategies for Learning Executive Function Skills



# Activities to build EF skills for toddlers and preschoolers

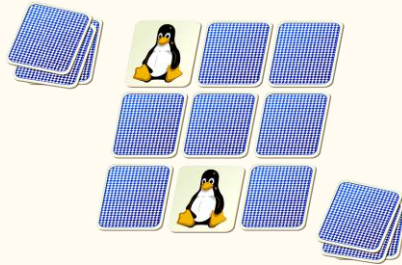
- Sorting games
- Songs with movement and repetition
- Simple puzzles





# Activities to build EF skills for elementary aged children

- Guessing games
- Board games and card games
- Simon says
- Minecraft

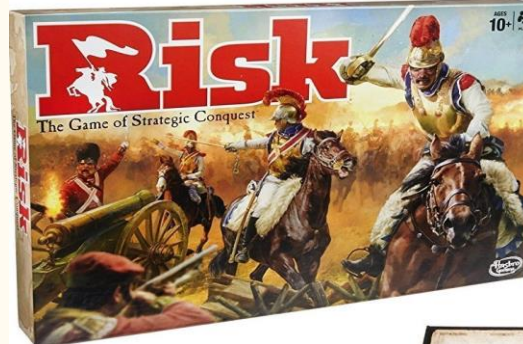


# Tips for Success for Young Children

- Early intervention is key
- Keep routines short
- Reduce the number of steps
- Use picture cues rather than written lists
- Be prepared to provide prompts and supervision. You may have to work side by side with your child

# Activities to build EF skills for teenagers

- Volunteering
- Journaling
- Board games



# Tips for Success for Older Children

- Make them full partners in the design of the routine, selection of rewards, and troubleshooting that may be needed to improve routines
- Be willing to negotiate rather than dictate
- Whenever possible use visual cues (could be written) rather than verbal cues-these seem a lot like nagging to older children

# Tips for Success for All Ages

- Create routines/procedures
- Set reminders (timers/alerts)
- Utilize visual supports
- Organize the environment
- Reduce clutter

# 10 Principles for Improving EF Skills

1. Teach deficient skills rather than expecting the child to acquire through observation
2. Consider your child's developmental level
3. Teach externally before the skill is learned internally
4. The external includes changes you can make in the environment, the task, or the way you interact with your child.
5. Use (rather than fight) the child's innate drive for mastery and control

# 10 Principles for Improving EF Skills

6. Modify tasks to match your child's capacity to exert effort
7. Use incentives to augment instruction
8. Provide just enough support for child to be successful
9. Keep supports and supervision in place until the child achieves mastery or success
10. When you do stop the supports, supervision, and incentives, fade them gradually

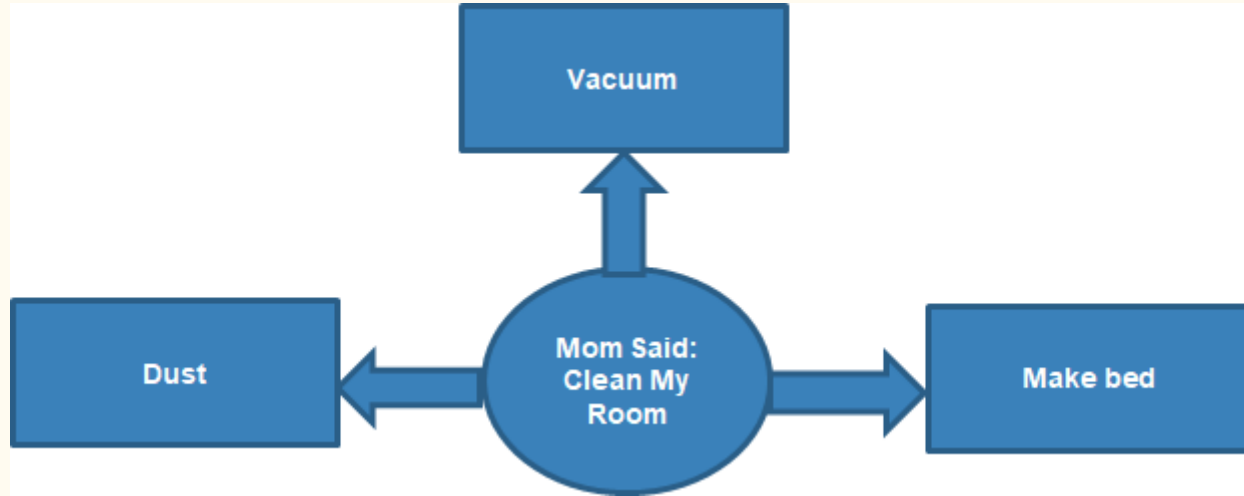
# Explicit Teaching/ Task Analysis Home & Community

Consider the steps for the following examples:

- Cleaning a bedroom
- Chatting in line at the store
- Waiting in line
- Finding an item in the store
- Eating in a restaurant
- Shopping at the mall
- Going to a movie



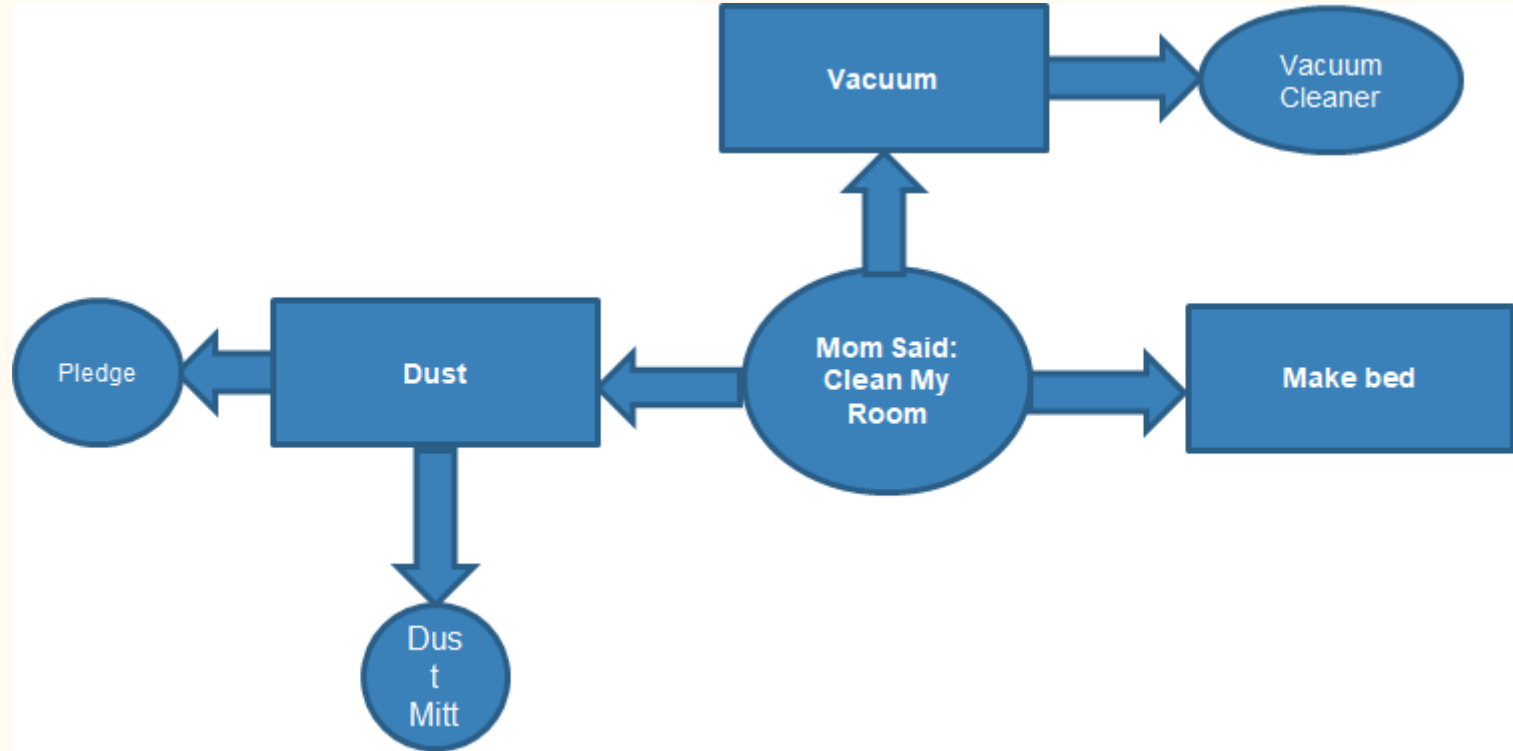
# Thinking Tool: Breaking it Down



# Identify Needed Materials

- After breaking a skill into “chunks” your child/student will need to identify materials for the task
- Practice this skill using the cluster organizer
- Once child has identified the needed materials, he should develop a materials list and use it to gather materials in advance (into a task box if appropriate)

# Thinking Tool: ID Materials



# Materials Checklist

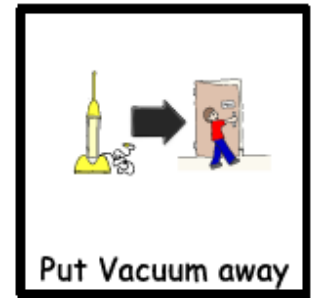
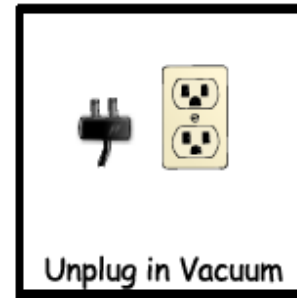
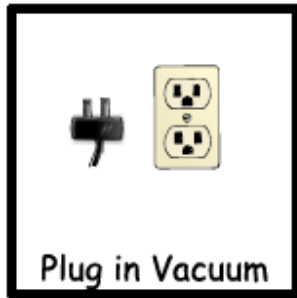
Materials Needed	
Dust mitt	✓
Pledge	
Vacuum	

# Ordering Steps

- Steps or “chunks” need to be put into a logical order
- Ordering involves sequential thinking
  - Teach child to utilize a sequential organizer or checklist to complete the process of putting the steps in order
  - Then use the checklist as the “Action Plan” for completing the task

# Putting Chunks in Sequential Order

Physically moving the chunks into a logical order helps them understand sequencing...



# Strategies for Teaching EF Skills - Activation

## Organizing - Chunking Long Term Projects

Project Name \_\_\_\_\_

Objective \_\_\_\_\_

Elements/Parts

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_

Timeline Dates

1. finish by \_\_\_\_\_ 2. finish by \_\_\_\_\_

3. finish by \_\_\_\_\_ 4. finish by \_\_\_\_\_

# Strategies for Teaching EF Skills - Activation

Goal Setting,  
Prioritizing



My Goals!	
<input type="checkbox"/>	<input type="checkbox"/> Accomplished!
<input type="checkbox"/>	<input type="checkbox"/> Still improving.
<input type="checkbox"/>	<input type="checkbox"/> Accomplished!
<input type="checkbox"/>	<input type="checkbox"/> Still improving.
<input type="checkbox"/>	<input type="checkbox"/> Accomplished!
<input type="checkbox"/>	<input type="checkbox"/> Still improving.

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# Strategies for Teaching EF Skills - Activation

Problem Solving -  
Social Autopsy  
(cause & effect)

**Social Autopsies Worksheet**

Q

What happened? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

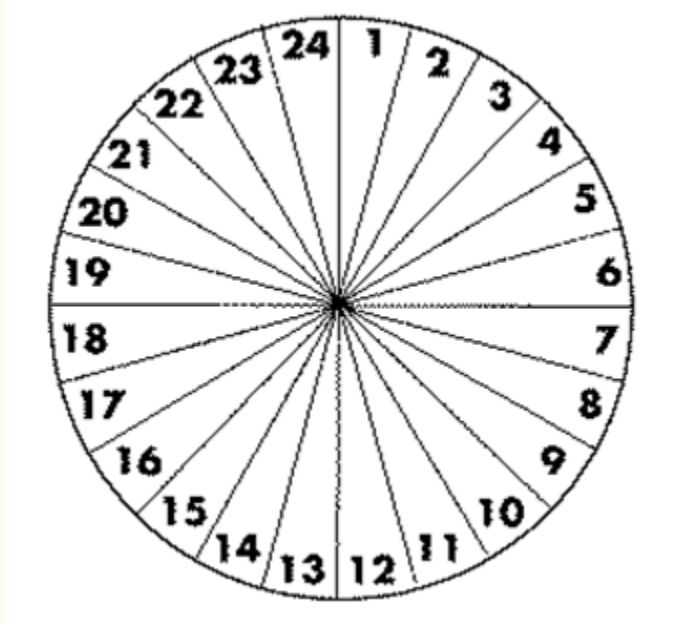
What was the social error?	Who was hurt by the social error?

What should be done to correct the error? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What could be done next time? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Strategies for Teaching EF Skills - Action

Time Management - “How do I spend my time?”



Type of Activity	Color
School	
Snack	
Video Games	
Homework	
Sleep, etc	

# Strategies for Teaching EF Skills - Action & Effort

Self-Regulation - Delay or inhibit response - “blurting”

- acknowledge/determine purpose/function of blurting
- allow for controlled opportunities
- “talking stick” for turn
- chips for number of allowed questions
- share the process and expectations with child
- model & role play
- planned opportunities and natural ones
- reinforce for success

# Strategies for Teaching EF Skills - Emotion

## 5 Point Scale

<u>Looks Like</u>	<u>#</u>	<u>Name of Feeling</u>	<u>What I Can Do</u>
	5	Angry	Go to my cool down area.
	4	Upset	Ask for help, take a walk, self-talk
	3	OK	Do I need something?
	2	Happy	Keep on working
	1	Excited	Keep my body calm

# Strategies for Teaching EF Skills - Focus

## Visual Schedules for task completion

morning routine

<input type="checkbox"/>		get dressed
<input type="checkbox"/>		eat breakfast
<input type="checkbox"/>		brush teeth
<input type="checkbox"/>		go potty
<input type="checkbox"/>		backpack/jacket
<input type="checkbox"/>		go to school

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Homework/Assignment Sheet

Names:  [Type Name Here] Week Endings:  [Type Text Here]

Directions: Each day, enter the assignment in the proper spot. If you do not have enough space, use the back. Sometimes your teacher will have you write special directions for studying or finishing work on the back as well. If there is no assigned note "none".

	Monday	Tuesday	Wednesday	Thursday	Friday
Math					
Science					
History					
Spelling Language					
Reading					

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# Strategies for Teaching EF Skills - Focus

Flexibility - Start with something simple  
How many ways can you eat an orange?



# 5 Apps for Compensating Executive Function Deficits

**Planning -  
30/30**



**Working Memory App -  
Quizlet**



**Organization App -  
Google Calendar**



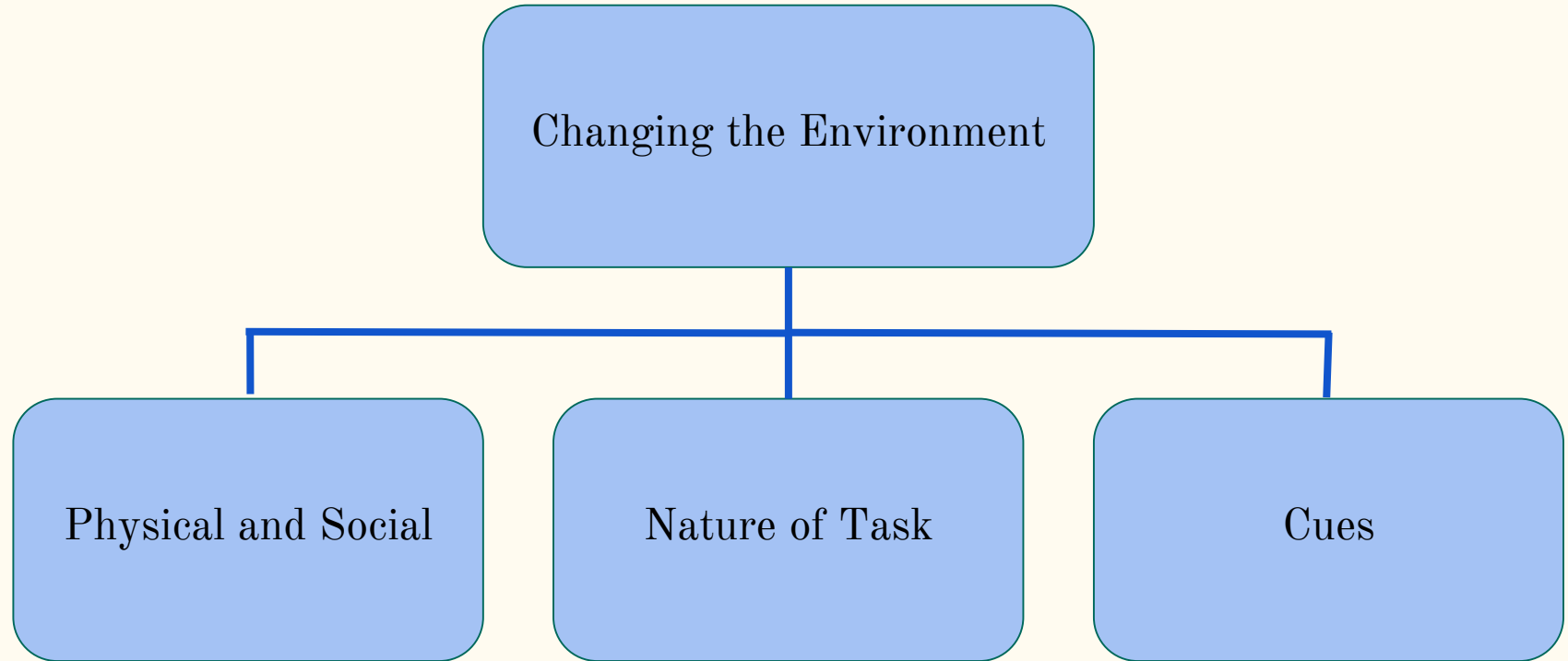
**Time Management App -  
InClass**



**Organization App -  
YouNote!**



# Accommodations





# Changing the Physical or Social Environment

- Where the student is located
- Where the teacher is located
- Where other students are located
- Carrels
- Materials needed

# Changing the Nature of the Task

- Make the task shorter
- Make the steps more explicit
- Make the task close in variety or choice
- Provide rubrics or checklists

# Changing the ways cues are provided

- Explicit verbal prompts and reminders
- Visual cues
- Schedules
- Lists
- Audiotaped cues
- Cell phones or alarms

## Advantages to Cuing:

- Problems can be anticipated
- Steps can be taken early so that a small problem doesn't become a big problem
- Reminders can be used to prompt children so they avoid the frustration associated with forgetting and increase task success

# Conclusion for Best Approaches

1. Engage students' passionate interests.
2. Address stressors in students' lives.
3. Give students a sense of belonging and social acceptance.
4. Give students opportunities to repeatedly practice EFs at progressively more advanced levels.
5. Do not focus on skills alone; address with emotional and social development.