

CERI B. DEAN
ELIZABETH ROSS HUBBELL
HOWARD PITLER
Bj STONE

Classroom Instruction *that Works*

RESEARCH-BASED STRATEGIES FOR INCREASING STUDENT ACHIEVEMENT

2nd Edition

Classroom Instruction that Works Day Two

presented by
Chris Moddelmog
Smoky Hill ESC

McREL

© 2012

Learning Objectives

Day Two

By the end of the learning session, we will:

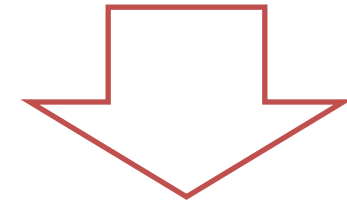
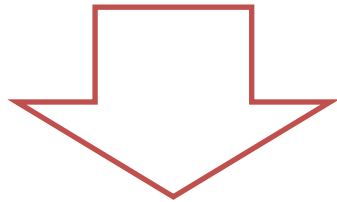
- *Know the categories of strategies that comprise the component of Helping Students Develop Understanding,*
- *Understand the classroom recommendations for each of the strategies,*
- *Make connections between and among the strategies,*
- *Transfer the learning into specific changes in your pedagogy that you will apply in the next two weeks.*

Create the Environment for Learning

Setting Objectives
& Providing
Feedback

Reinforcing Effort &
Providing Recognition

Cooperative Learning



Develop Understanding

Cues, Questions,
& Advance Organizers

Nonlinguistic Representation

Summarizing & Notetaking

Assigning Homework & Providing
Practice

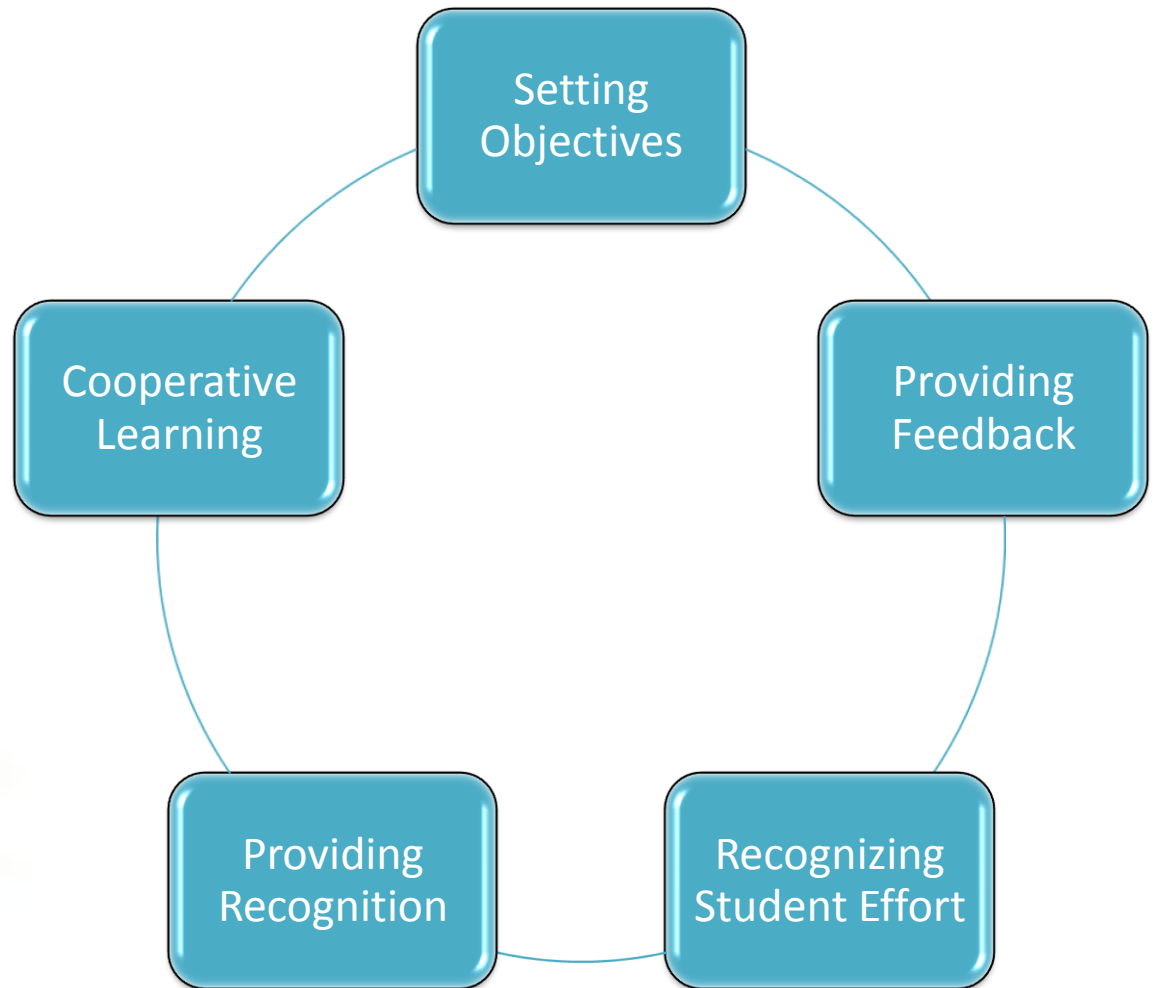
Extend & Apply Knowledge

Identifying Similarities &
Differences

Generating & Testing
Hypotheses



Creating an Environment for Learning



Give One, Get One

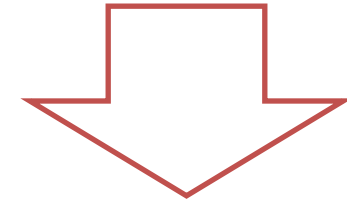
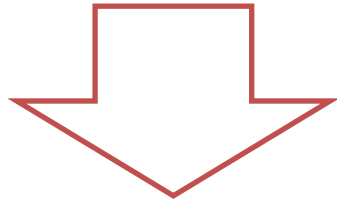
1. Read through your notes from Day 1.
2. Write three important things that you learned and do not want to forget on the first three lines of your sheet.
3. When asked to do so, get up and have seven conversations with colleagues. You will give a piece of information and receive one in return.
4. You will have 20 minutes to review and 10 minutes for conversations.

Create the Environment for Learning

Setting Objectives &
Providing Feedback

Reinforcing Effort &
Providing
Recognition

Cooperative Learning



Develop Understanding

Cues, Questions,
& Advance Organizers
Nonlinguistic Representation
Summarizing & Notetaking
Assigning Homework &
Providing Practice

Extend & Apply Knowledge

Identifying Similarities &
Differences
Generating & Testing
Hypotheses

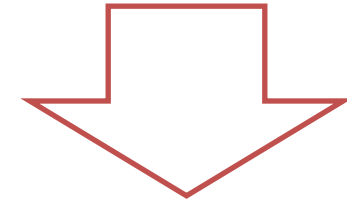
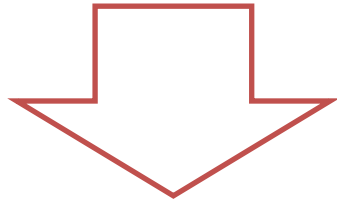


Create the Environment for Learning

Setting Objectives &
Providing Feedback

Reinforcing Effort &
Providing
Recognition

Cooperative Learning



Develop Understanding

Cues, Questions,
& Advance Organizers

Nonlinguistic Representation

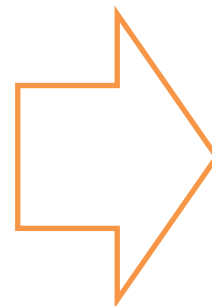
Summarizing & Notetaking

Assigning Homework &
Providing Practice

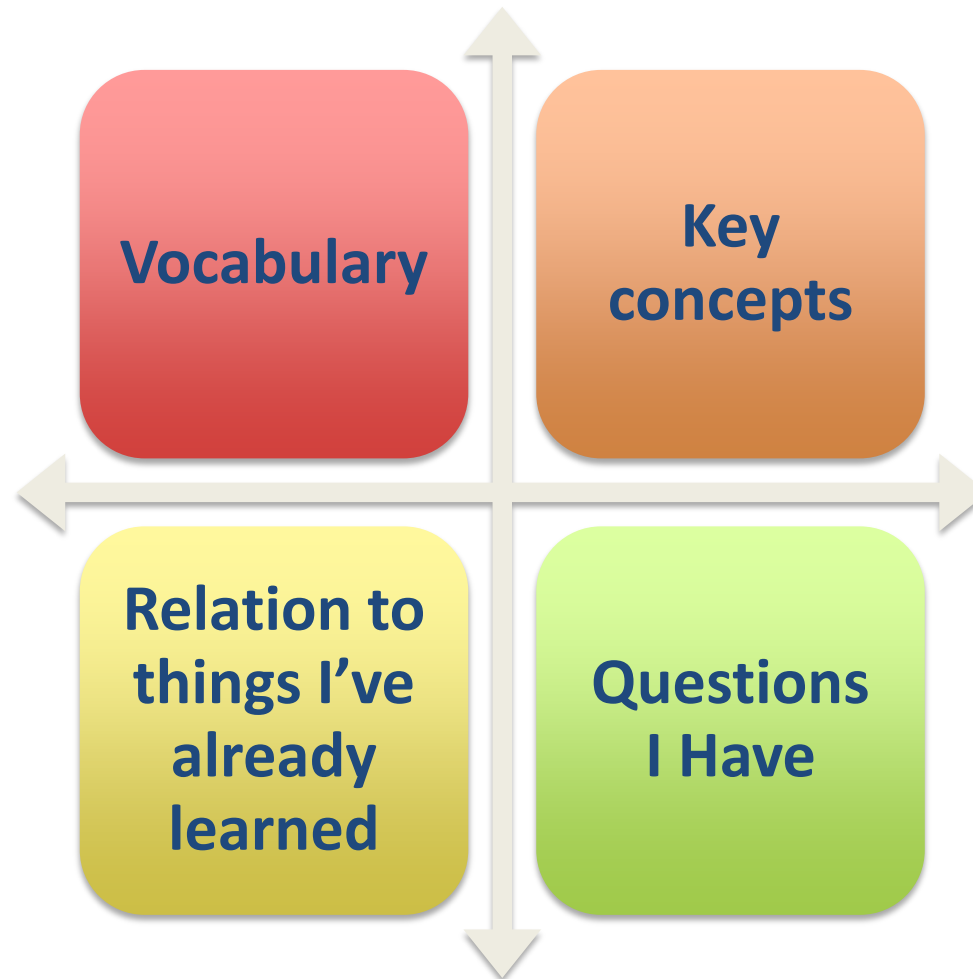
Extend & Apply Knowledge

Identifying Similarities &
Differences

Generating & Testing
Hypotheses



Cues, Questions, & Advance Organizers



Cues and questions account for approximately 80% of what occurs in a classroom on a given day.

Fillippone, (1998)

Cues are explicit reminders or hints about what students are about to experience. They help students activate what they already know about a topic and let them know what they should expect.

Classroom Recommendations for Cues and Questions

Focus on what is important.

Use explicit cues.

Ask inferential questions.

Ask analytic questions.

Focus on What is Important



Use Explicit Cues

Activate prior
knowledge

A vertical stack of four books is shown against a light background. The books have different colored spines: dark red, light brown, dark grey, and black. The word "Knowledge" is printed in a large, red, serif font across the middle of the stack.

Knowledge

“One’s mind,
once stretched
by a new idea,
never regains its
original dimensions.”

— Oliver Wendell Holmes

Ask inferential questions

Three Levels of Thinking

- Literal Thinking
- Inferential Thinking
- Critical/Evaluative/Analytical Thinking

Literal Thinking

“Like a warehouse.”

Put raw materials into a warehouse and take the same raw materials.

Identifying facts as they are written, reading for details, and identify main ideas or concepts as stated.





Inferential Thinking

“Like a factory.”

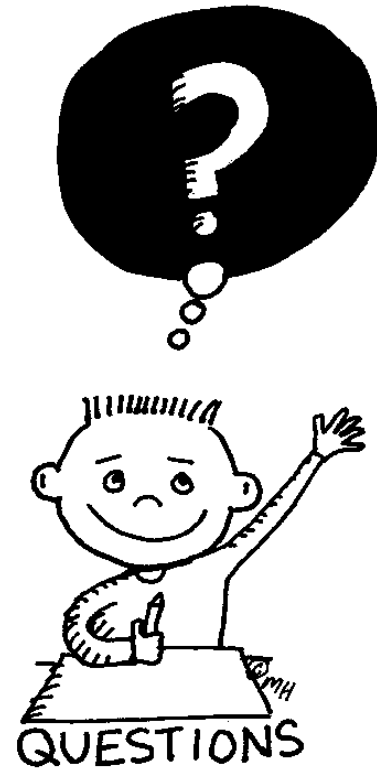
Turn raw materials at the literal level into a new product.

Draw conclusions, make generalizations, develop an understanding of figurative language.

Ask Questions that Elicit Inferences

Even the best designed lesson will require that students “fill in” some missing information.

Teachers can provide questions that help students make inferences about things, people, actions, events and states of being.



Critical/Evaluative Thinking

“Like a customer or an inventor.”

New uses are developed for the product that was manufactured.

Judge the accuracy of materials, distinguish between fact and opinion.



Use Analytic Questions

- **Analyzing Errors**
- **Constructing Support**
- **Analyzing Perspectives**





Where is Mesopotamia located?

What are the major bodies of water that surround Mesopotamia?

What are the major cities of Mesopotamia?

What are the characteristics of urban development in ancient Mesopotamia?

What environmental and cultural factors influenced the development of civilizations in this area?

Which one?

Instead of asking me to "do a report on Philadelphia," ask me to decide which city in the Mid-Atlantic region is the best place to live.

For the best answers, ask tough questions
Joyce Valenza, Philadelphia Inquirer



How?



Instead of asking me to do a report on pollution, ask me to propose a solution to an environmental problem in my neighborhood.

What if?



"What if the Declaration of Independence abolished slavery?"

Should?

"Should we
discontinue trade
with the Middle
East?"



Why?

"Why is the mortality rate higher in one Third World country than another?"



QAR

(Question-Answer-Relationship)

In The Text.....In Your Head

RIGHT THERE

The answer is right there in the text and usually matches the wording in the question

AUTHOR AND YOU

The answer is not in the text and the reader will need to think about what they already know and what the author has told you in the text

THINK AND SEARCH

The answer is in the text but the reader will need to search and put it together

ON YOUR OWN

The answer is not in the text and the reader could most likely answer the question using their background knowledge

Right There Questions

- What are the self-evident truths presented in the Declaration of Independence
- What three examples of unalienable rights are listed?

Author and You

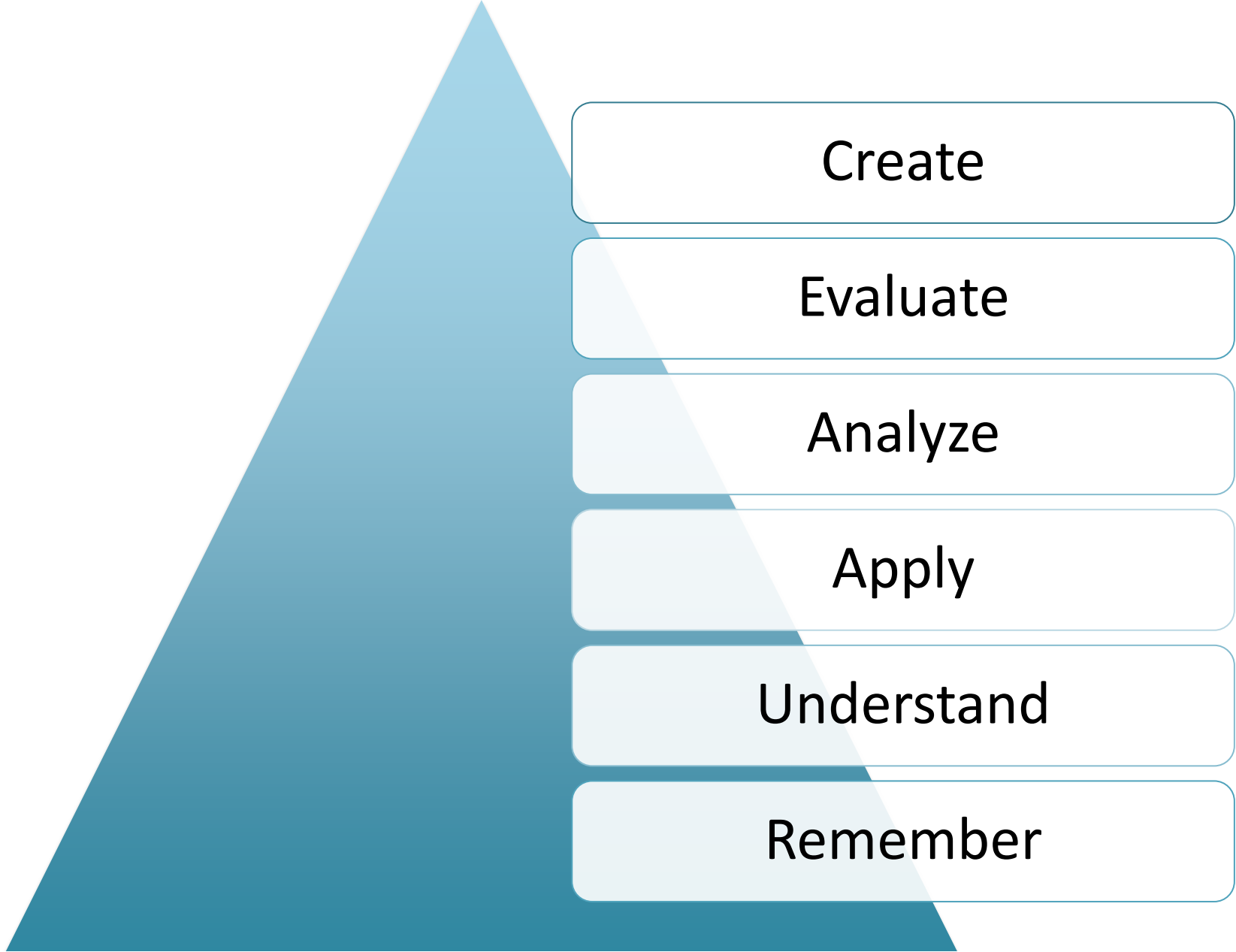
- In what ways does the government impact your safety and happiness?
- In what ways did the wording of the Declaration of Independence allow or enable slavery and lack of women's rights?

Think and Search

- Why did the authors believe the time had come to declare independence?
- What did the authors argue was the purpose of government?

On my Own

- How does the United States Constitution embody the ideas found in the Declaration of Independence?
- What are issues that we are addressing today that relate directly to the Declaration of Independence?



Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational objectives

Reflecting on Practice

Individually complete the sixth section on your Key Knowledge handout.

Be prepared to share one of your thoughts with the group.



Classroom Recommendations

Use expository advance organizers

- giving descriptions of new content in written or oral form

Use narrative advance organizers

- presenting information to students in a story format to make personal connections

Use skimming advance organizers

- quickly reading upcoming information

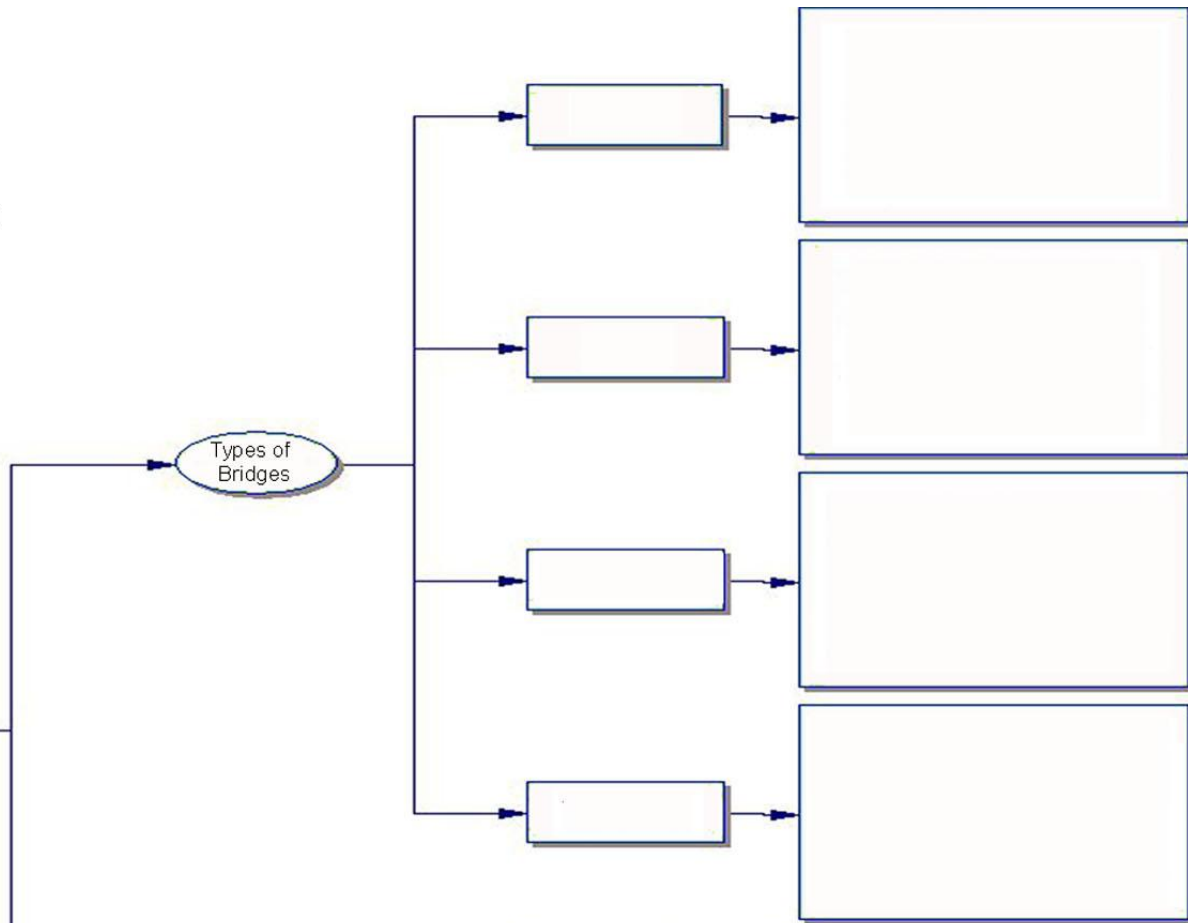
Use graphic advance organizers

- visually representing information

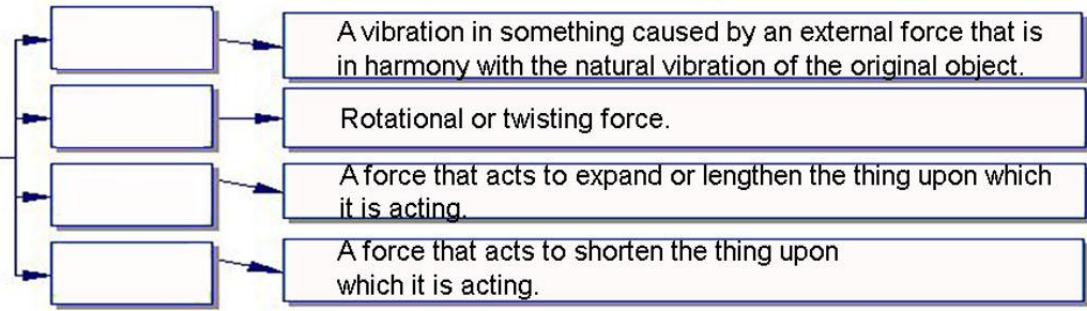
Word Bank

- Arch
- Beam
- Compression
- Resonance
- Suspension
- Tension
- Torsion
- Truss

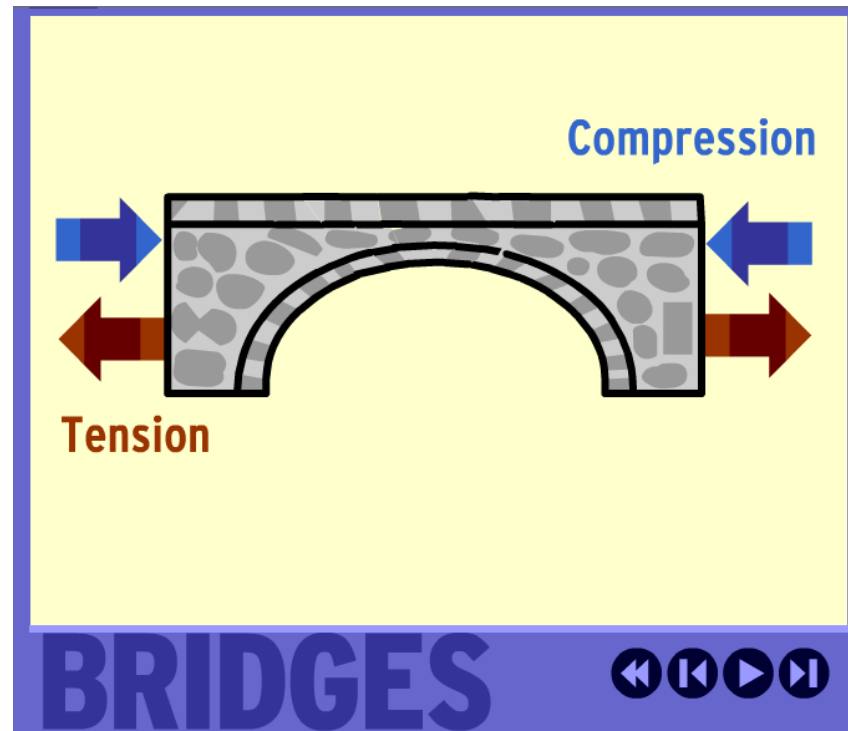
Bridges



Forces acting upon the bridge



Expository Advance Organizers



Narrative Advance Organizer



Skimming with SQ3R

Survey
Question
Read
Recite
Review



Model: SQ3R

Stage	What It Means	Notes
Survey what you are about to read	<ul style="list-style-type: none">• Think about the title: What do I know about this subject? What do I want to know?• Glance over heading and/or skim the first sentences of paragraphs.• Look at illustrations and graphic aids.• Read the first paragraph.• Read the last paragraph or summary.	
Question	<ul style="list-style-type: none">• Turn the title into a question. This becomes the major purpose for your reading.• Write down any questions that come to mind during the survey.• Turn headings into questions.• Turn subheadings, illustrations, and graphic aids into questions.• Write down unfamiliar vocabulary and determine the meaning.	
Read actively	<ul style="list-style-type: none">• Read to search for answers to questions.• Respond to questions and use the context clues for unfamiliar words.• React to unclear passages, confusing terms, and questionable statements by generating additional questions.	
Recite	<ul style="list-style-type: none">• Look away from the answers and the book to recall what was read.• Recite answers to questions aloud or in writing.• Reread text for unanswered questions.	
Review	<ul style="list-style-type: none">• Answer the major purpose questions.• Look over answers and all parts of the chapter to organize information.• Summarize the information learned by creating a graphic organizer that depicts the main ideas, by drawing a flow chart, by writing a summary, by participating in a group discussion, or by writing an explanation of how this material has changed your perceptions or applies to your life.	

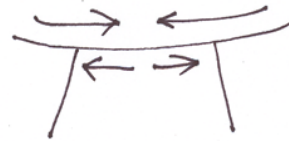
Word Bank

- Arch
- Beam
- Compression
- Resonance
- Suspension
- Tension
- Torsion
- Truss

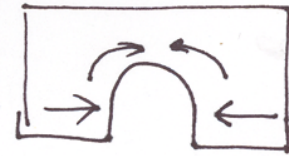
Bridges

Types of Bridges

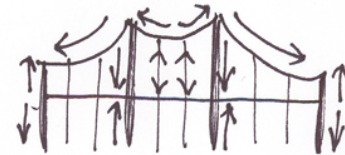
Beam



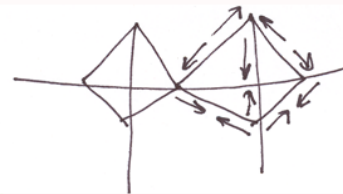
Arch



Suspension



Truss



Forces acting upon the bridge

Resonance

A vibration in something caused by an external force that is in harmony with the natural vibration of the original object.

Torsion

Rotational or twisting force.

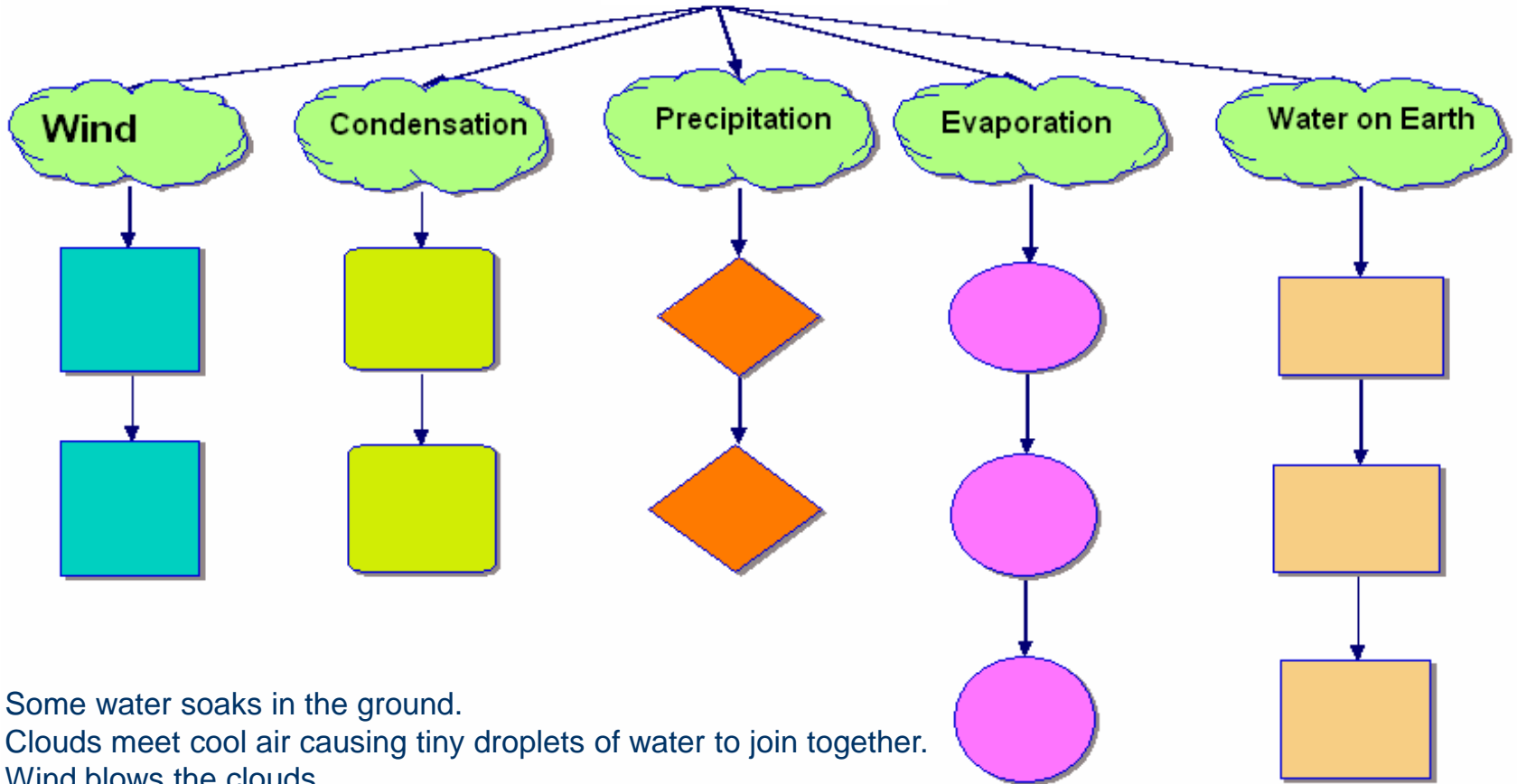
Tension

A force that acts to expand or lengthen the thing upon which it is acting.

Compression

A force that acts to shorten the thing upon which it is acting.

The Water Cycle



- A. Some water soaks in the ground.
- B. Clouds meet cool air causing tiny droplets of water to join together.
- C. Wind blows the clouds.
- D. Water vapor rises and cools.
- E. Energy from the Sun causes the water to evaporate.
- F. Water runs off into lakes, streams, and ponds.
- G. Droplets of water will fall as rain, sleet, snow, or hail.
- H. Clouds travel to different parts of the Earth.
- I. Larger droplets are made.
- J. Water vapor cools and tiny droplets of water join together to form clouds.
- K. Water changes from a liquid to a gas called water vapor.
- L. Water runs off into rivers which dump into the oceans.

Reflecting on Practice

Individually complete the section on your Key Knowledge handout.

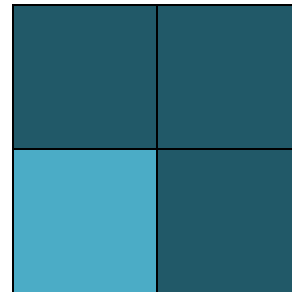
Be prepared to share one of your thoughts with the group.



Nonlinguistic Representation

Enhances students' ability to represent and elaborate on knowledge using mental images.

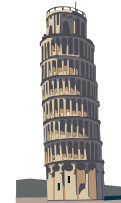
$3/4$



Nonlinguistic Representation

Many psychologists believe that we store knowledge in two ways: *linguistically (words)* and *nonlinguistically (images)*. The more we use both systems of representation, the better we are able to think about and recall knowledge.

Italy



Classroom Recommendations

Use graphic organizers.

Use physical models or manipulatives.

Generate mental pictures.

Use pictures, illustrations, and pictographs.

Engage in kinesthetic activities.

Graphic Organizers

Descriptive

**Process
Cause/Effect**

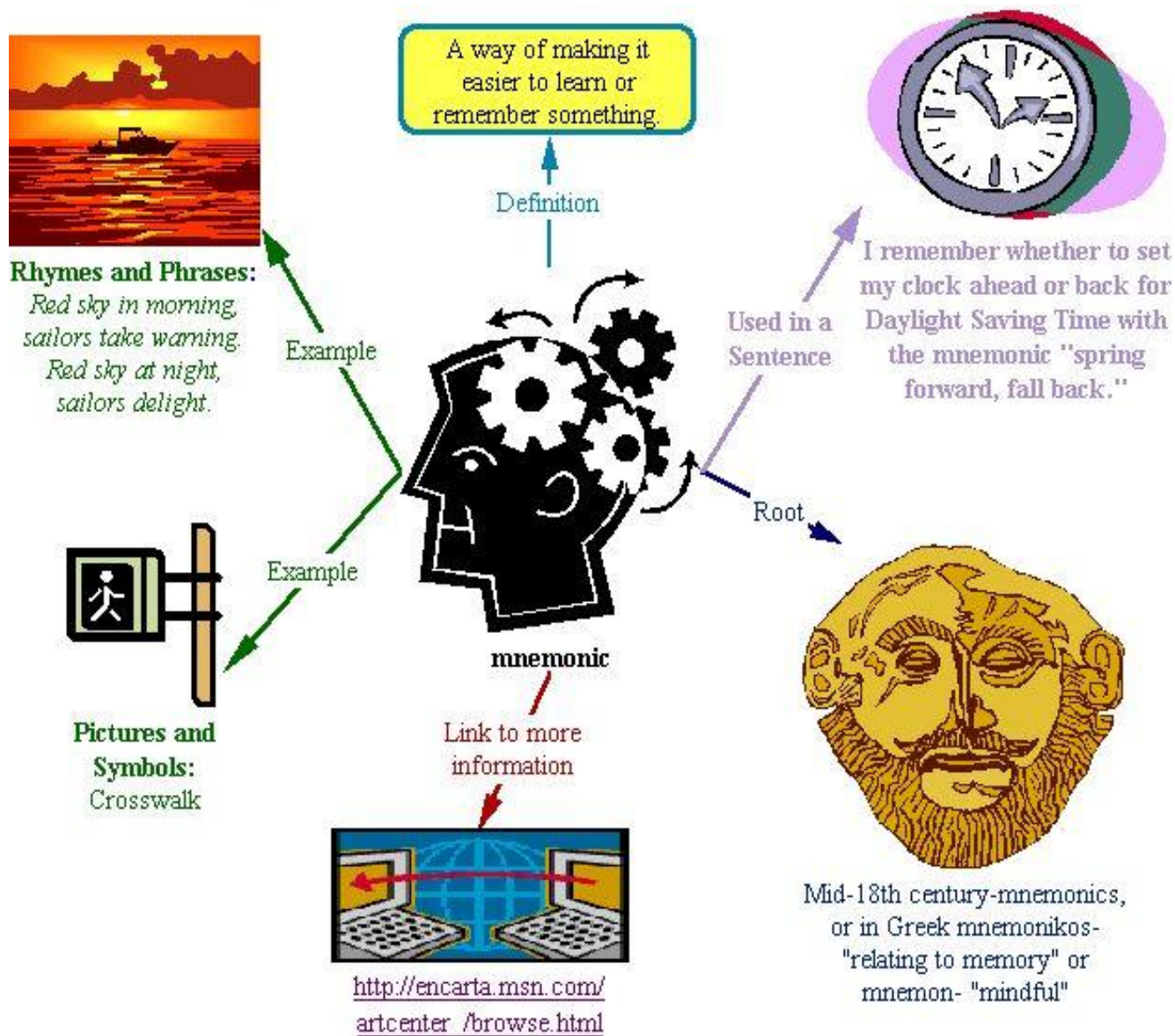
**Time
Sequence**

Episode

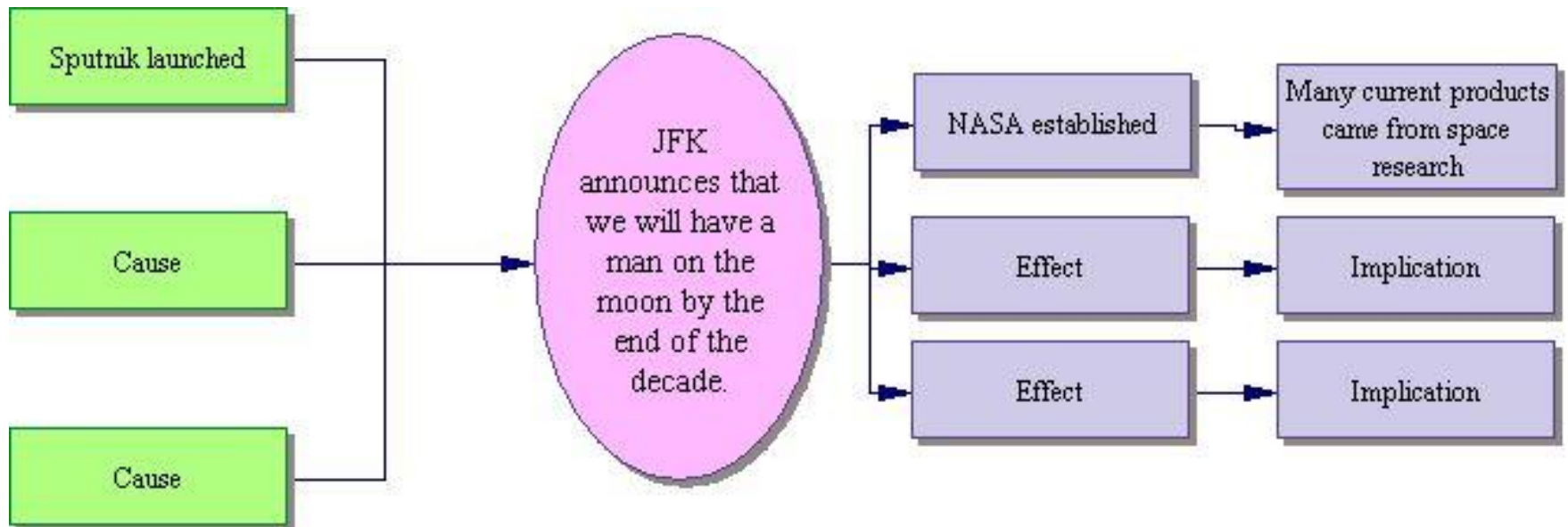
**Generalization
/Principle**

Concept

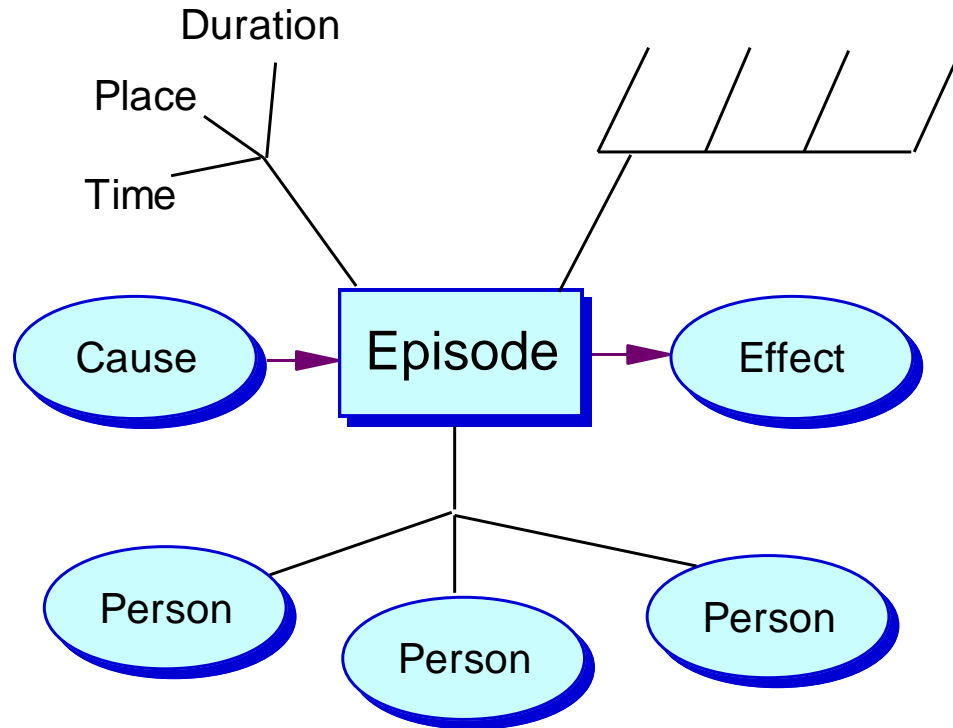
Descriptive Graphic Organizer



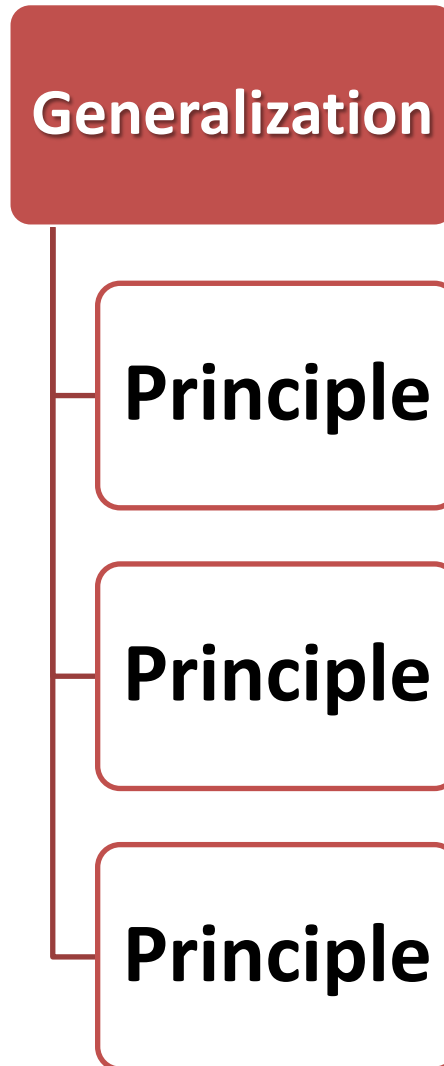
Process/Cause-Effect Graphic Organizer



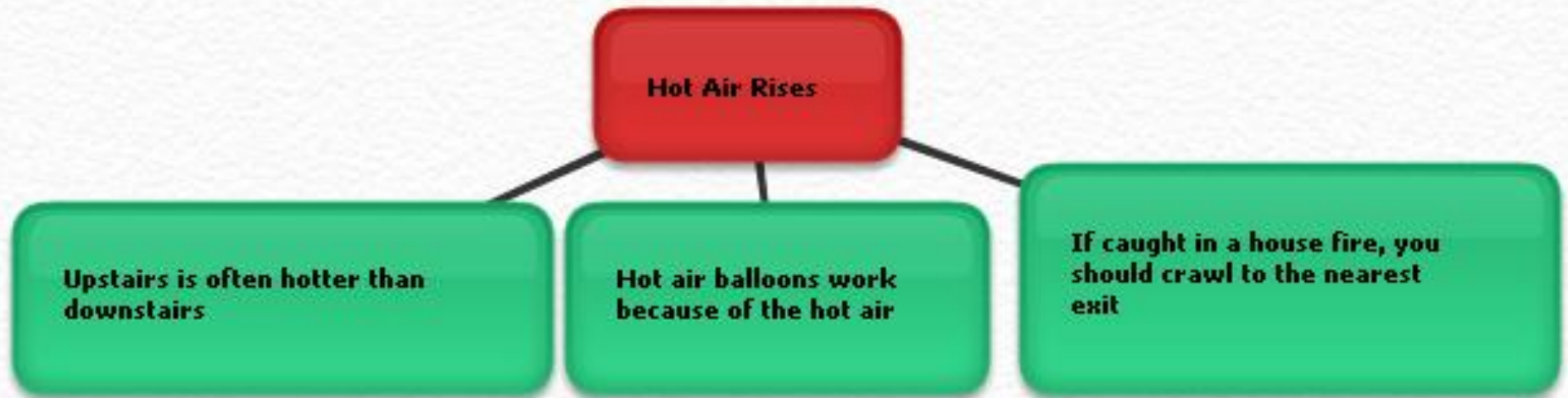
Episode Graphic Organizers



Generalization/Principle Graphic Organizers

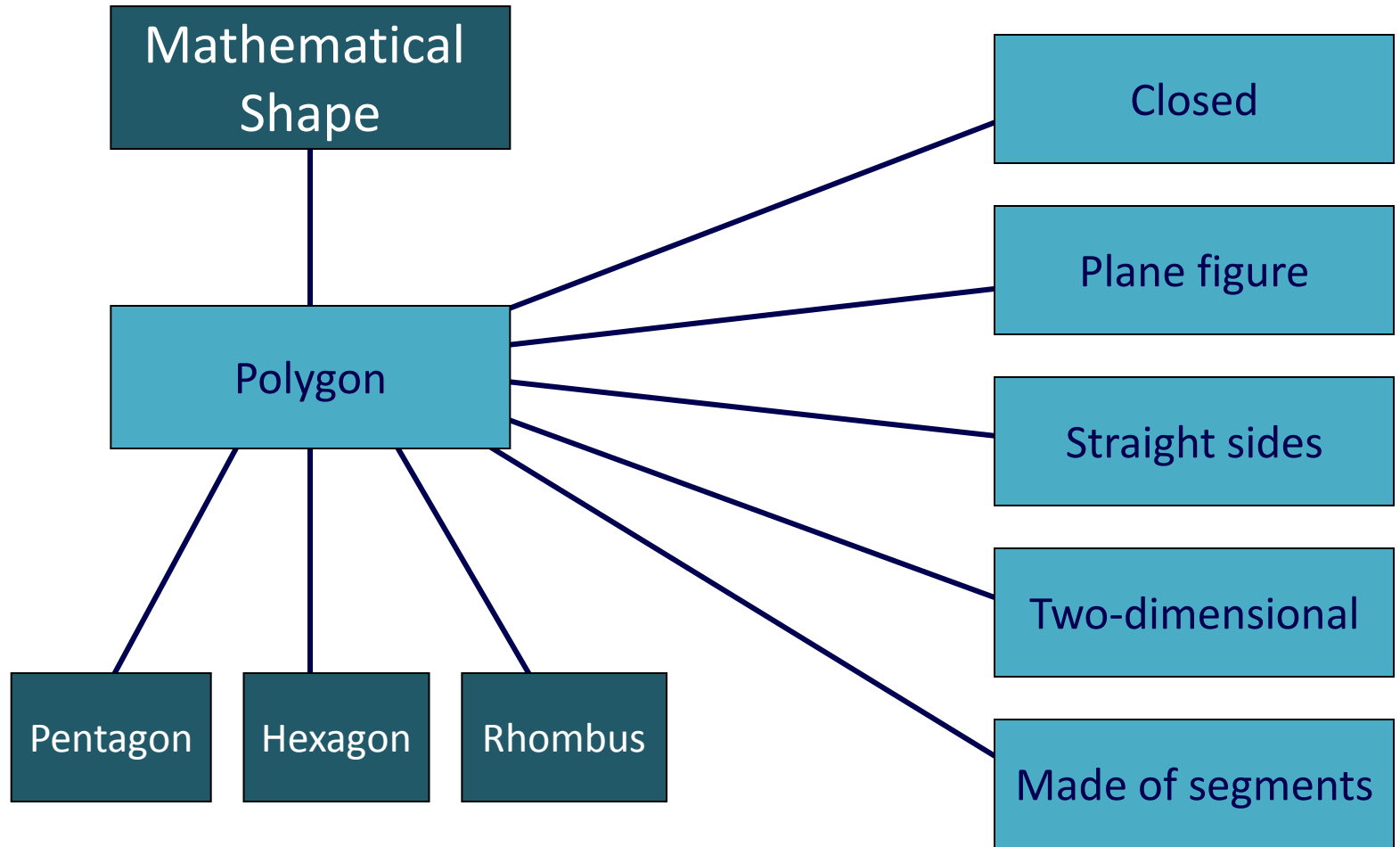


Generalization/Principle Graphic Organizers



<http://bubbl.us>

Concept Map



Physical Models



<http://www.legoeducation.com>



Claymation

Mental Pictures

Sounds



Smells



Tastes



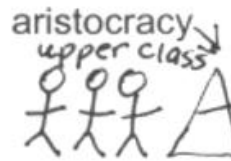
Emotions



I stood on the top of a grassy rise watching a young girl and her dog. The dog had been swimming in a muddy pond, and upon seeing the girl ran at full speed to greet her. He placed his muddy paws on her shoulders and vigorously licked her face. The girl laughed with glee and stroked the dog's fur. I imagined how the fur must smell from the water in the muddy pond and realized that the girl must now smell the same. I could almost feel how gritty her hands had become from petting the dog. My thoughts traveled to the fact that her face must be sticky from the "dog kisses." The two ran off together. I continued to hear her laugh and the dog bark even after they were well out of sight. *I smiled as I walked back home.*

Create pictures, illustrations, and pictographs

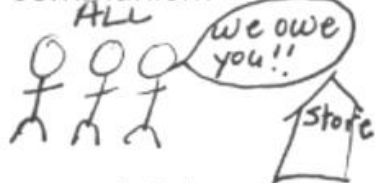
absolute monarchy



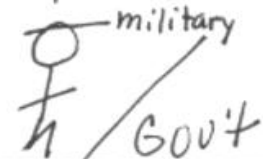
bureaucracy



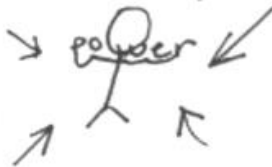
communism



coup d'etat



dictatorship



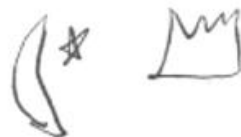
nationalism



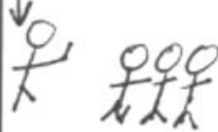
Plebiscite



sultan



totalitarian state



sage



guile



insolence



clarion



unshorn



shroud



tarry



dissemble



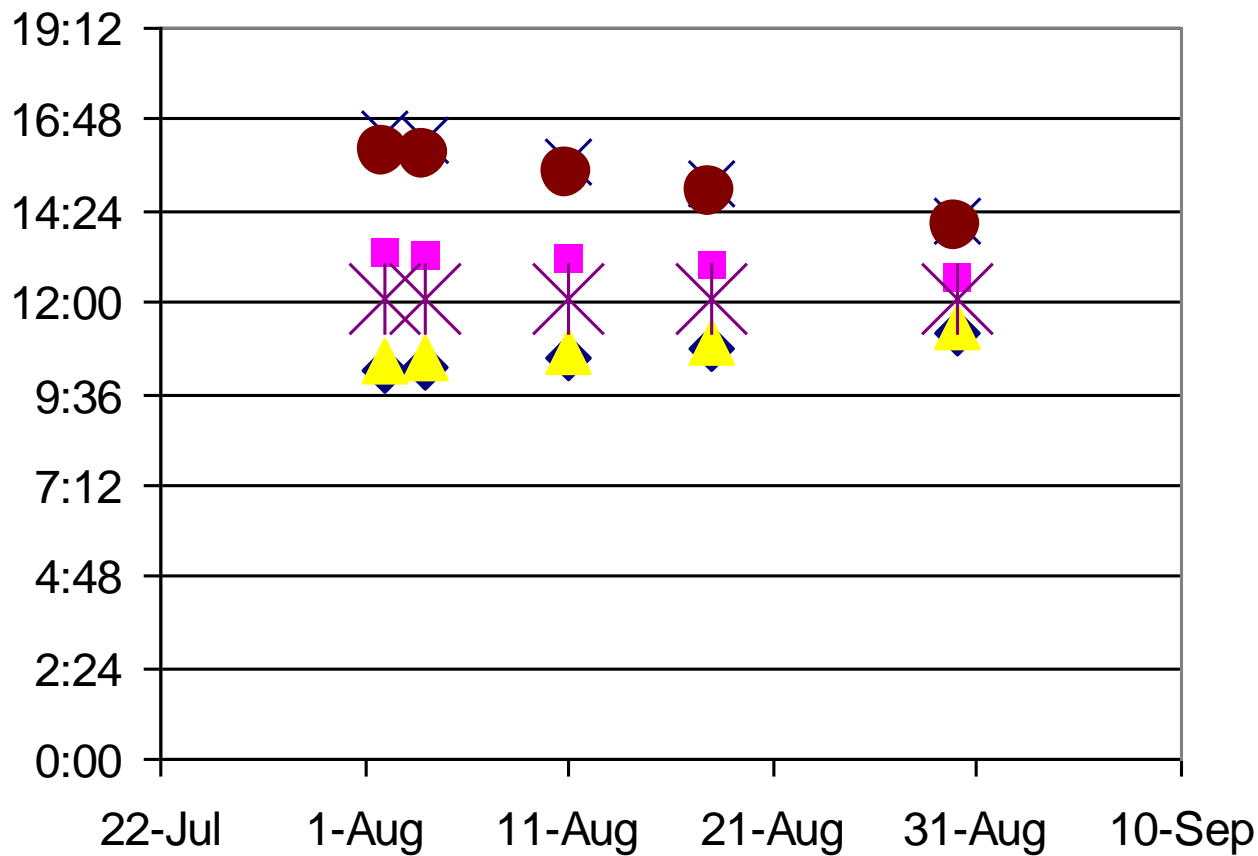
pillage



wanton



	A	B	C	D	E	F	G
1		Melbourne, Australia	Miami, FL, USA	Buenos Aires, Argentina	Juneau, AK, USA	Quito, Ecuador	Moscow, Russia
2							
3	Latitude	37° 52' S	25° 47' N	34° 20' S	58° 18' N	0° 14' S	55° 45' N
4	Aug 2 sunrise	7:19	6:48	7:46	4:51	6:17	5:37
5	Aug 2 sunset	17:33	20:06	18:14	21:15	18:23	21:34
6		10:14	13:18	10:28	16:24	12:06	15:57
7	Aug 4 sunrise	7:17	6:49	7:45	4:55	6:17	5:40
8	Aug 4 sunset	17:35	20:05	18:16	21:10	18:23	21:30
9		10:18	13:16	10:31	16:15	12:06	15:50
10	Aug 11 sunrise	7:09	6:52	7:38	5:11	6:16	5:54
11	Aug 11 sunset	17:41	20:00	18:21	20:53	18:22	21:14
12		10:32	13:08	10:43	15:42	12:06	15:20
13	Aug 18 sunrise	7:00	6:55	7:30	5:26	6:15	6:07
14	Aug 18 sunset	17:46	19:54	18:26	20:35	18:21	20:58
15		10:46	12:59	10:56	15:09	12:06	14:51
16	Aug 30 sunrise	6:44	7:00	7:15	5:52	6:11	6:30
17	Aug 30 sunset	17:57	19:42	18:34	20:02	18:18	20:28
18							



- ◆ Melbourne, Australia
- Miami, FL,
- ▲ Buenos Aires, Argentina
- × Juneau, AK, USA
- ✱ Quito, Ecuador
- Moscow, Russia



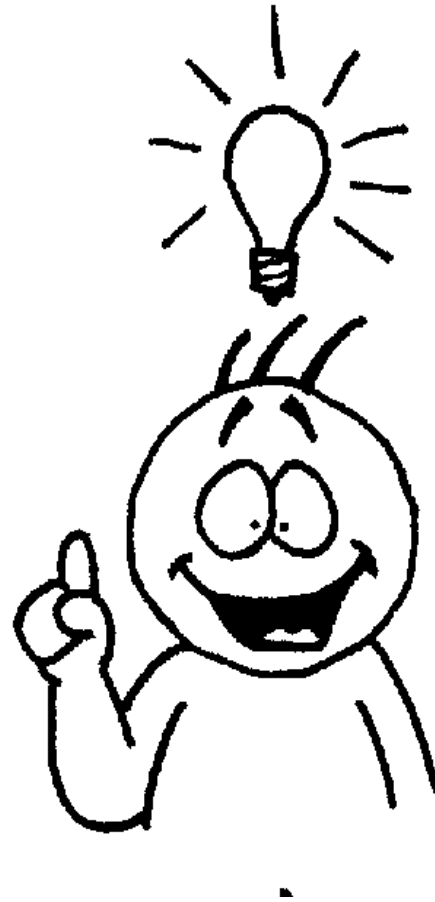
Acting out story of Isis and Osiris

Kinesthetic activities are those that involve physical movement.

Physical movement associated with specific knowledge helps generate a mental image of the knowledge in the mind of the learner.

Vocabulary Words

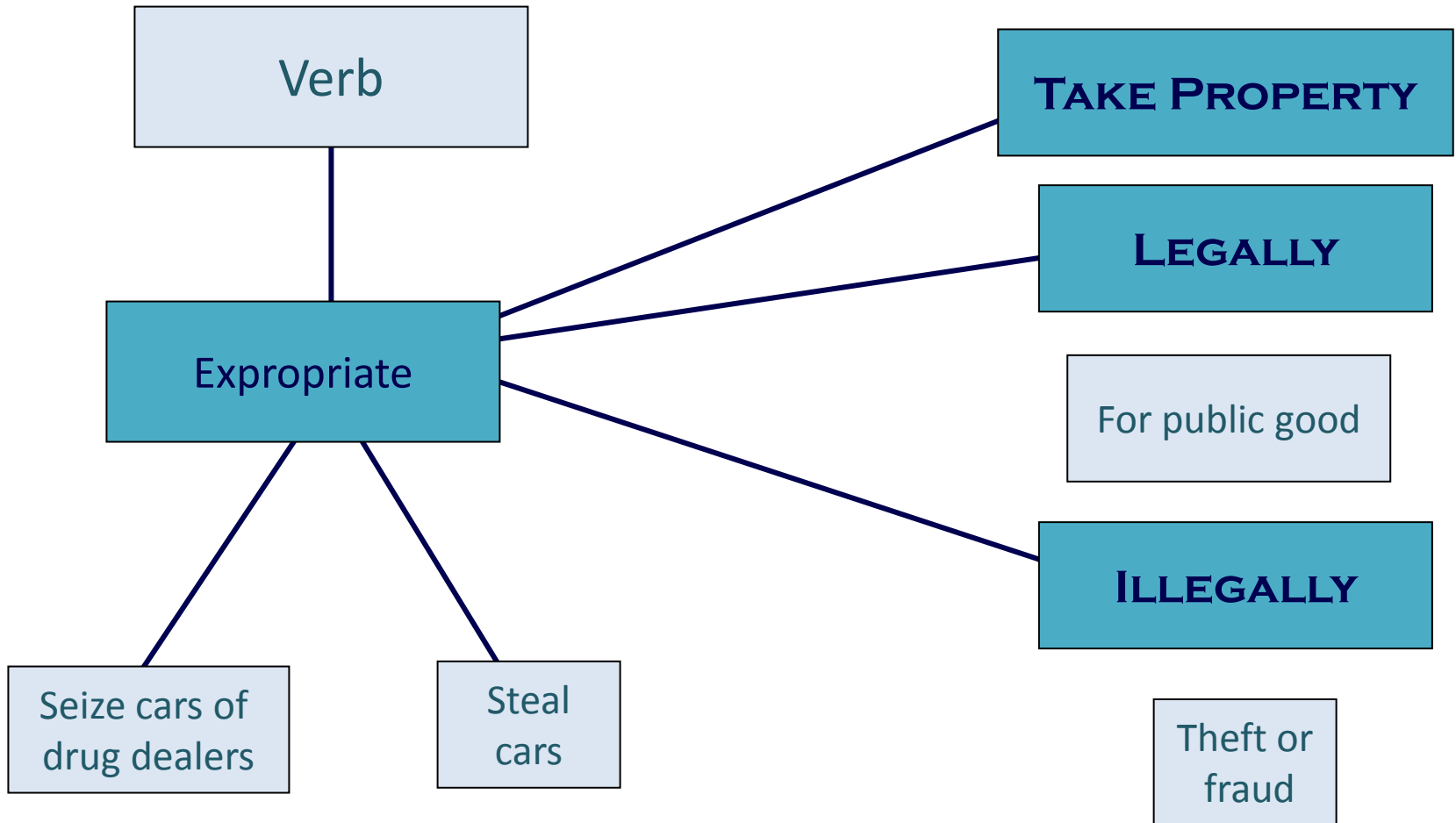
1. antipodes *
2. borborygmus
3. cullet
4. defenestrate
5. digerati *
6. expropriate
7. garbology *
8. hallux
9. otiose *
10. pellucid *



Nonlinguistic Vocabulary Activity

- Review the list of 10 vocabulary words.
- You are going to learn 5 words through traditional vocabulary instruction and 5 words through the creation of a nonlinguistic representation.
- Working with words 1, 5, 7, 9, and 10, please write a brief definition and use the word in a sentence.
- Follow along as we collectively create nonlinguistic representations for words 2, 3, 4, 6 and 8.

Concept Map



(Schwartz and Raphael, 1985)

Reflecting on Practice

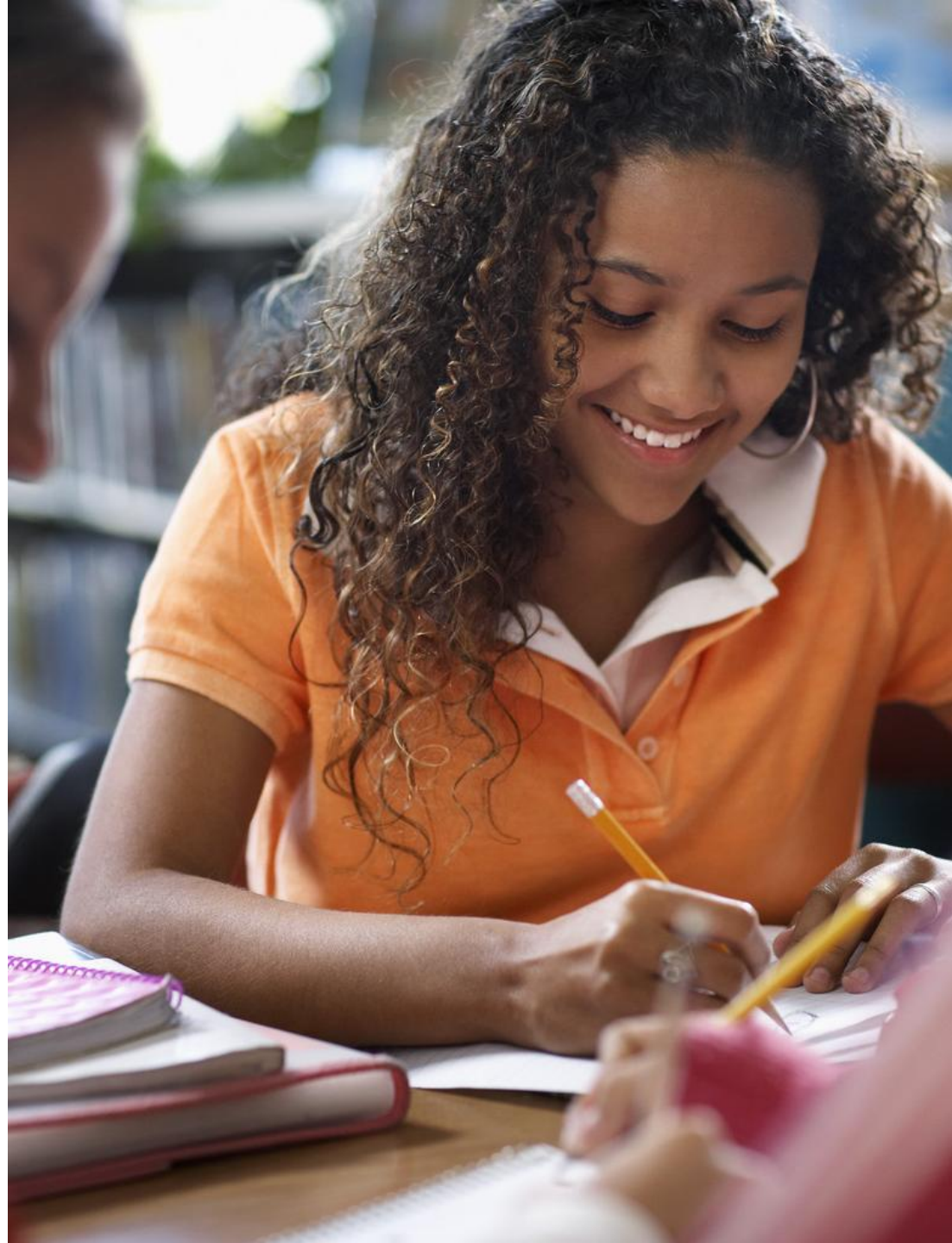
Individually complete the Nonlinguistic Representations Section on your Key Knowledge handout.

Be prepared to share one of your thoughts with the group.



Summarizing

This strategy helps students fill in missing parts and to translate information into a synthesized form.



Classroom Recommendations

Teach students the rule-based summarizing strategy.

Use summary frames.

Engage students in reciprocal teaching.

Steps in Rule-Based Summarizing

- Take out material that is not important to understanding.
- Take out words that repeat information.
- Replace a list of things with a word that describes the things in the list (e.g., use trees for elm, oak, and maple.)
- Find a topic sentence. If you cannot find a topic sentence, make one up.

Summary Frames

Narrative/Story

Topic-Restriction-Illustration (T-R-I)

Definition

Argumentation

Problem/Solution

Conversation

Narrative/Story Frame

1. Who are the main characters? What distinguishes them from other characters?
2. When and where did the story take place? What were the circumstances?
3. What prompted the action in the story?
4. How did the characters express their feelings?
5. What did the main characters decide to do? Did they set a goal? What was it?
6. How did the main characters try to accomplish their goals?
7. What were the consequences?

Topic-Restriction-Illustration Frame

1. Topic: What is the general statement or topic?
2. Restriction: What information does the author give that boxes in or narrows the general statement or topic?
3. Illustration: What examples does the author give to illustrate the topic or restriction?

Definition Frame

1. What is being defined?
2. To which general category does the item belong?
3. What characteristics separate the item from the other items in the general category?
4. What are some types or classes of the item being defined?

Argumentation Frame

1. Evidence: What information is presented that leads to a claim?
2. Claim: What is asserted as true? What basic statement or claim is the focus of the information?
3. Support: What examples or explanations support the claim?
4. Qualifier: What restricts the claim, or what evidence counters the claim?

The Conversation Frame

1. How did the members of the conversation greet each other?
2. What question or topic was insinuated, revealed, or referred to?
3. How did their discussion progress?
4. How did the conversation conclude?

Problem/Solution Frame

1. What is the problem?
2. What is a possible solution?
3. What is another possible solution?
4. What is another possible solution?
5. Which solution has the best chance of succeeding and why?

Reciprocal Teaching

Summarizer

- Reads a short section and summarizes for group

Questioner

- Asks questions to identify important information.

Clarifier

- Clarifies vocabulary terms or pronunciations.

Predictor

- Leads discussion on what may happen next in the text.

Reflecting on Practice

Individually complete the section on your Key Knowledge handout.

Be prepared to share one of your thoughts with the group.



Note taking

Enhances students' ability to organize information in a way that captures the main ideas and supporting details



Classroom Recommendations

Give students teacher-prepared notes.

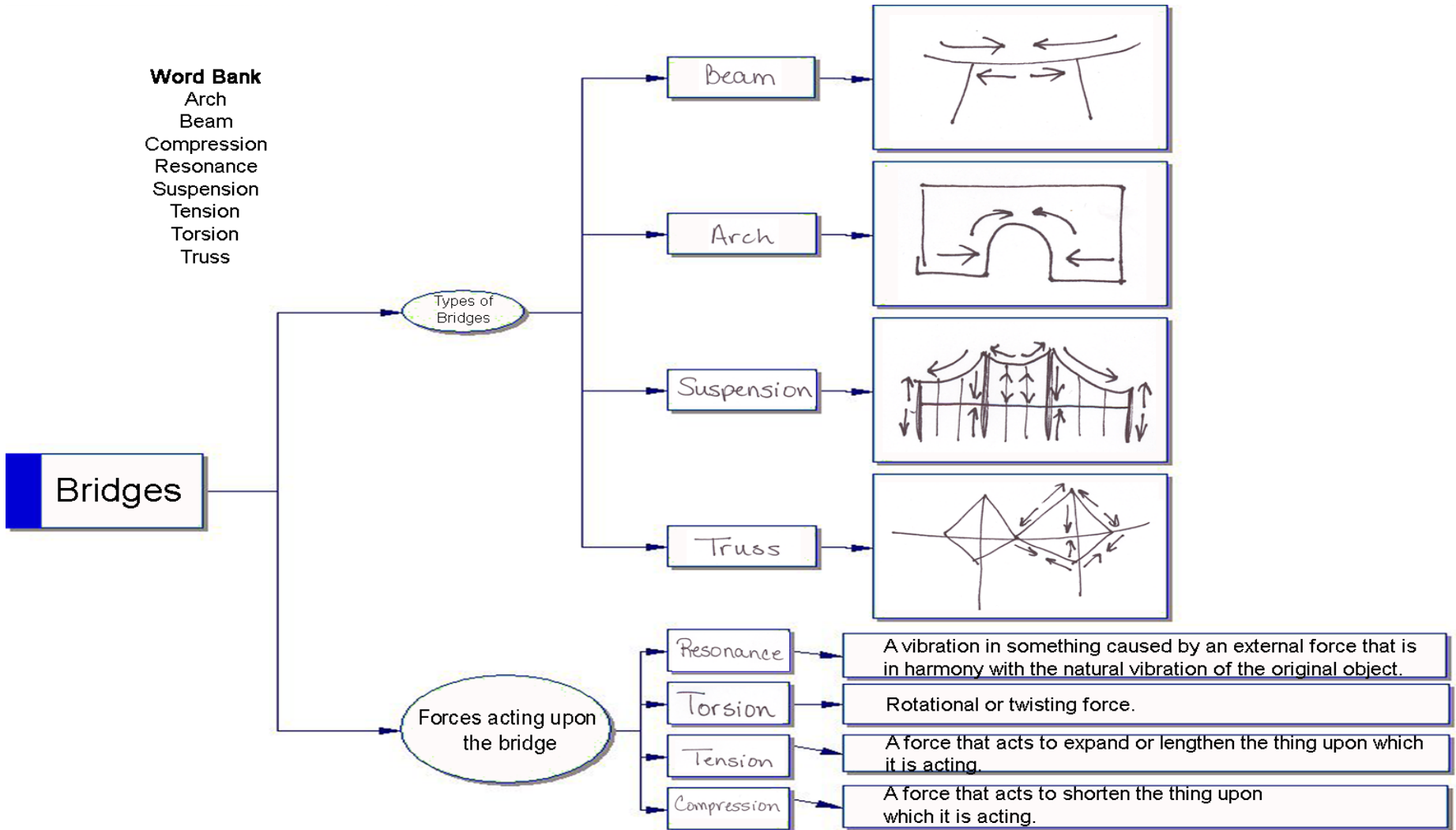
Teach students a variety of note-taking formats.

Provide opportunities for students to revise their notes and use them for review.

Teacher-Prepared Notes

Word Bank

Arch
Beam
Compression
Resonance
Suspension
Tension
Torsion
Truss



Teacher Prepared Notes

Graphic

Questions

I. The Basics

- A. Ants are part of a family of insects that have a very organized social life.
- B. Nearly 9,000 species exist.
- C. Ants are found around the world, except in the polar regions at the highest altitudes.

II. Characteristics

- A. Ants are related to wasps- have an abdomen that is joined to the thorax by a “pedicel.”
- B. Have antennae that have “elbows” or joints in the middle.
- C. Some ants have a sting that the workers use to defend the colony or themselves.
- D. Many species secrete a type of acid that is a strong repellent.

The Bermuda Triangle

Symbolic Representation

Where is it located?

What theories support its existence?

- 1.
- 2.
- 3.
- 4.

What are some examples of disappearances?

Flight 19

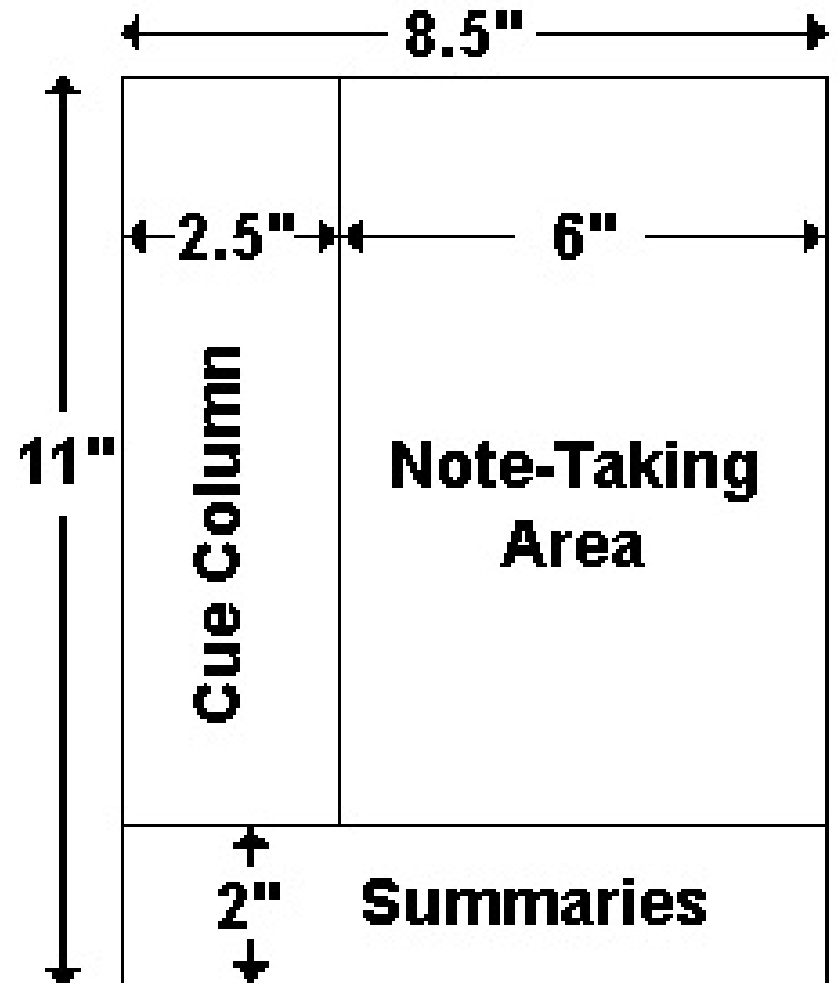
USS Cyclops

What is the Bermuda triangle?

What does research tell us?

Remind students to
review their notes.

THE CORNELL
METHOD



Three Types of Note Taking

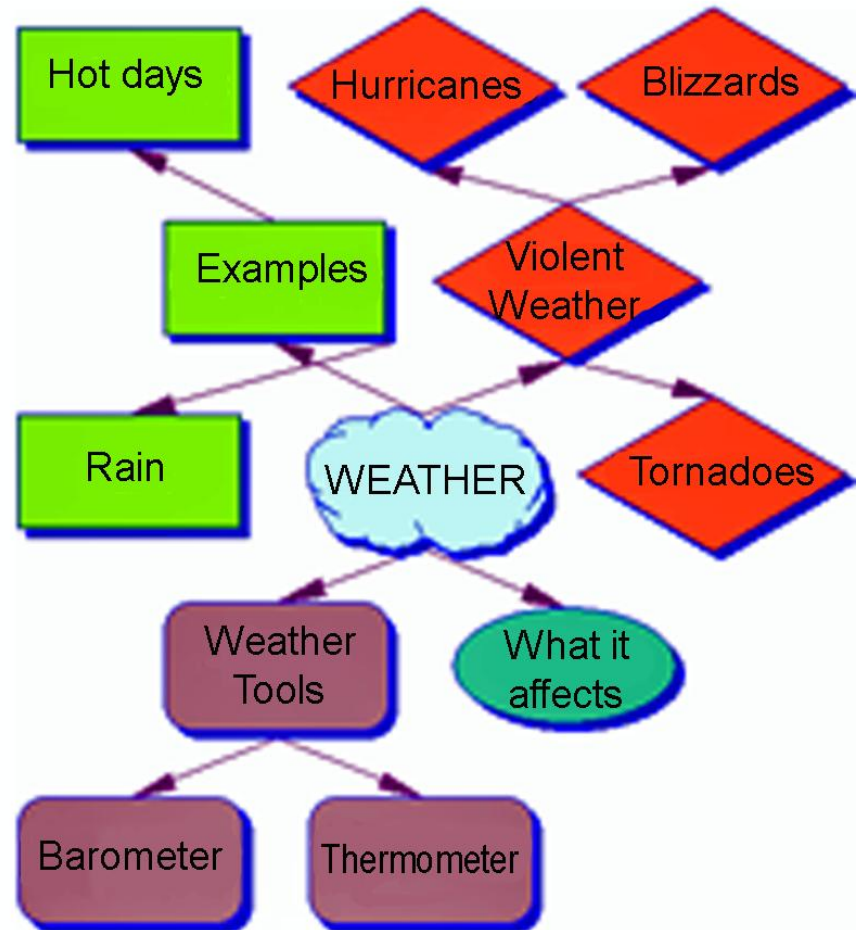
Webbing

Informal
outline

Combination
notes

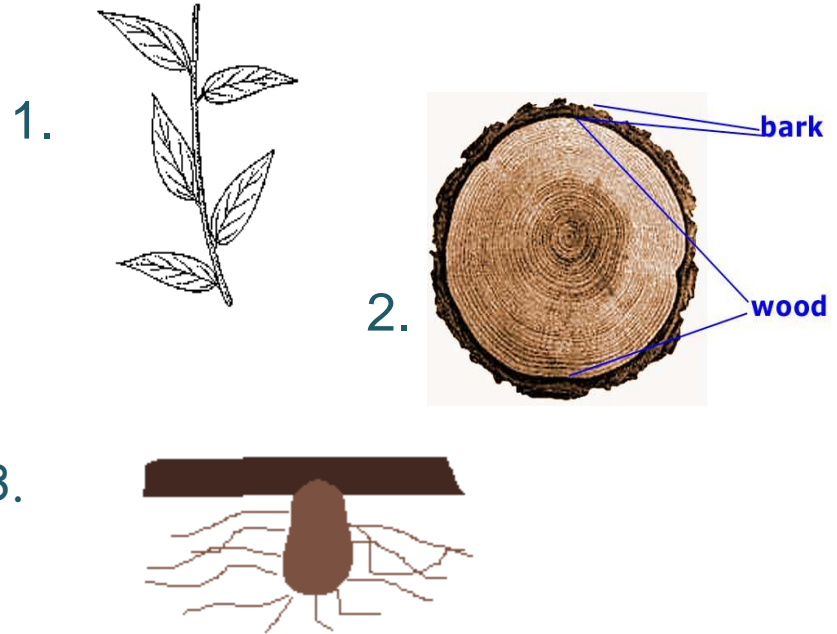
Outline created in Inspiration

- I. Weather
 - A. What it affects
 - B. Weather tools
 - 1. Thermometer
 - 2. Barometer
 - C. Examples
 - 1. Rain
 - 2. Hot days
 - D. Violent weather
 - 1. Tornadoes
 - 2. Hurricanes
 - 3. Blizzards



Combination Notes

1. A Dicot leaf has veins that branch.
2. The stem of a Dicot is woody.
3. The Taproot is the main root.



Dicots are plants that have a woody stem, leaves with veins that branch, and a main taproot.

Activity

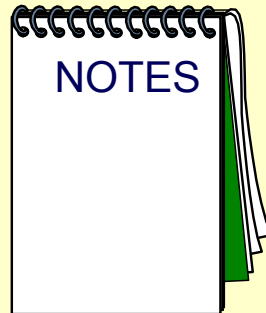


- Watch the [video on penguins](#), taking notes in either a web or informal outline.
- At your table, write a complete sentence for each of the points in the advance organizer.
- Draw an inverted T on a sheet of paper and record your 5 sentences on the left side.
- Draw a nonlinguistic representation for each fact on the right side.
- Write a 2-3 sentence summary linking all five facts
- Share your combo notes as a gallery walk.

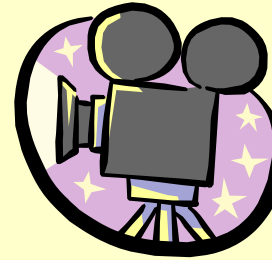
Combination Notes For Younger Children



Big Ideas



Notes



Pictures



Questions

--	--	--	--

Graphic Organizer for Combination Notes

List the five main points of the chapter.

Draw something that would help remind you of each of the five main points.

Write a 2 - 3 sentence summary of the chapter here.

Reflecting on Practice

Individually complete the next section on your Key Knowledge handout.



Be prepared to share one of your thoughts with the group.



Learning Objectives

Day Two

By the end of the learning session, we will:

- *Know the categories of strategies that comprise the component of Helping Students Develop Understanding,*
- *Understand the classroom recommendations for each of the strategies,*
- *Make connections between and among the strategies,*
- *Transfer the learning into specific changes in your pedagogy that you will apply in the next two weeks.*

Day One Evaluations

1

- ***Thank you for a great day!!***

2

- Review your notes and slides