Three-Story House
(Costa's Levels of Thinking)

To better understand the content being presented in their core subject areas, it is essential for students to learn to think critically and to ask higher levels of questions. By asking higher levels of questions, students deepen their knowledge and create connections to the material being presented, which in turn prepares them for the inquiry that occurs in tutorials. Students need to be familiar with Costa's (and/or Bloom's) Levels of Thinking to assist them in formulating and identifying higher levels of questions.

Directions: Read the poem below and review the "Three-House Story" on the next page. Both set the stage for Costa's Levels of Thinking.

One- Two- Three-Story Intellect Poem

There are one-story intellects,
two-story intellects,
and three-story intellects with skylights.

All fact collectors who have
no aim beyond their facts
are one-story people.

Two-story people compare, reason,
generalize, using the labor of
fact collectors as their own.

Three-story people idealize,
imagine, predict—their best illumination
comes through the skylight.

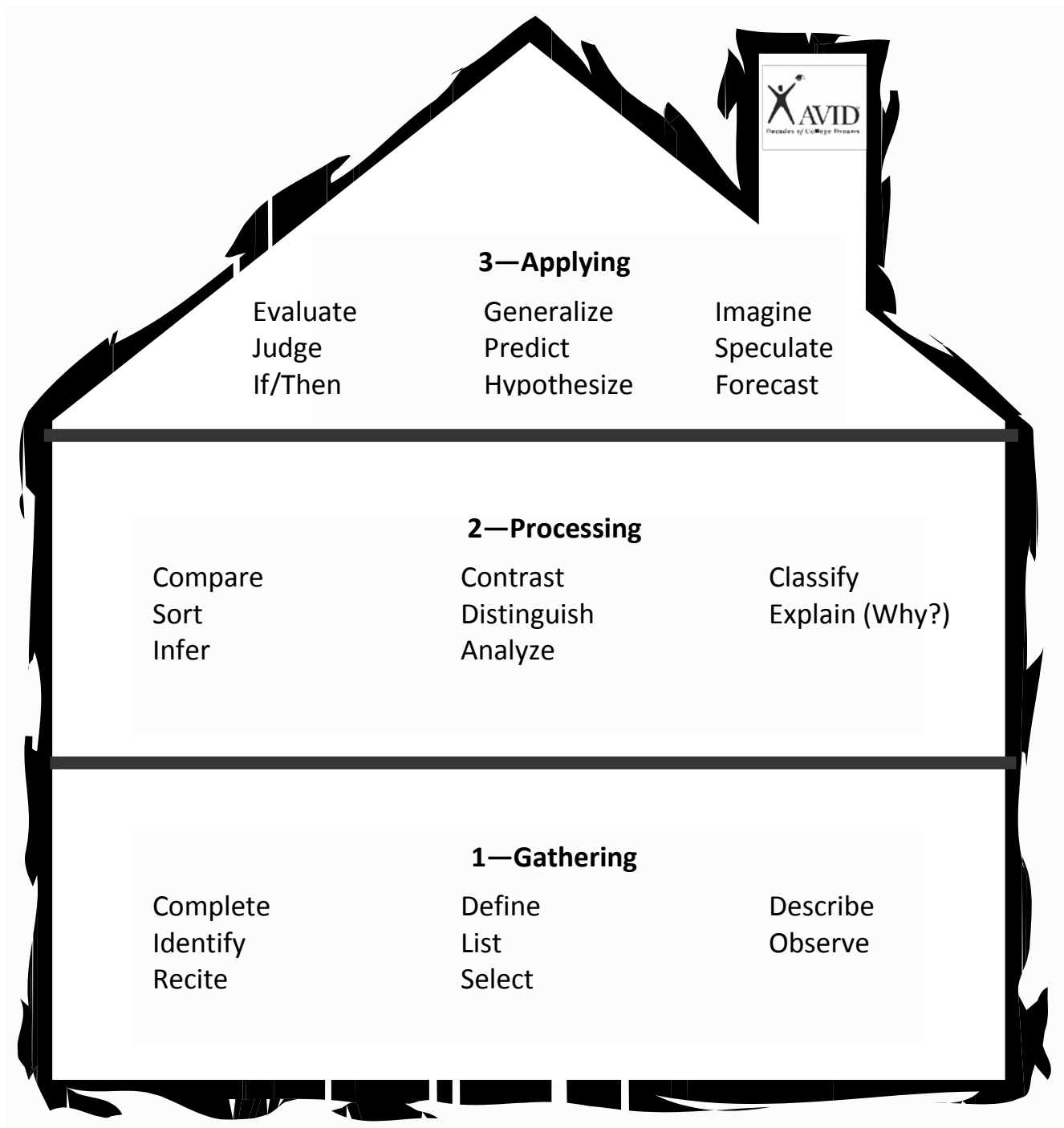Adapted from a quotation by Oliver Wendell Holmes

The Three-Story House

Level 1 (the lowest level) requires one to gather information.

Level 2 (the middle level) requires one to process the information.

Level 3 (the highest level) requires one to apply the information.

3—Applying

Evaluate	Generalize	Imagine
Judge	Predict	Speculate
If/Then	Hypothesize	Forecast

2—Processing

Compare	Contrast	Classify
Sort	Distinguish	Explain (Why?)
Infer	Analyze	

1—Gathering

Complete	Define	Describe
Identify	List	Observe
Recite	Select	

Vocabulary: Costa's Levels of Thinking

LEVEL 1

Remember

Define	List	Recall	Match
Repeat	State	Memorize	Identify
Name	Describe	Label	Record

Show Understanding

Give examples	Rewrite	Review	Tell
Restate	Recognize	Locate	Extend
Discuss	Explain	Find	Summarize
Express	Report	Paraphrase	Generalize

LEVEL 2

Use Understanding

Dramatize	Use	Translate	Interpret
Practice	Compute	Change	Prepare
Operate	Schedule	Pretend	Demonstrate
Imply	Relate	Discover	Infer
Apply	Illustrate	Solve	

Examine

Diagram	Question	Analyze	Criticize
Distinguish	Inventory	Differentiate	Experiment
Compare	Categorize	Select	Break down
Contrast	Outline	Separate	Discriminate
Divide	Debate	Point out	

Create

Compose	Draw	Plan
Design	Arrange	Compile
Propose	Suppose	Revise
Combine	Formulate	Write
Construct	Organize	Devise

LEVEL 3

Decide

Judge	Rate	Choose	Conclude
Value	Justify	Assess	Summarize
Predict	Decide	Select	
Evaluate	Measure	Estimate	

Supportive Evidence

Prove your answer. Support your answer.	Give reasons for your answer.	Explain your answer. Why or why not?	Why do you feel that way?

Bloom's Taxonomy

Bloom's Taxonomy categorizes the types of thinking students do into seven categories. Evaluation and synthesis are the most complex types of thinking and questioning, and knowledge and comprehension questions and thinking are the most basic forms.

Evaluation—Judging Based on Criteria

Assess	Test	Select	Support
Decide	Measure	Judge	Conclude
Rank	Recommend	Explain	Compare
Grade	Convince	Discriminate	Summarize

Synthesis—Using Parts of New Information to Create Whole

Combine	Substitute	Invent	Prepare
Integrate	Plan	What if?	Generalize
Modify	Create	Compose	Rewrite
Rearrange	Design	Formulate	

Analysis—Seeing Parts and Relationships

Analyze	Explain	Arrange	Select
Separate	Connect	Divide	Explain
Order	Classify	Compare	Infer

Comprehension—Understanding Meaning

Summarize	Associate	Contrast	Discuss
Describe	Distinguish	Predict	Extend
Interpret	Estimate	Differentiate	

Knowledge—Recalling Information

List	Identify	Examine	Who
Define	Show	Tabulate	When
Tell	Label	Quote	Where
Describe	Collect	Name	

Content-Specific Questions
Costa's Levels of Thinking: Math

LEVEL 1

What information is given?

What are you being asked to find?

What formula would you use in this problem?

What does _____ mean?

What is the formula for...?

List the...
Name the...

Where did...?

What is...?

When did...?

Explain the concept of...

Give me an example of...

Describe in your own words what _____ means.

What mathematical concepts does this problem connect to?

Draw a diagram of...

Illustrate how _____ works.

LEVEL 2

What additional information is needed to solve this problem?

Can you see other relationships that will help you find this information?

How can you put your data in graphic form?

What occurs when...?

Does it make sense to...?

Compare and contrast _____ to _____.

What was important about...?

What prior research/formulas support your conclusions?

How else could you account for...?

Explain how you calculate...

What equation can you write to solve the word problem?

LEVEL 3

Predict what will happen to __ as _____ is changed.

Using a math principle, how can we find...?

Describe the events that might occur if...

Design a scenario for...

Pretend you are...

What would the world be like if...?

How can you tell if your answer is reasonable?

What would happen to _____ if _____ (variable) were increased/decreased?

How would repeated trials affect your data?

What significance is this formula to the subject you're learning?

What type of evidence is most compelling to you?

Costa's Levels of Thinking: Science

LEVEL 1

What information is given?

What are you being asked to find?

What formula would you use in this problem?

What does _____ mean?

What is the formula for...?

List the...

Name the...

Where did...?

What is...?

When did...?

Describe in your own words what _____ means.

What science concepts does this problem connect to?

Draw a diagram of...

Illustrate how _____ works.

LEVEL 2

What additional information is needed to solve this problem?

Can you see other relationships that will help you find this information?

How can you put your data in graphic form?

How would you change your procedures to get better results?

What method would you use to...?

Compare and contrast _____ to _____.

Which errors most affected your results?

What were some sources of variability?

How do your conclusions support your hypothesis?

What prior research/ formulas support your conclusions?

How else could you account for...?

Explain the concept of...

Give me an example of...

LEVEL 3

Design a lab to show...

Predict what will happen to

_____ as _____ is changed.

Using a science principle, how can we find...?

Describe the events that might occur if...

Design a scenario for...

Pretend you are...

What would the world be like if...?

What would happen to _____ if _____ (variable) were increased/decreased?

How would repeated trials affect your data?

What significance is this experiment to the subject you're learning?

What type of evidence is most compelling to you?

Do you feel _____ (experiment) is ethical?

Are your results biased?

Costa's Levels of Thinking: English

LEVEL 1

What information is given?

Locate in the story where...

When did the event take place?

Point to the...

List the... Name the... Where did...? What is...?

Who was/were...?

Illustrate the part of the story that...

Make a map of...

What is the origin of the word_____?

What events led to _____?

LEVEL 2

What would happen to you if...?

Would you have done the same thing as...?

What occurs when...?

Compare and contrast _____ to _____.

What other ways could _____ be interpreted?

What is the main idea of the story (event)?

What information supports your explanation?

What was the message in this piece (event)?

Give me an example of...

Describe in your own words what _____ means.

What does _____ suggest about _____'s character?

What lines of the poem express the poet's feelings about _____?

What is the author trying to prove? What evidence does he present?

LEVEL 3

Design a _____ to show...

Predict what will happen to _____ as _____ is changed.

Write a new ending to the story (event)...

Describe the events that might occur if...

Add something new on your own that was not in the story...

Pretend you are...

What would the world be like if...?

Pretend you are a character in the story. Rewrite the episode from your point of view.

What do you think will happen to _____? Why?

What is most compelling to you in this _____? Why?

Could this story have really happened? Why or why not?

If you were there, would you...?

How would you solve this problem in your life?

Costa's Levels of Thinking: Social Studies

LEVEL 1	LEVEL 2	LEVEL 3

LEVEL 1

What information is given?

What are you being asked to find?

When did the event take place?

Point to the...

List the...

Name the...

Where did...?

What is...?

Who was/were...?

Make a map of...

LEVEL 2

What would happen to you if...?

Can you see other relationships that will help you find this information?

Would you have done the same thing as...?

What occurs when...?

If you were there, would you...?

How would you solve this problem in your life?

Compare and contrast _____ to _____.

What other ways could _____ be interpreted?

What things would you have used to...?

What is the main idea in this piece (event)?

What information supports your explanation?

What was the message in this event?

Explain the concept of...

Give me an example of...

Describe in your own words what _____ means.

LEVEL 3

Design a _____ to show...

Predict what will happen to _____ as _____ is changed.

What would it be like to live...?

Write a new ending to the event.

Describe the events that might occur if...?

Pretend you are...

What would the world be like if...?

How can you tell if your analysis is reasonable?

What do you think will happen to _____? Why?

What significance is this event in the global perspective?

What is most compelling to you in this _____? Why?

Do you feel _____ is ethical? Why or why not?

Bloom's Taxonomy: Science and Math

1. KNOWLEDGE—recalling information

What information is given?

What are you being asked to find?

What formula would you use in this problem?

What does _____ mean?

What is the formula for...?

List the...

Name the...

Where did...?

What is...?

Who was/were...?

When did...?

2. COMPREHENSION— understanding meaning

What are you being asked to find?

Explain the concept of...

Give me an example of...

Describe in your own words what _____ means.

What (science or math) concepts does this problem connect to?

Draw a diagram of...

Illustrate how _____ works.

Explain how you calculate...

3. APPLICATION—using learning in new situations

What additional information is needed to solve this problem?

Can you see other relationships that will help you find this information?

How can you put your data in graphic form?

What occurs when...?

How would you change your procedures to get better results?

What method would you use to...?

Does it make sense to...?

4. ANALYSIS—ability to see parts and relationships

Compare and contrast _____ to _____.

What was important about...?

Which errors most affected your results?

What were some sources of variability?

How do your conclusions support your hypothesis?

What prior research/formulas support your conclusions?

How else could you account for...?

5. SYNTHESIS—parts of information to create a new whole

Design a lab to show...

Predict what will happen to _____ as _____ is changed.

Using a principle of (science or math), how can we find...?

Describe the events that might occur if...

Design a scenario for...

Pretend you are...

What would the world be like if...?

6. EVALUATION—judgment based on criteria

How can you tell if your answer is reasonable?

What would happen to _____ if _____ (variable) were increased/decreased?

How would repeated trials affect your data?

What significance is this experiment/formula to the subject you're learning?

What type of evidence is most compelling to you?

Do you feel ____ experiment is ethical?

Are your results biased?

Bloom's Taxonomy: English and Social Science

1. KNOWLEDGE—recalling information

What information is given?

What are you being asked to find?

Locate in the story where...

When did the event take place?

Point to the...

List the...

Name the...

Where did...? What is...?

Who was/were...?

2. COMPREHENSION—understanding meaning

What are you being asked to find?

Explain the concept of...

Give me an example of...

Describe in your own words what _____ means.

Illustrate the part of the story that...

Make a map of...

This event led to...

Describe the scenario...

3. APPLICATION—using learning in new situations

What would happen to you if...?

Can you see other relationships that will help you find this information?

Would you have done the same thing as...?

What occurs when... ?

If you were there, would you...?

How would you solve this problem in your life?

In the library (on the Web), find info about...

4. ANALYSIS—ability to see parts and relationships

Compare and contrast _____ to _____.

What was important about...?

What other ways could _____ be interpreted?

What things would you have used to...?

What is the main idea of the story (event)?

What information supports your explanation?

What was the message in this piece (event)...?

5. SYNTHESIS—parts of information to create a new whole

Design a _____ to show...

Predict what will happen to _____ as _____ is changed.

What would it be like to live...?

Write a new ending to the story (event).

Describe the events that might occur if...

Add a new thing on your own that was not in the story.

Pretend you are...

What would the world be like if...?

6. EVALUATION—judgment based on criteria

How can you tell if your analysis is reasonable?

Would you recommend this _____ to a friend? Why?

What do you think will happen to? Why?

What significance is this event in the global perspective?

What is most compelling to you in this _____? Why?

Do you feel _____ is ethical? Why or why not?

Could this story have really happened? Why or why not?

Moving On Up:
Writing Higher-Level Questions

Directions: Complete the table below by writing Level 2 and 3 questions that correspond to each Level 1 question provided for the fairy tale "Cinderella." The first set has been completed for you as an example.

Level 1	Level 2	Level 3
1. What are the names of the three stepsisters?	1. Compare and contrast Cinderella to one of her stepsisters.	1. Justify the reasons why Cinderella's stepsisters are so undesirable to the prince.
2. Who is the person that grants Cinderella her wish of attending the ball?		
3. What was Cinderella's coach made out of?		
4. What happened at midnight?		
5. Who found Cinderella's glass slipper?		
6. After Cinderella and the prince were married, how did they live?		
7. What was the slipper made of?		
8. What changes happened as a result of the fairy godmother's magic?		
9. How did Cinderella get her name?		
10. Describe the ball at the palace.		

More Higher-Level Questions

Level 1	Level 2	Level 3

Extension Activities
1. Students may answer these questions by providing them with the fairy tale to have a text-based discussion.
2. Have students repeat this activity with a different fairy tale, subject, novel, or content area material.
3. Have students generate three level 1 questions, three level 2 questions, and three level 3 questions and fill in questions for the corresponding levels.
4. Use this activity to have students generate questions with content level material to prepare for a test.
5. Refer to this activity when students bring lower level questions during tutorials.

Writing Higher-Level Questions Flowchart

A. Read the question you wrote on your Tutorial Request Form.

LEVEL OF QUESTIONS: COSTA'S 1 *OR* BLOOM'S 1 AND 2

LEVEL OF QUESTIONS: COSTA'S 2 AND 3 *OR* BLOOM'S 4–6

C. Identify the verb (Costa's vocabulary) in your tutorial question.

B. What is the level of your question?

D. Based on the verb (Costa's vocabulary) indicated, you have a lower-level question.

F. Based on the verb (Costa's vocabulary) indicated, you have a higher-level question.

F. Rewrite your question into a higher-level question
OR

E. Do you have resources to assist you in finding the answer to your question? If not, obtain resources.

E. Create a new higher-level tutorial question. Go back to **A** and start the process over.

D. Using your resources, are you able to answer the question without assistance?
If so, go to **G1**. If not, go to **G2**.

G2. Create a new higher-level question. Go back to **A** and start the process over.

G1. Congratulations! You have created a fabulous question and are prepared for the tutorial.