Effective Teaching Strategies
Nonlinguistic Representations

Waterbury Public Schools
Bilingual/ESOL Education Department

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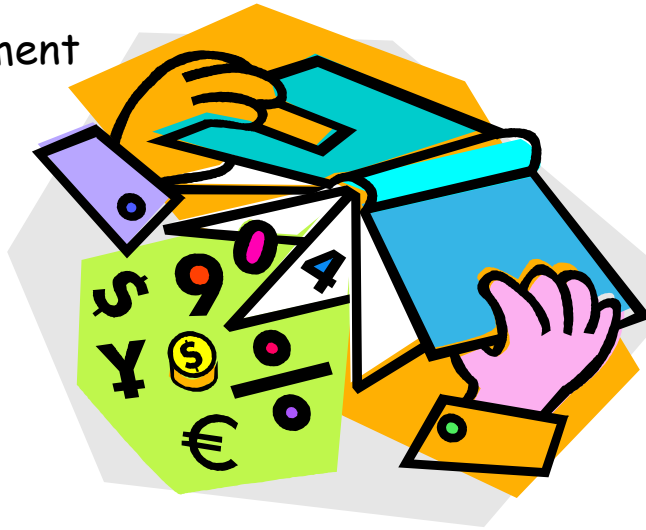


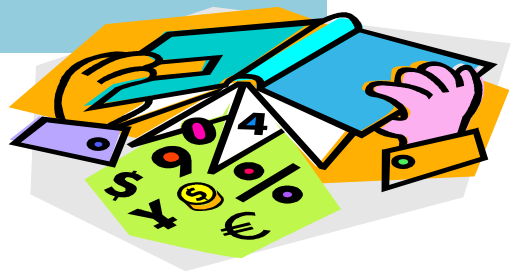
As a result of this workshop, participants will be able to:

- Understand how nonlinguistic representations enhance students' understanding and ability to use knowledge

- Know how to apply this instructional strategy in your classroom.

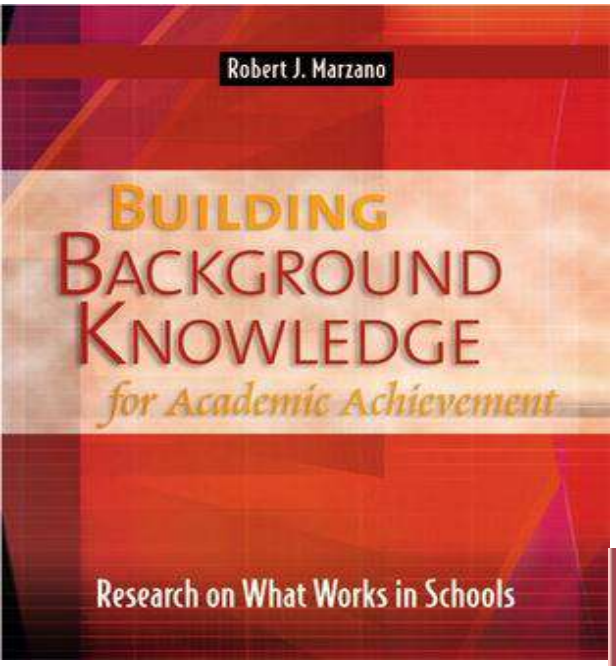
Effective Teaching Strategies
Agenda

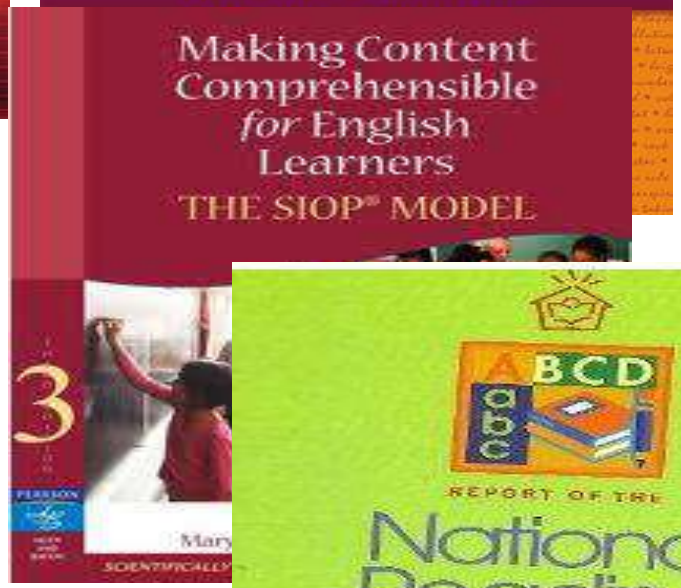
Nonlinguistic Representations

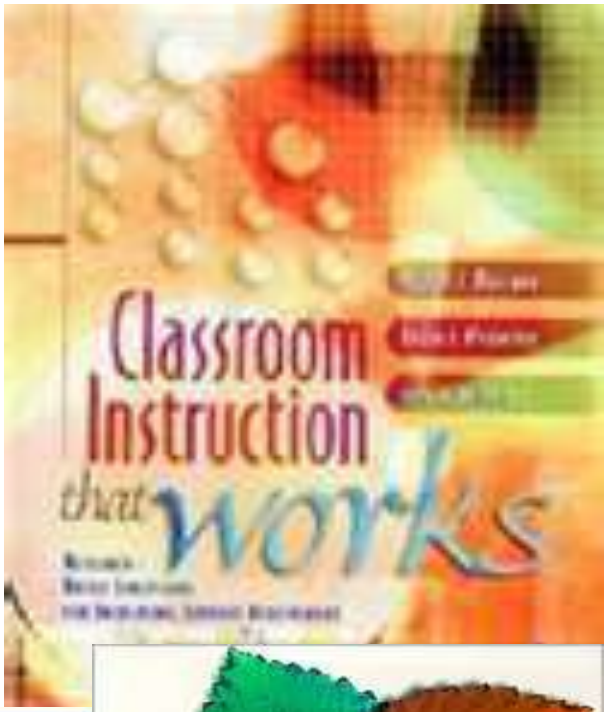


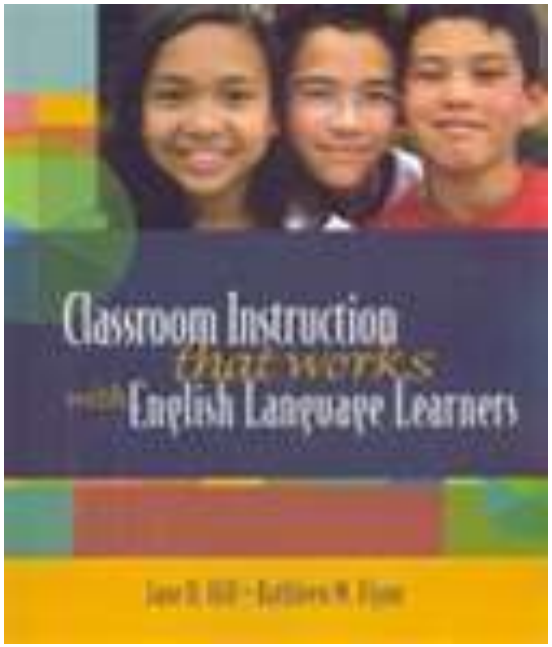
- **Nonlinguistic Representations**
  - Creating Graphic Representations
  - Making Physical Models
  - Generating Mental Pictures
  - Drawing pictures and pictographs
  - Engaging in Kinesthetic Activities

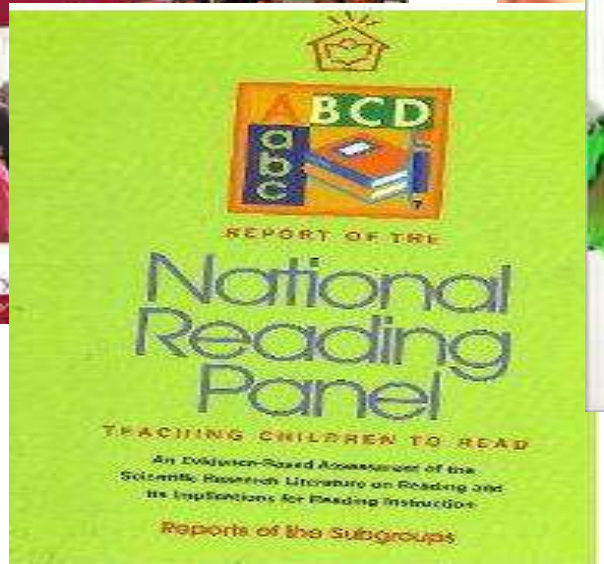
According to research …

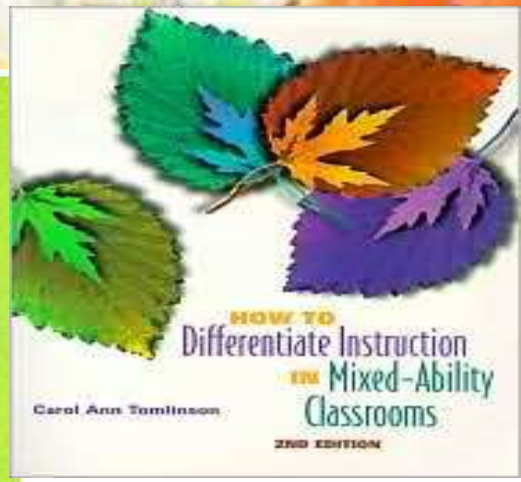












Meta-analysis

- Combines the results of many studies to determine the average effect of a given strategy
- Results are translated as “effect size”

What is an Effect Size?

The increase or decrease in achievement of a group exposed to a certain strategy as expressed in standard deviation units, which can be translated into percentiles

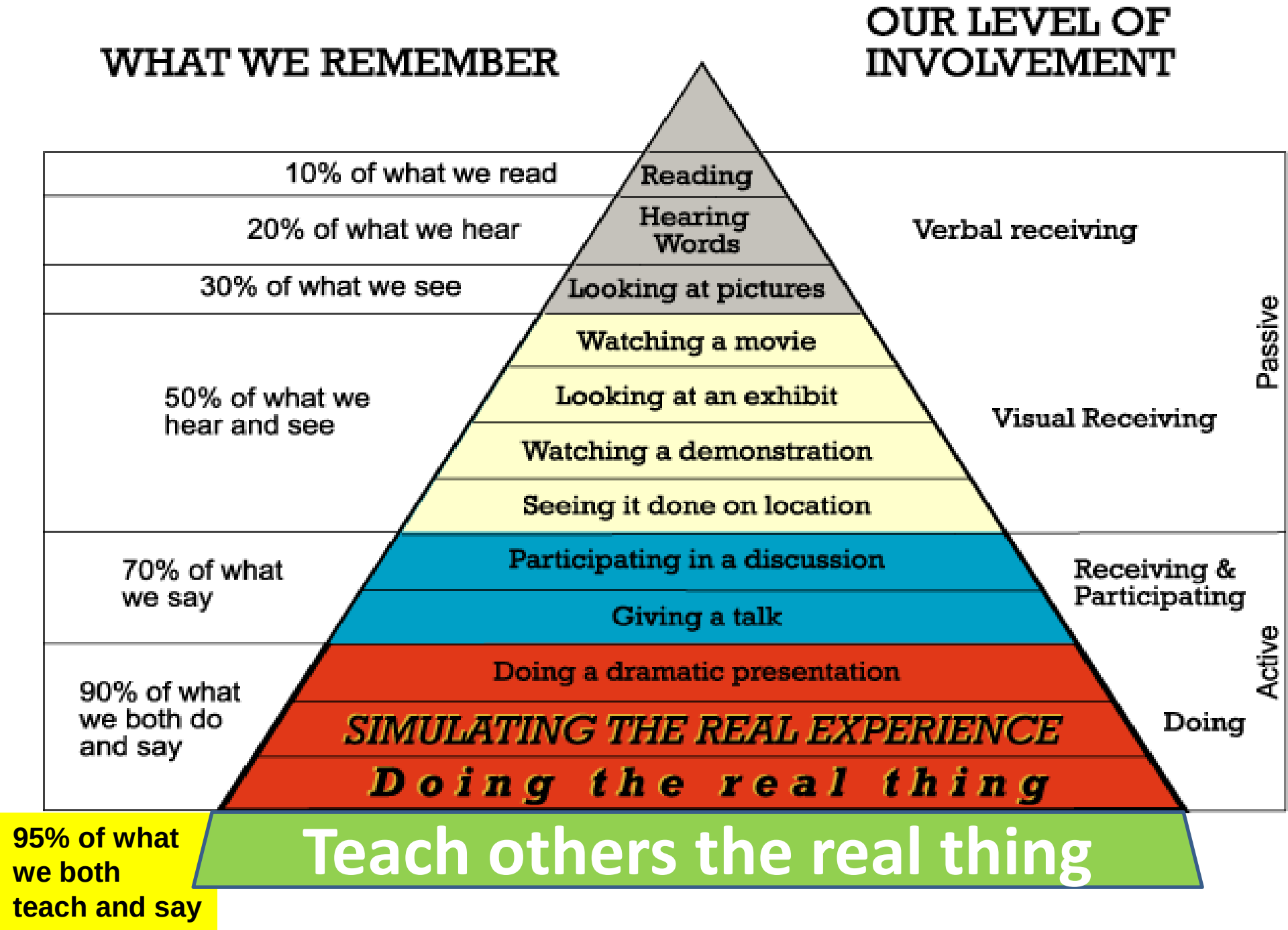
What Does Effect Size Represent?

- An effect size of .20 = small gain
- An effect size of .50 = medium gain
- An effect size of .80 = large gain

Meta-analysis Results for Categories of Learning Strategies

Category	Average Effect Size	Average Percentage Gain	Number of Studies
1. Similarities & Differences	1.61	45	31
2. Summarizing & Note Taking	1.00	34	179
3. Reinforcing Effort & Providing Recognition	.80	29	21
4. Practice & Homework	.77	28	134
5. Nonlinguistic Representation	.75	27	246
6. Cooperative Learning	.73	27	122
7. Setting Objectives & Providing Feedback	.61	23	408
8. Generating & Testing Hypotheses	.61	23	63
9. Cues & Questions & Advance Organizers	.59	22	1,251

Classroom Instruction that Works for English Language Learners (2008)


WHAT WE REMEMBER
OUR LEVEL OF INVOLVEMENT
10% of what we read
Reading
20% of what we hear
Hearing Words
Verbal receiving
30% of what we see
Looking at pictures
Watching a movie
50% of what we hear and see
Looking at an exhibit
Visual Receiving
Watching a demonstration
Seeing it done on location
Passive
70% of what we say
Participating in a discussion
Receiving & Participating
Giving a talk
Active
90% of what we both do and say
Doing a dramatic presentation
SIMULATING THE REAL EXPERIENCE
Doing
Doing the real thing
Teach others the real thing
95% of what we both teach and say

Definitions of Categories of Instructional Strategies

Category	Definition
Similarities & Differences	Strategies that enhance students' understanding and ability to use knowledge by having them identify similarities and differences among items.
Summarizing & Note Taking	Strategies that enhance students' ability to synthesize information and organize it in a way that captures the main ideas and key supporting details.
Reinforcing Effort & Providing Recognition	•Strategies that enhance students' understanding of the relationship between effort and achievement by addressing students' attitudes and beliefs about learning. •Strategies that reward or praise students for attaining goals.
Practice & Homework	•Strategies that encourage students to practice, review, and apply knowledge. •Strategies that enhance students' ability to reach the expected level of proficiency to a skill or process
Nonlinguistic Representation	Strategies that enhance students' ability to represent and elaborate on knowledge using images.
Cooperative Learning	Strategies that provide a direction for learning and encourage students to interact with each other in groups in ways that enhance their learning
Setting Objectives & Providing Feedback	Strategies that help students learn how well they are performing relative to a particular learning goal so that they can improve their performance
Generating & Testing Hypotheses	Strategies that enhance students' understanding of and ability to use knowledge by having them generate and test hypotheses
Cues & Questions & Advance Organizers	Strategies that enhance students' ability to retrieve, use, and organize what they already know about the topic

Classroom Instruction that Works for English Language Learners (2008)

Definitions of Categories of Learning Strategies (cont.)

Category	Definition
Practice & Homework	•Strategies that encourage students to practice, review, and apply knowledge. •Strategies that enhance students' ability to reach the expected level of proficiency to a skill or process
Nonlinguistic Representation	Strategies that enhance students' ability to represent and elaborate on knowledge using images.
Cooperative Learning	Strategies that provide a direction for learning and encourage students to interact with each other in groups in ways that enhance their learning

The learning strategies are tools for your toolbox and are most effective when implemented purposely, intentionally, and explicitly, or “P.I.E.”:

- **Purposely-**implemented in accordance with recommendations
- **Intentionally**-implemented with sufficient time and intensity
- **Explicitly-** implemented consistently and until success is achieved

EXPLICIT Teaching

4) Independence

You do, I watch.

3) Practice

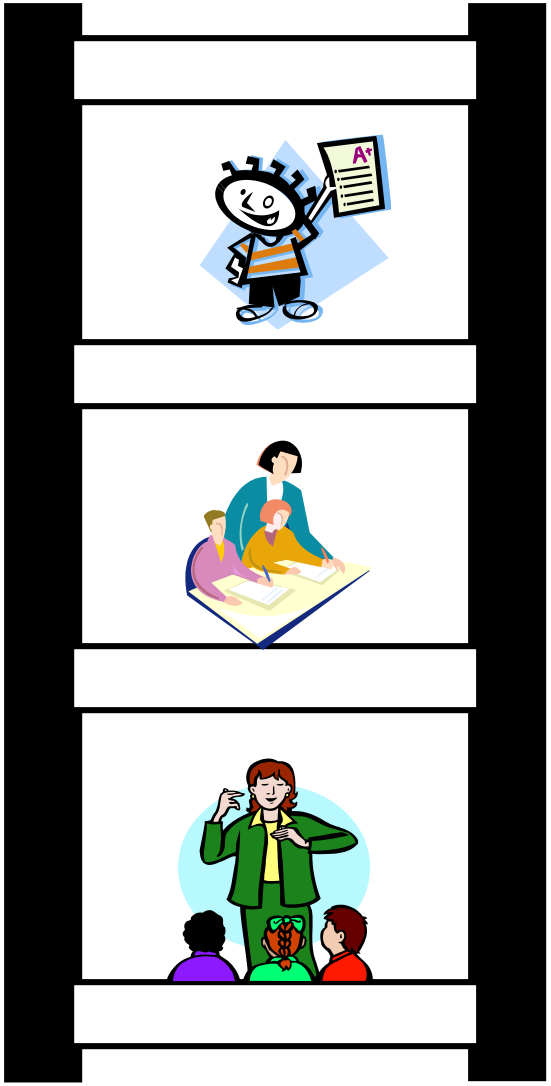
You do, I help.

2) Model

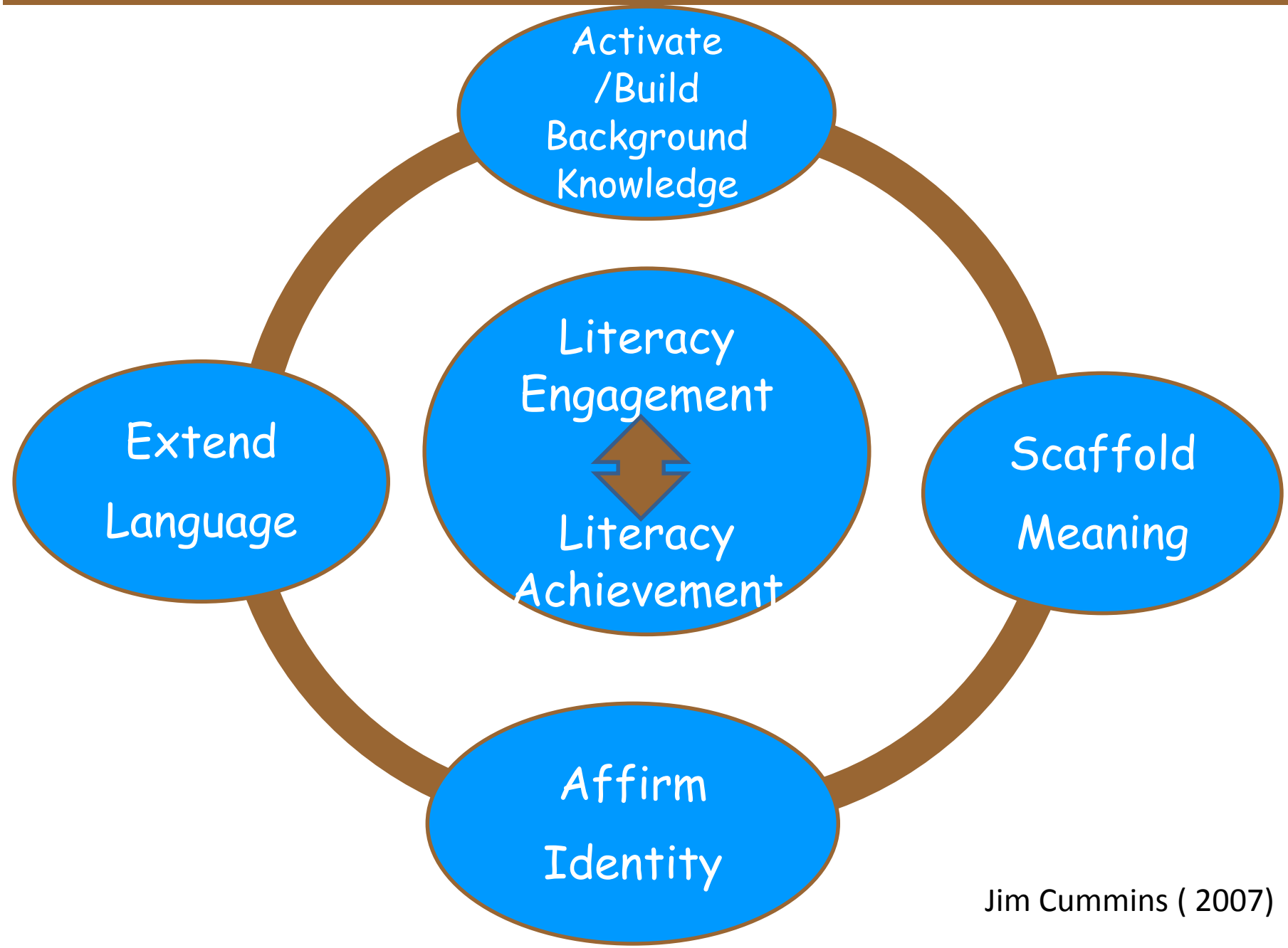
I do, you watch.

1) Explain

I talk, you listen.

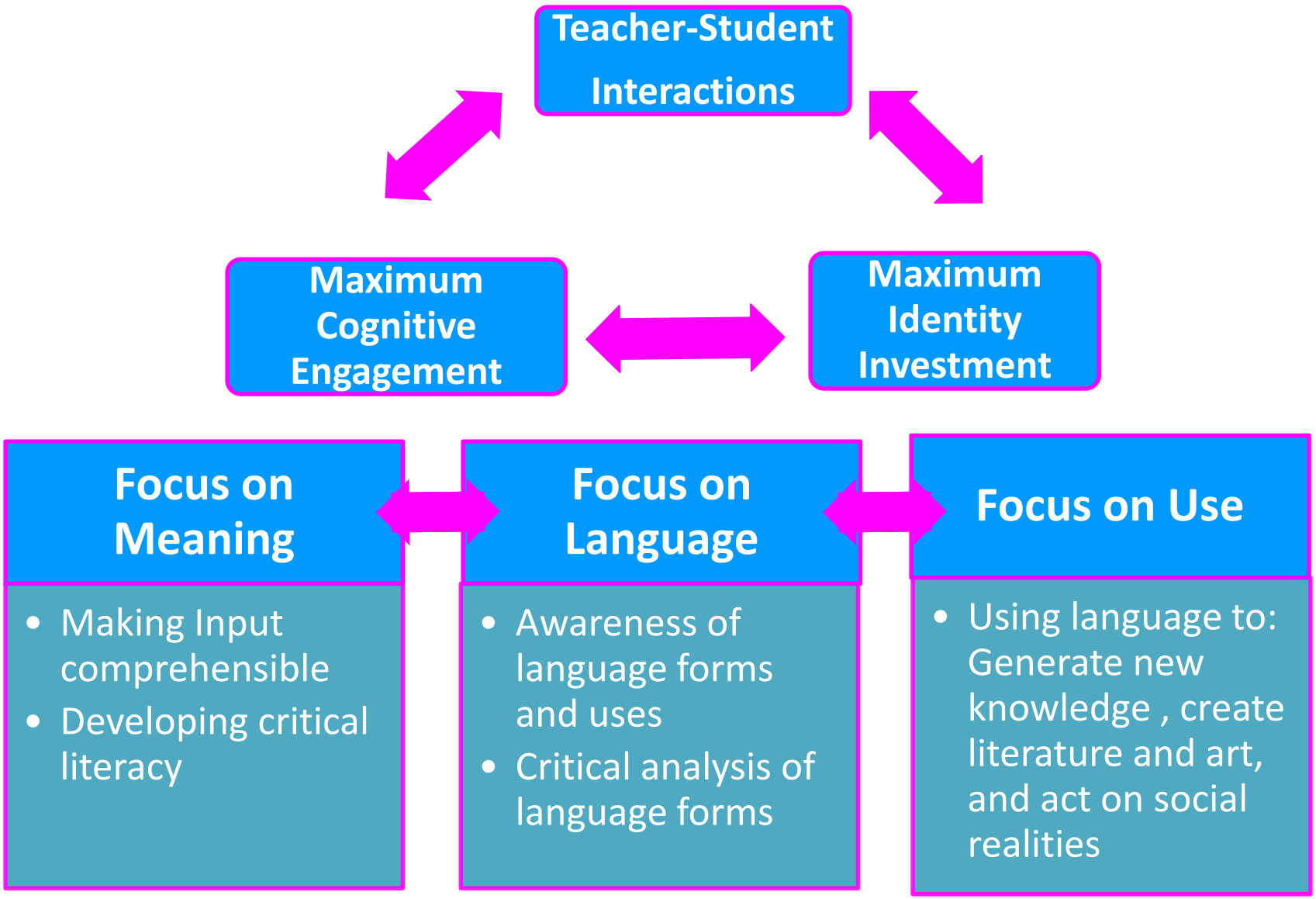


Conditions for Promoting Literacy Engagement



Jim Cummins (2007)

The Development of Academic Expertise



If we truly focused on Learning

- What would the **physical layout** of the classroom look like?
- What would I **hear and see** from the students?
- What would we need to **start** doing?
- What would we need to **stop** doing?

Reflecting on My Current Beliefs and Practices- Nonlinguistic Representations

- What is the purpose of representing knowledge in different forms?
- When do I ask students to represent knowledge using forms other than the words?
- What questions do I have about representing knowledge?

Nonlinguistic Representation

Enhance a student's ability to represent and elaborate on knowledge using mental images.

Generalization from the Research

- Nonlinguistic representation should elaborate on knowledge using **mental images.**

- There are **five** main types of nonlinguistic representations.

Recommendation for Classroom Practice

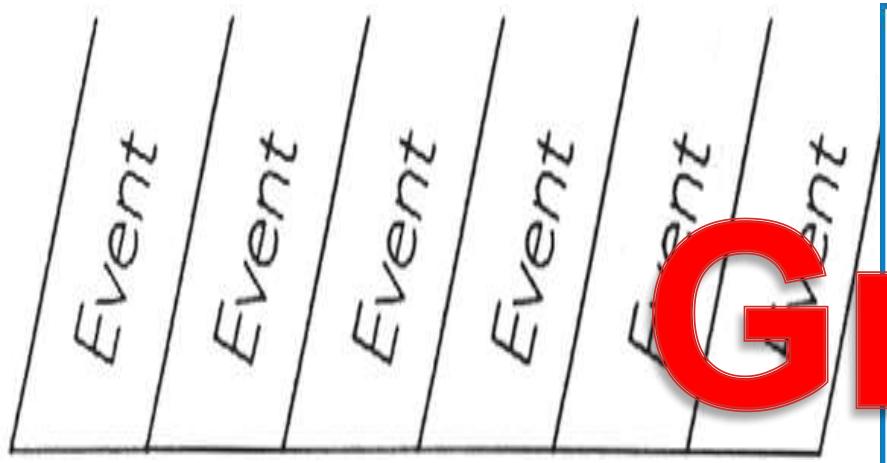
Student should use:

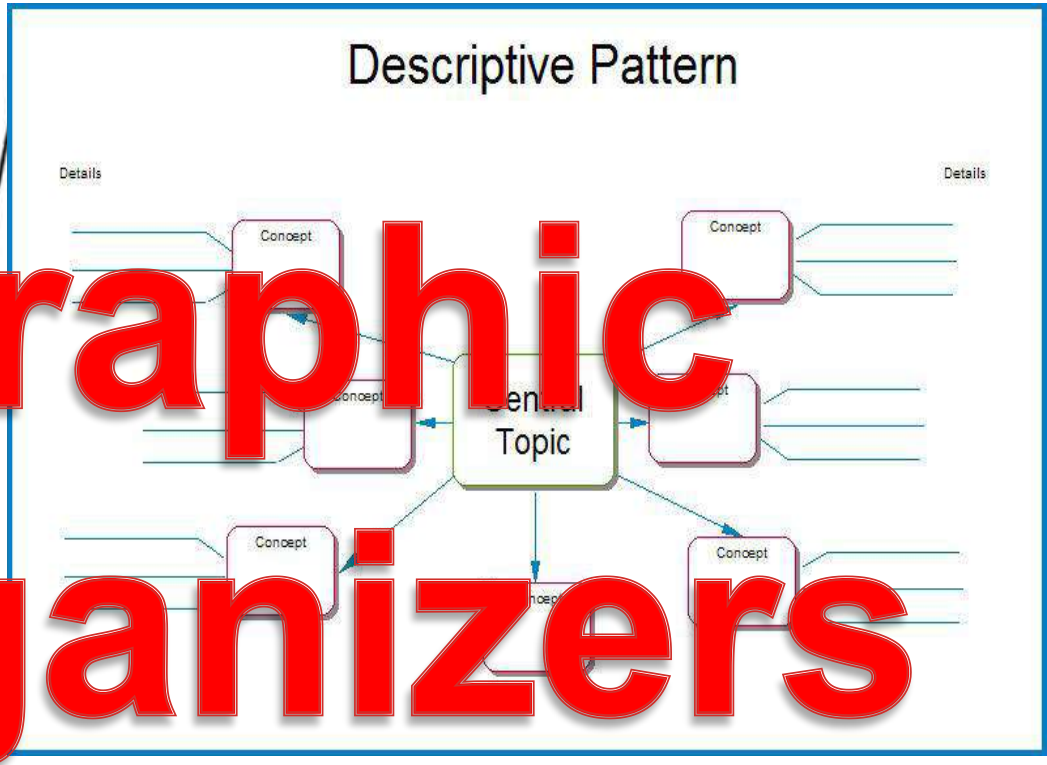
- graphic organizers
- pictographic representations
- mental images
- physical models, and
- kinesthetic representations

Recommendation for Classroom Practice

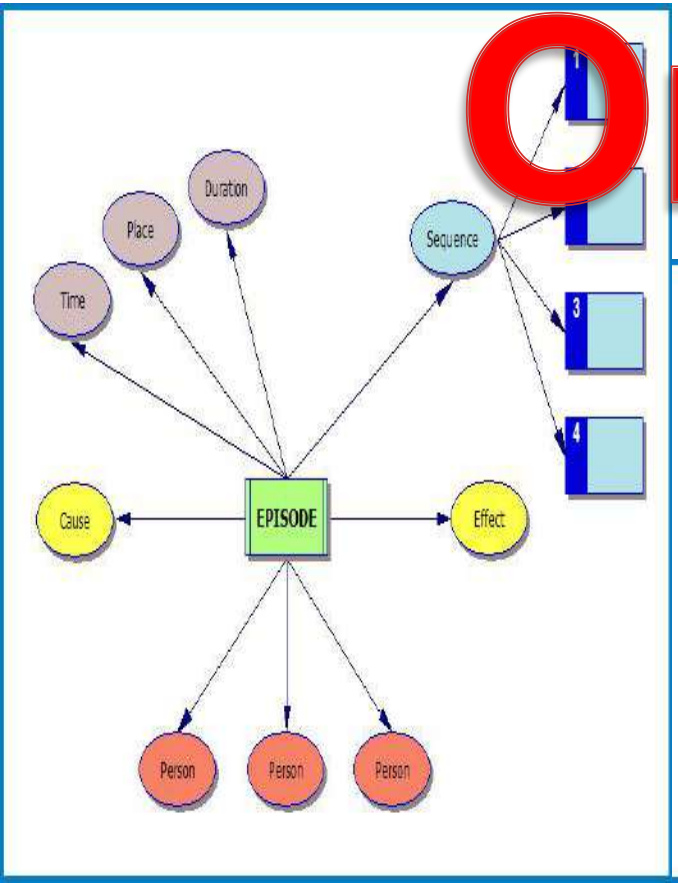
- Students should apply nonlinguistic representations to **enhance their content understanding** and talk about their choices to increase academic language.

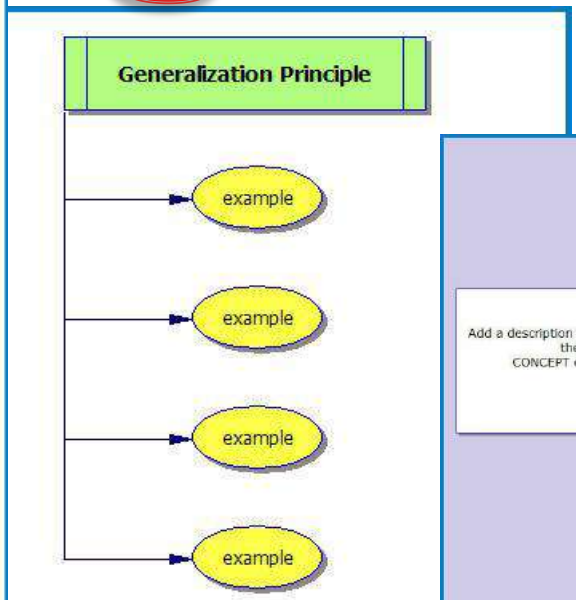
- Nonlinguistic representations can be **tools for language development.**

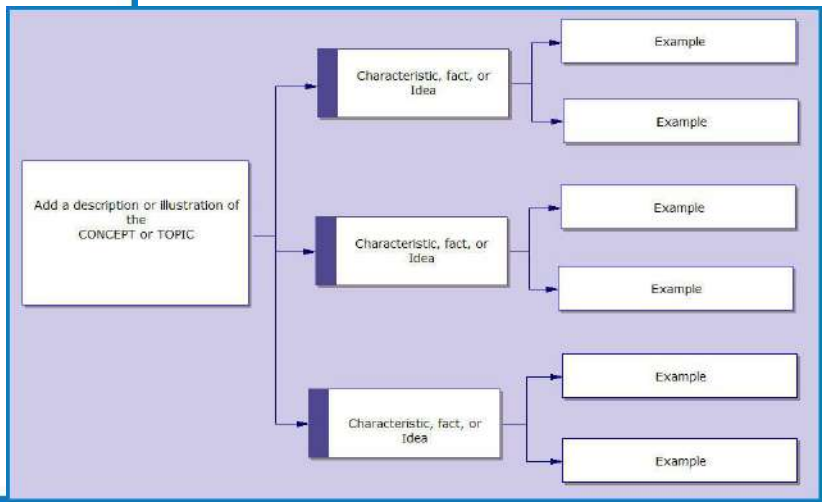




Graphic Organizers







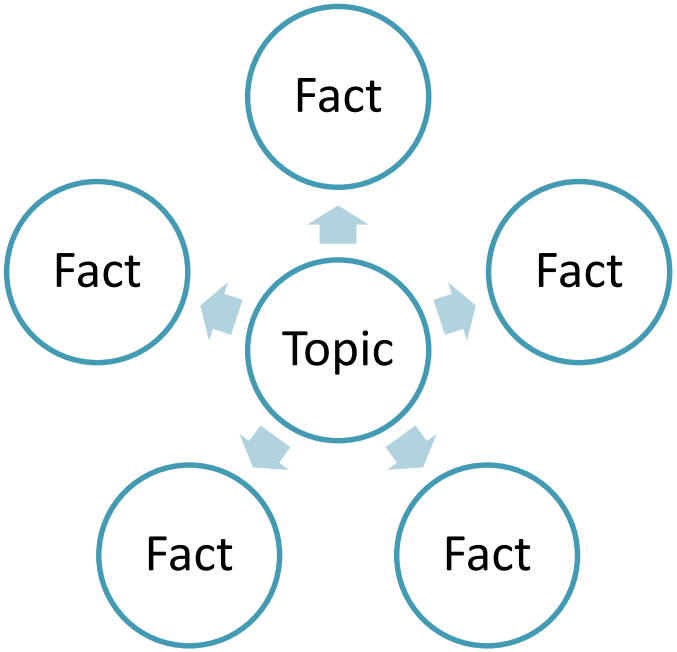
Graphic Organizers

Six common patterns used to organize information are:

- descriptions
- time sequences
- process/cause-effect relationships
- episodes,
- generalizations/principles,
- and concepts

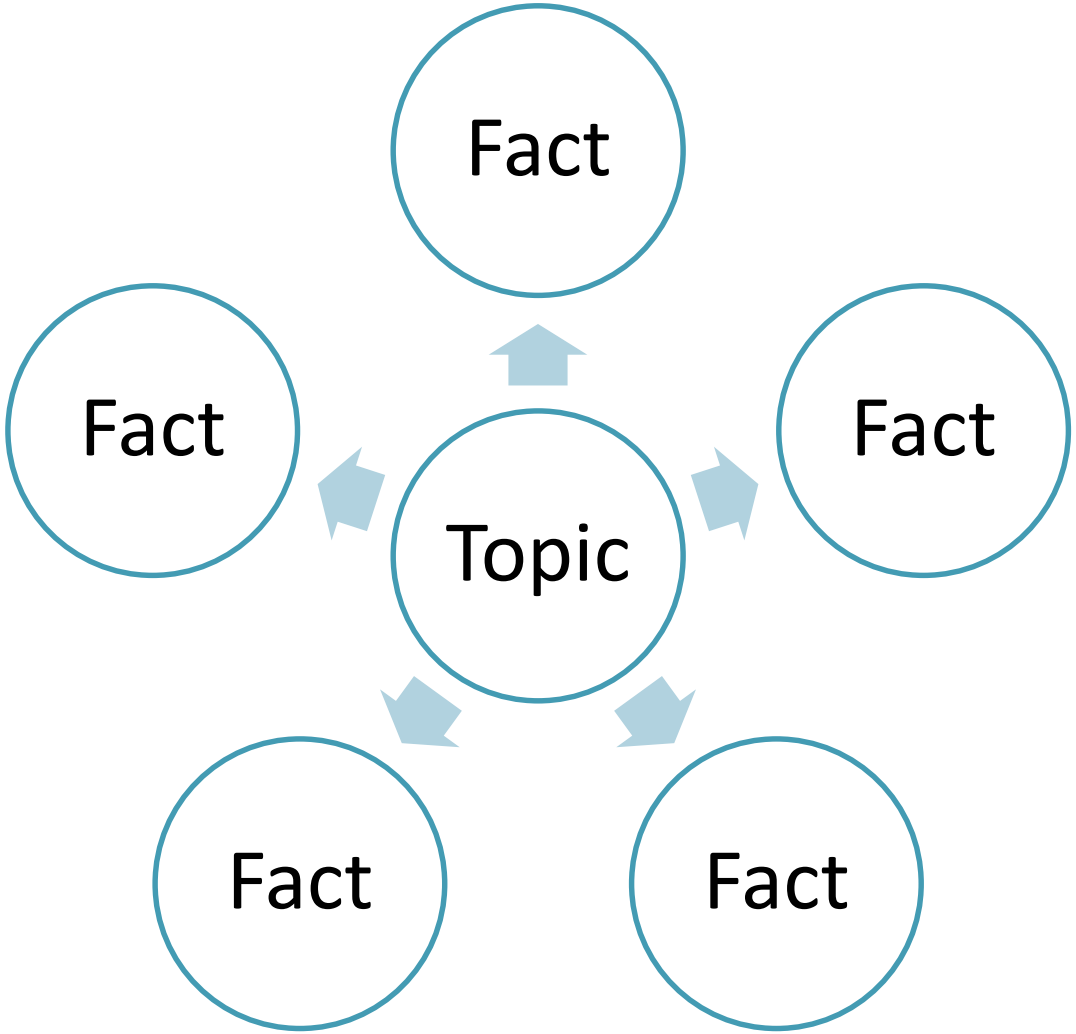
Description Pattern Organizer

Questions
1. What specific person, place, thing, or event is being described? 2. What are the most important attributes or characteristics? 3. Why are these particular attributes important or significant? 4. Why is the description important? Use your answers to these questions to form a summary.

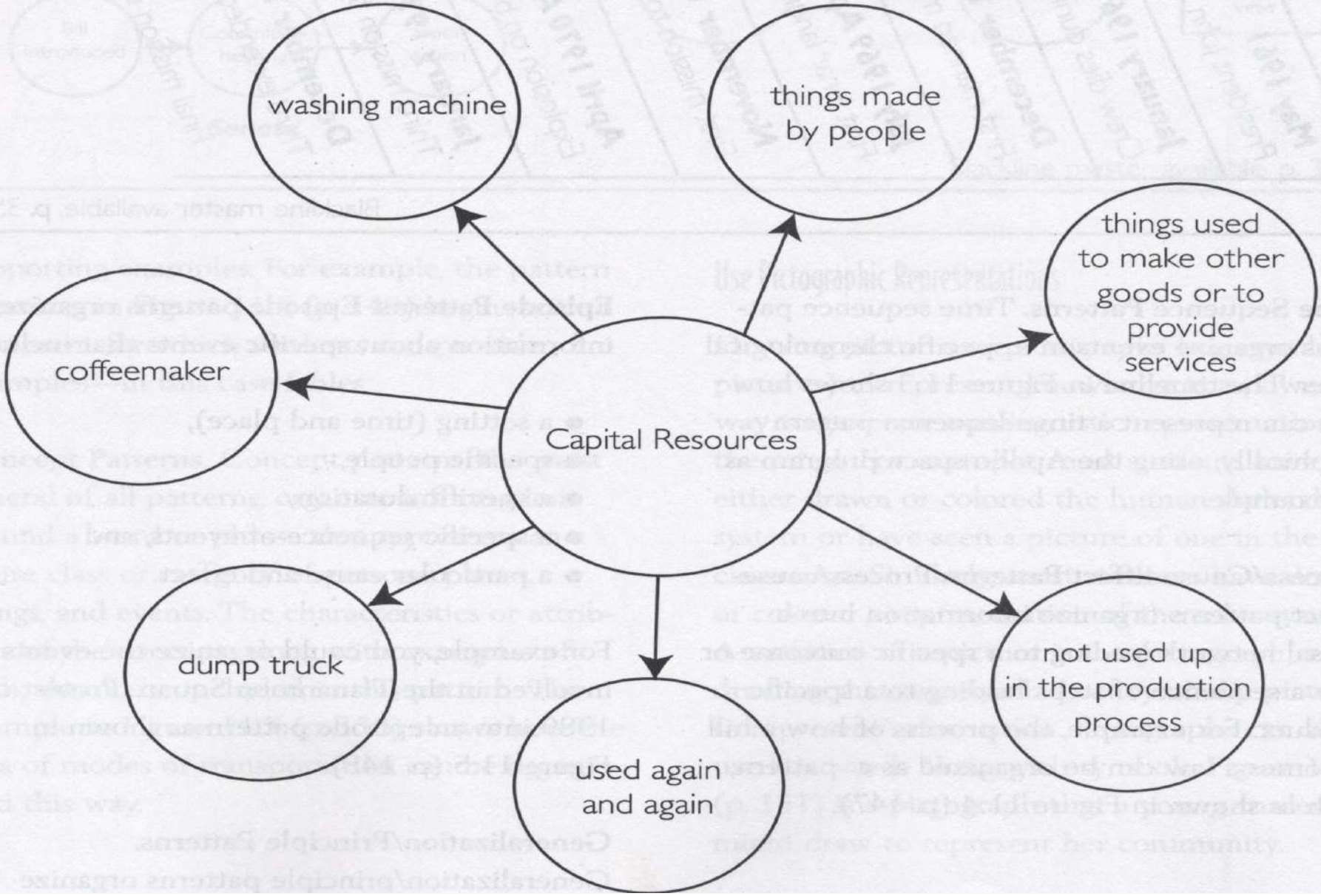


Signal Words			
above	across	along	appears to be
as in	behind	below	beside
between	down	in back of	In front of
looks like	near	next to	on top of
onto	outside	over	such as
to the right/left	under	adjectives	adverbs

Description Pattern Organizer



Descriptive Pattern Organizer—Capital Resources

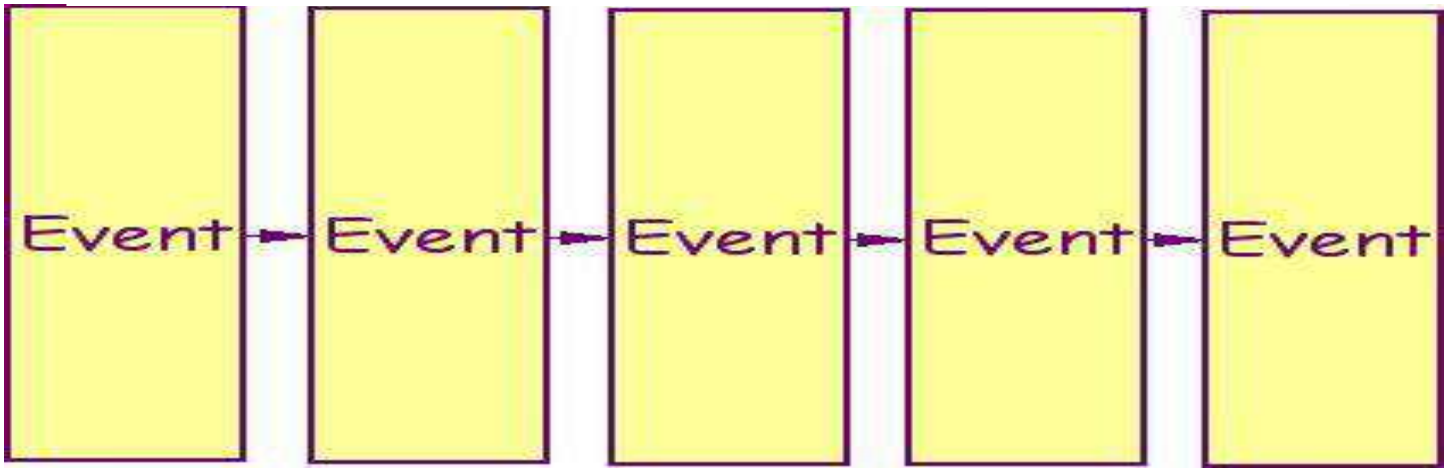


Time Sequence Pattern Organizer

Questions
1. What sequence is being described? 2. What are the major incidents that occur? Use your answers to these questions to form a summary.

Signal Words				
after	afterward	as soon as	before	during
finally	first	following	for (duration)	immediately
initially	later	meanwhile	next	not longer after
now	on (date)	preceding	second	soon
then	third	today	until	when

Topic:



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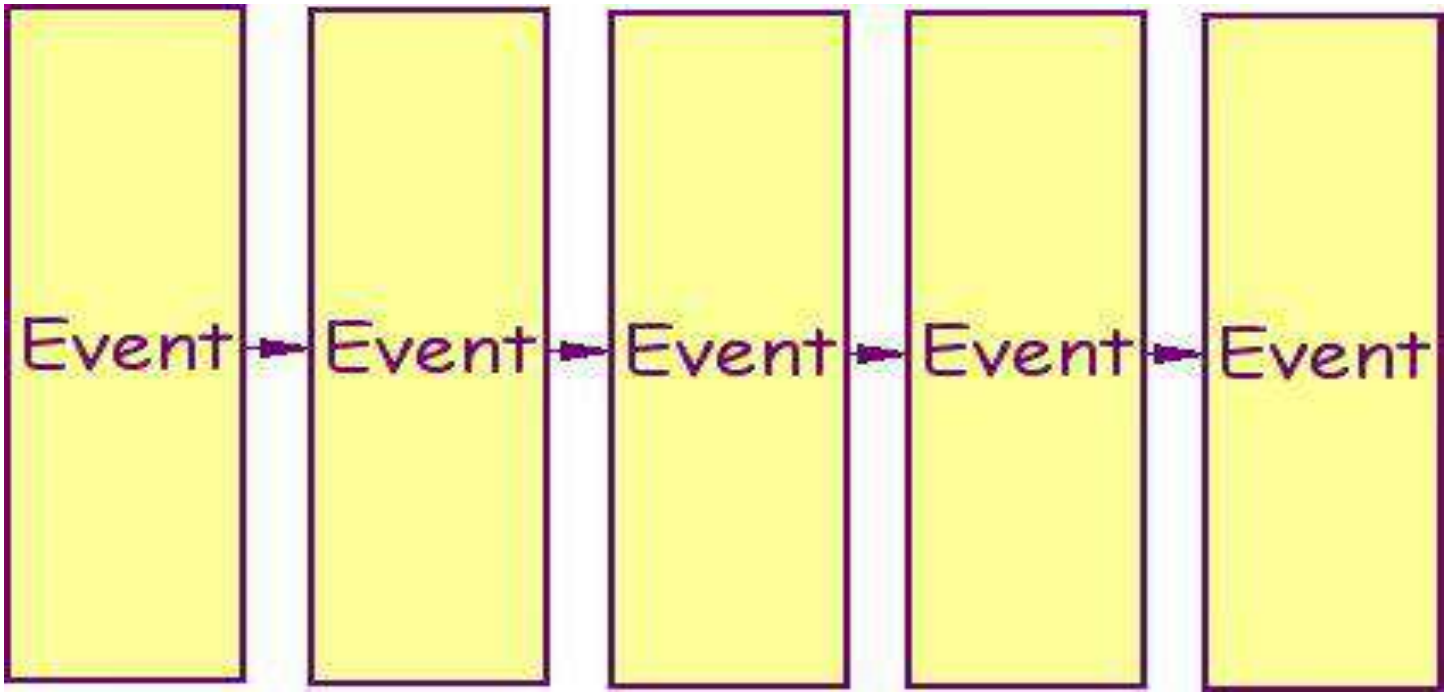


Time Sequence Pattern Organizer

Highlights of the Apollo Space Program

May 1961
President John F. Kennedy initiates the program

January 1967 Apollo 1
Crew dies during simulation

December 1968 Apollo 8
First manned mission to achieve lunar orbit

July 1969 Apollo 11
First lunar landing mission

November 1969 Apollo 12
First mission to make a pinpoint landing on the moon

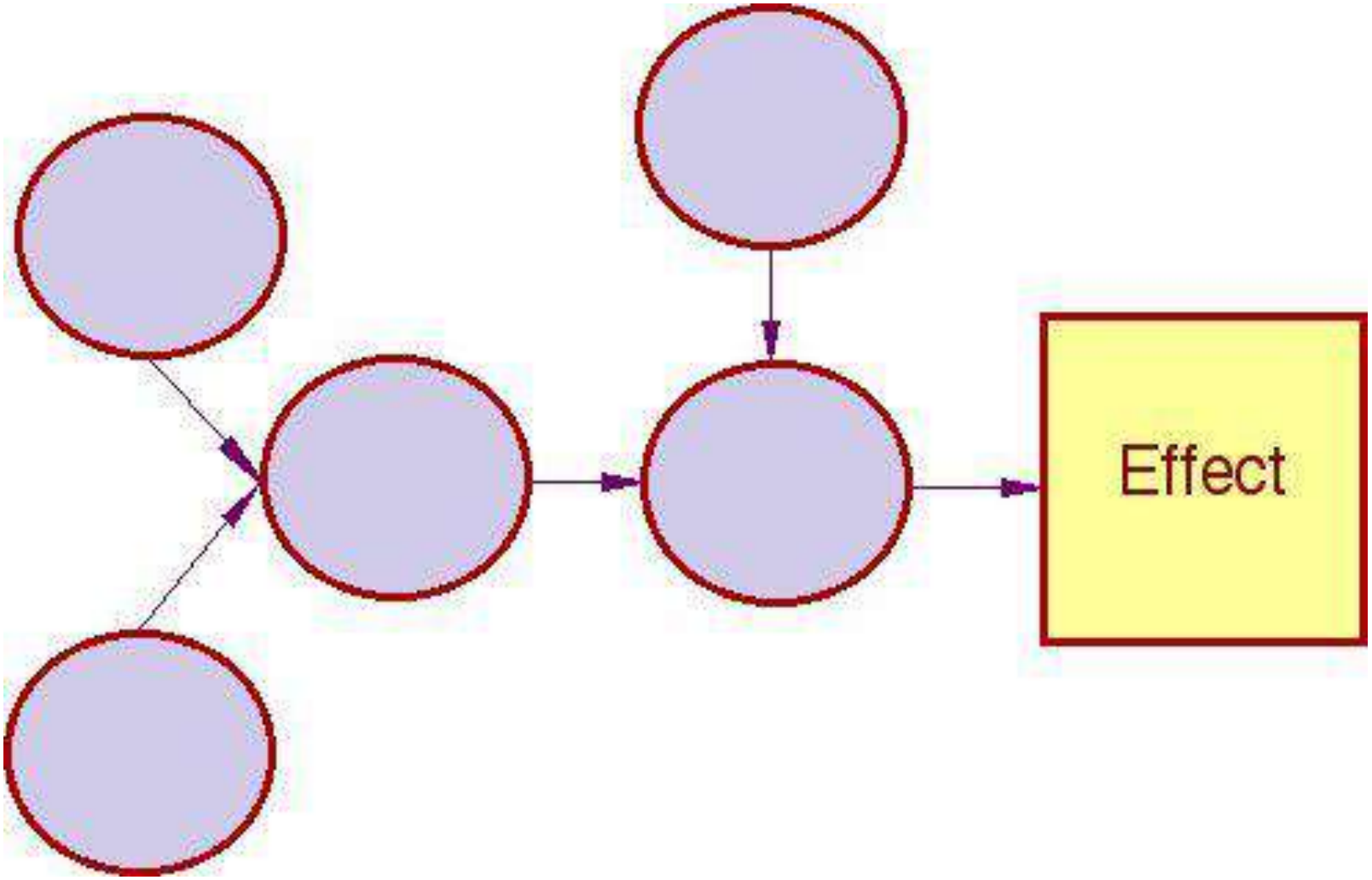
April 1970 Apollo 13
Explosion on board aborts mission

January 1971 Apollo 14
Third mission to land on the moon

December 1972
Third extended scientific exploration of the moon

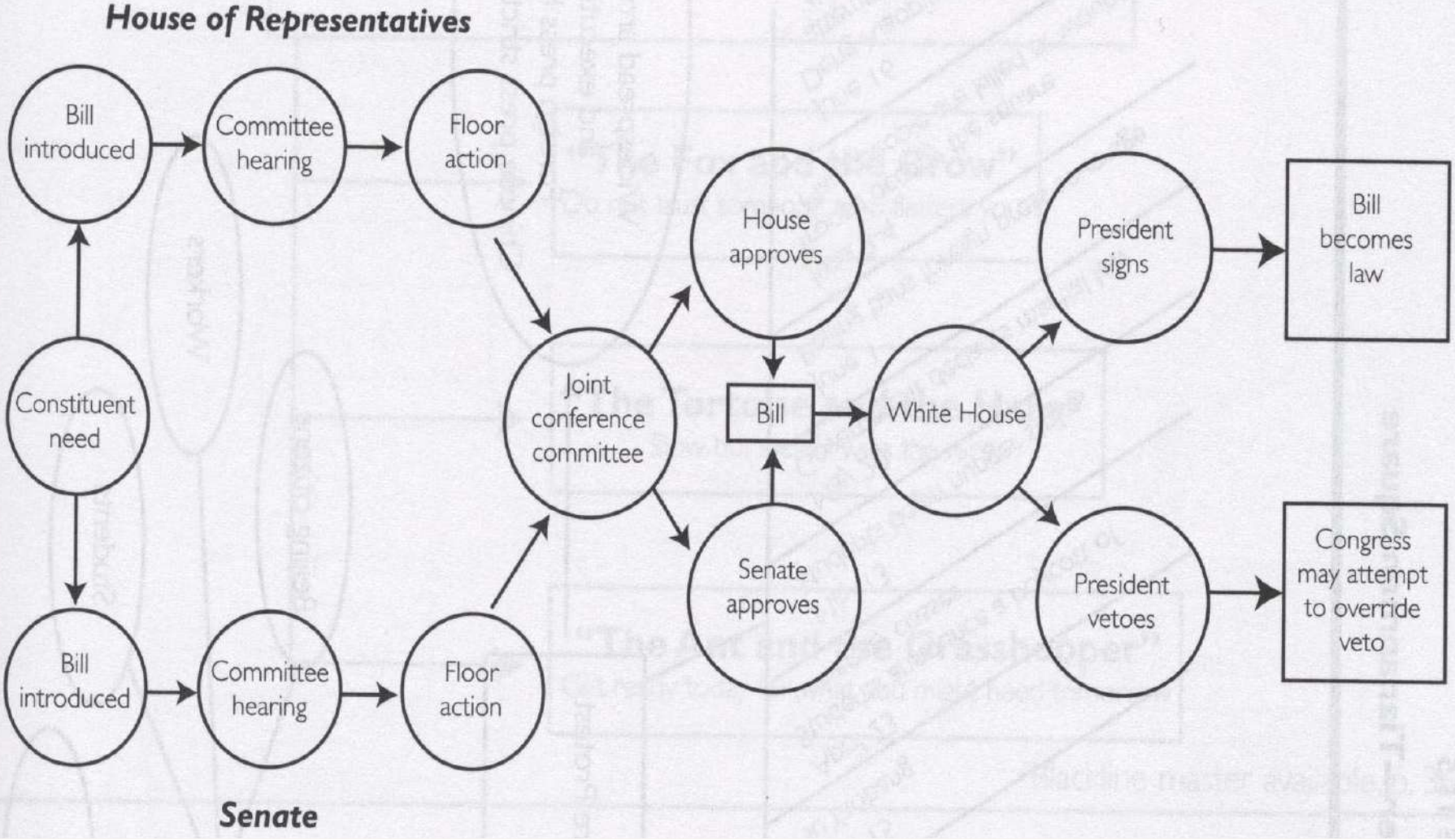
Final mission of formal Apollo program

Process/Cause-Effect Organizer



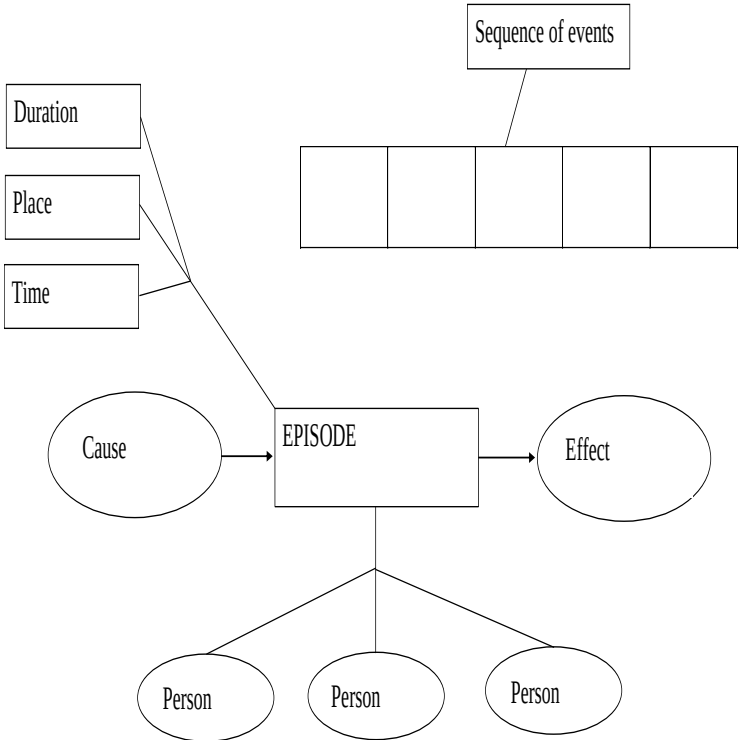
Process/Cause-Effect Pattern Organizer

How a Bill Becomes a Law in the United States



Episode Pattern Organizer

Questions
1. What event is being explained or described? 2. What is the setting where the event occurs? 3. When did these event occur? 4. Who are the major figures or characters that play a part in this? 5. List, in the order they occur, the specific incidents or events. 6. What caused this event? 7. What effect has this event had on the people involved? 8. What effect has this event had on society in general? Use your answers to these questions to form a summary.



Signal Words			
a few days/weeks later	around this time	as it is often called	as a result of
because of	began when	consequently	first
for this reason	lasted for	led to	shortly thereafter
since then	subsequently	this led to	when

Episode Pattern Organizer

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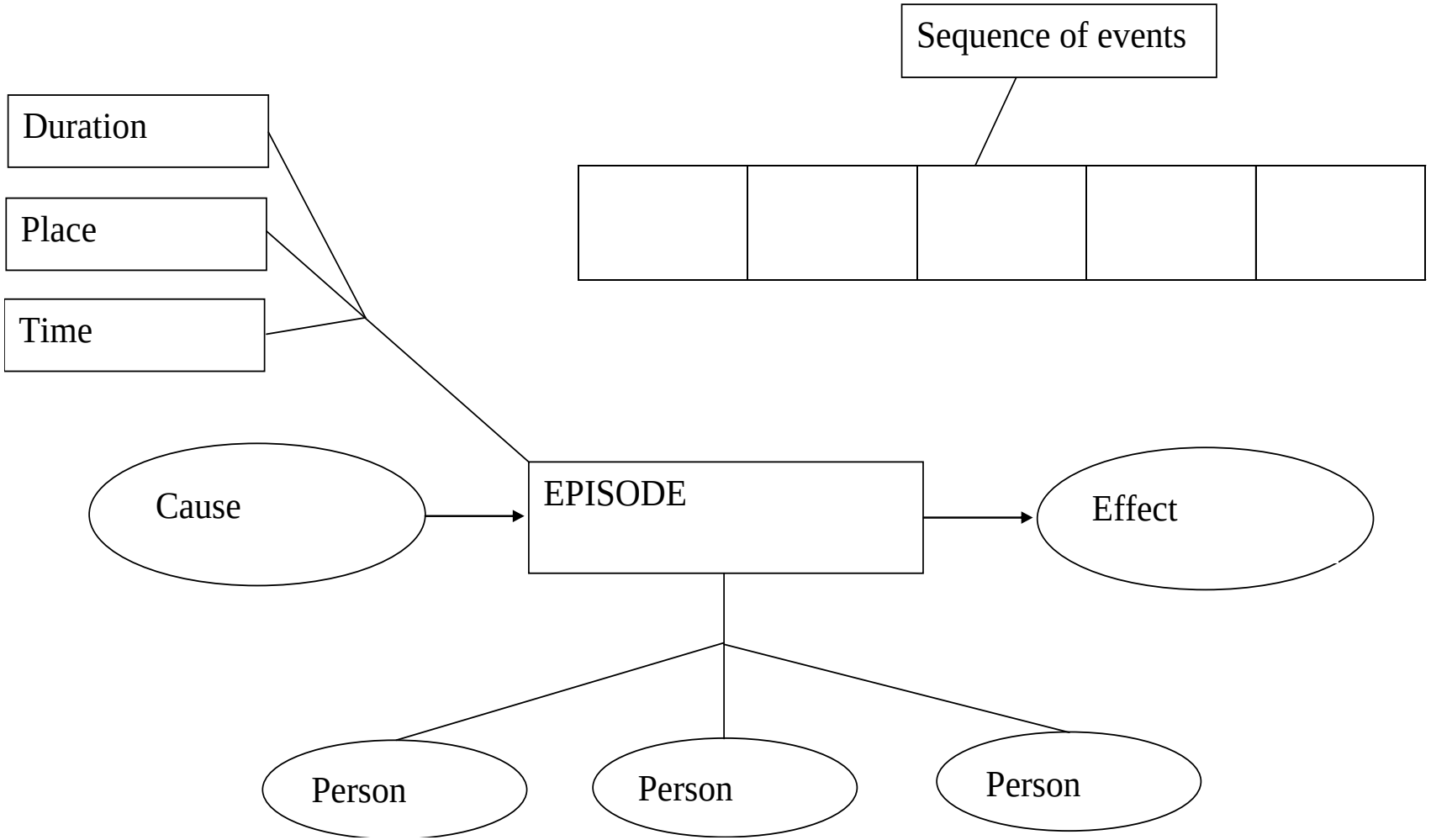
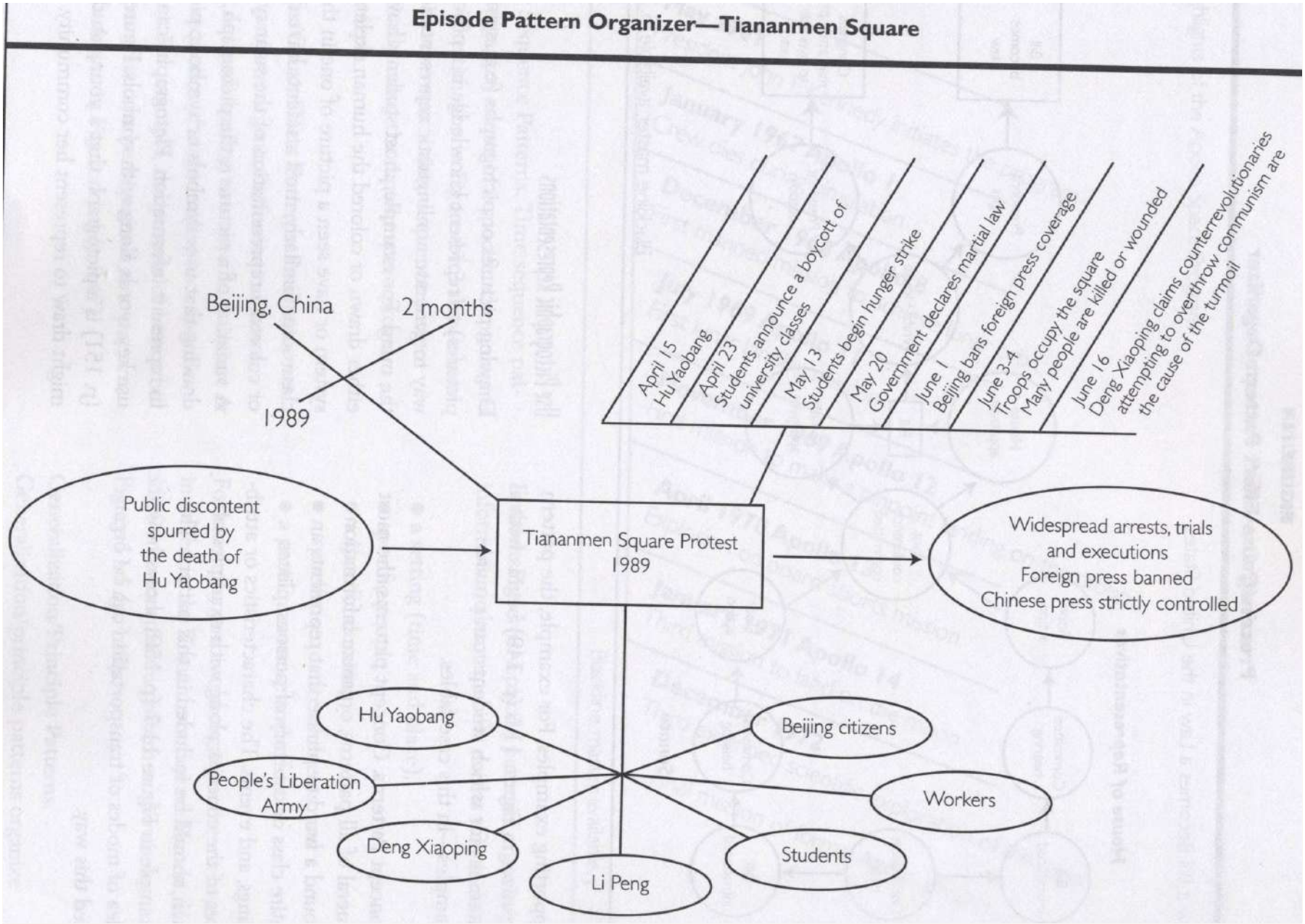
Episode Pattern Organizer



Episode Pattern Organizer—Tiananmen Square

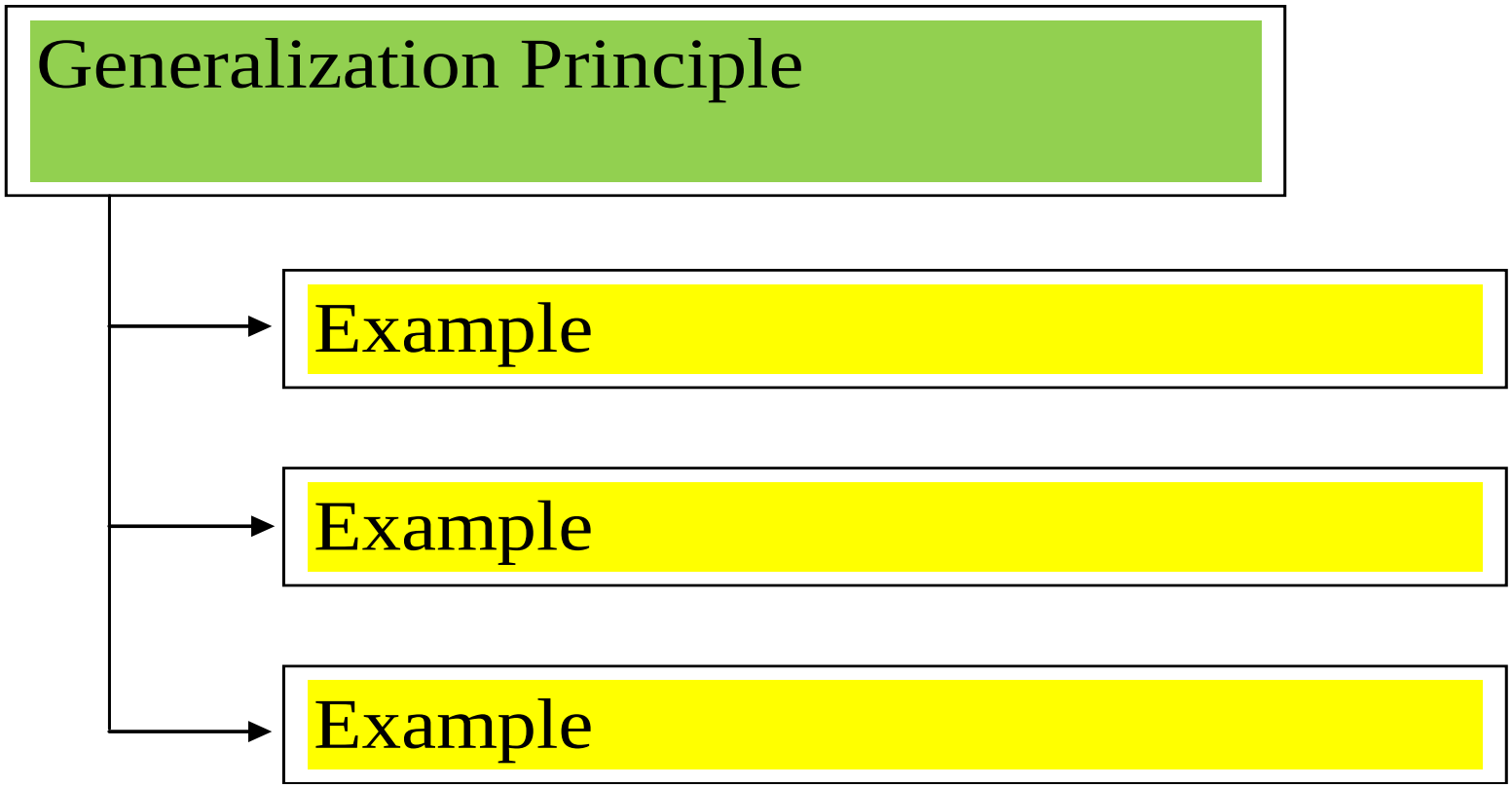


Generalization/Principle Pattern Organizer

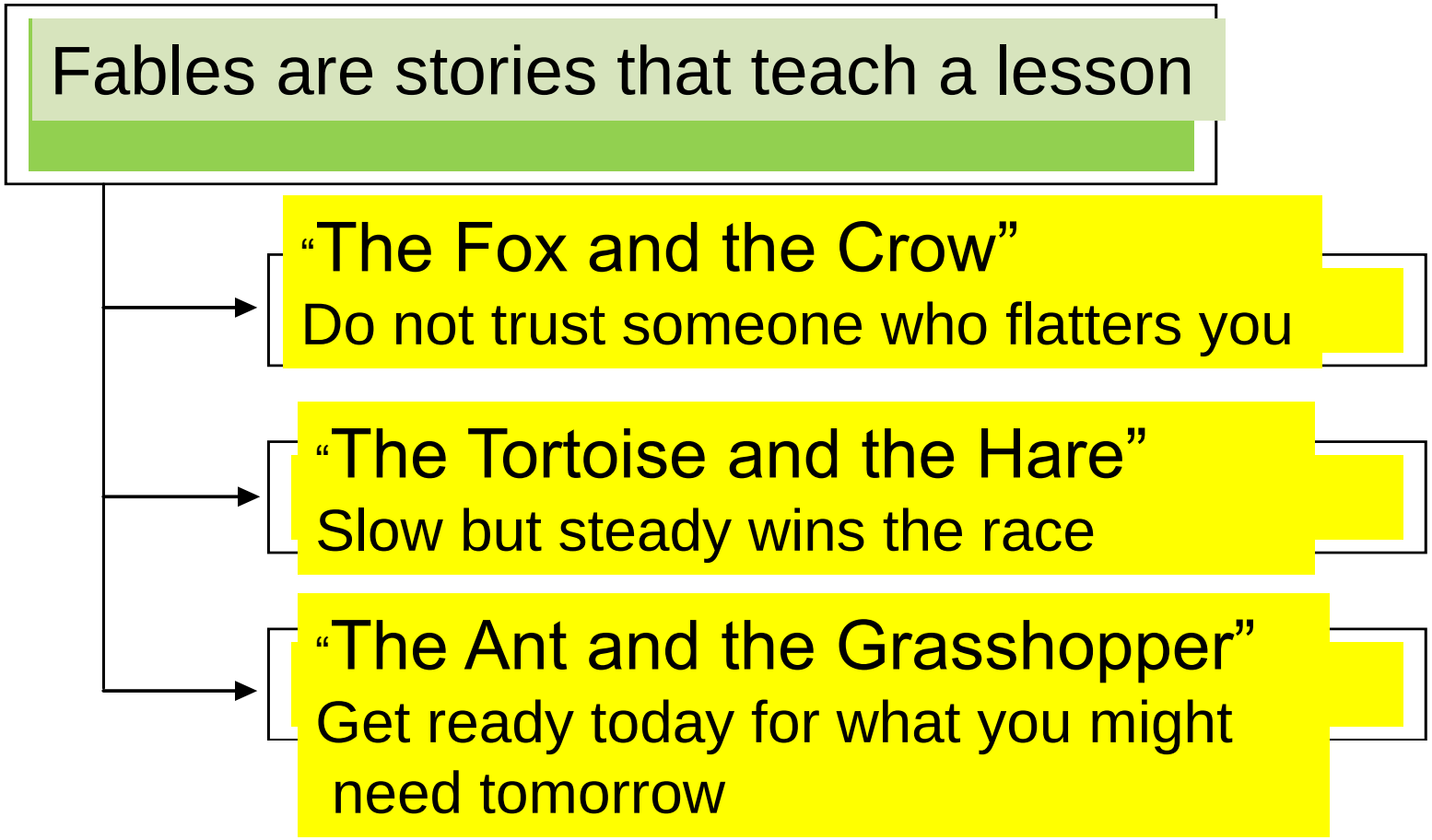
Questions
1. What generalization is the author making or what principle is being explained? 2. What facts, examples, statistics, and expert opinions are given that support the generalization or that explain the principle? 3. Are these details written in a logical order? Why or why not? 4. Are these enough facts, examples, statistics, and expert opinions to clearly support or explain the generalization/principle? Why or why not? Use your answers to these questions to form a summary.

Signal Words			
additionally	although… nevertheless	always	because of
clearly	conclusively	first	for instance
for example	furthermore	generally	however
if… then	In fact	it could be argued that	moreover
most convincing	never	not only… but also	often
second	therefore	third	truly

Generalization/Principle Pattern Organizer

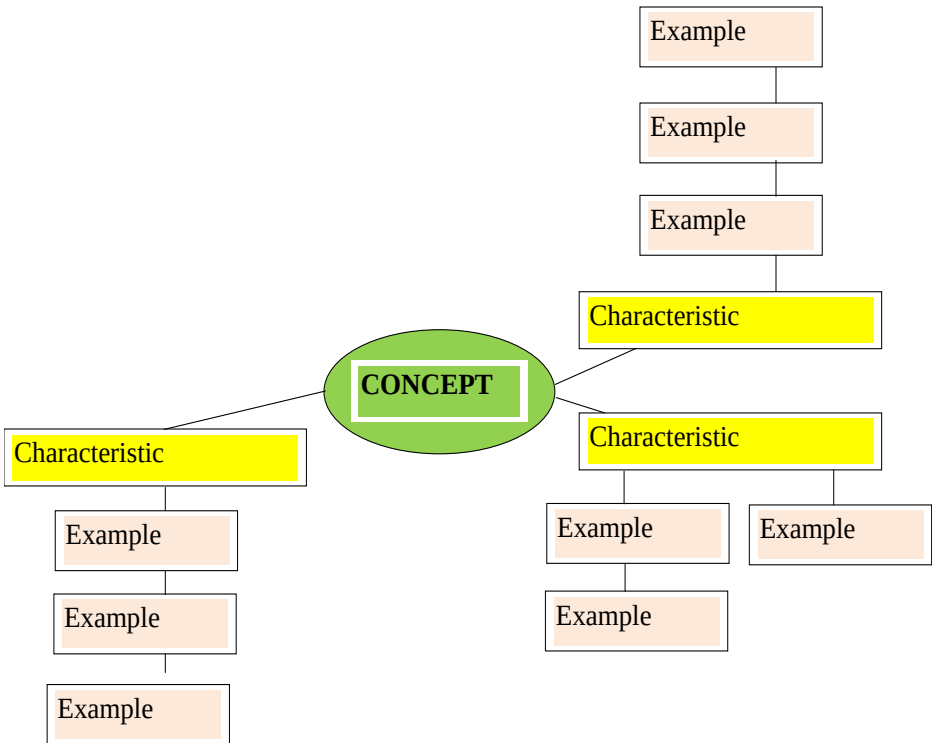


Generalization/Principle Pattern Organizer - Fables



Concept/Definition Pattern Organizer

Questions
1. What concept is being defined? 2. What are its attributes or characteristics? 3. How does it work, or what does it do? 4. What examples are given for each of the attributes or characteristics? Use your answers to these questions to form a summary.



Signal Words				
for instance	generally	in other words	is characterized by	put another way
refers to	that is	thus	typically	usually

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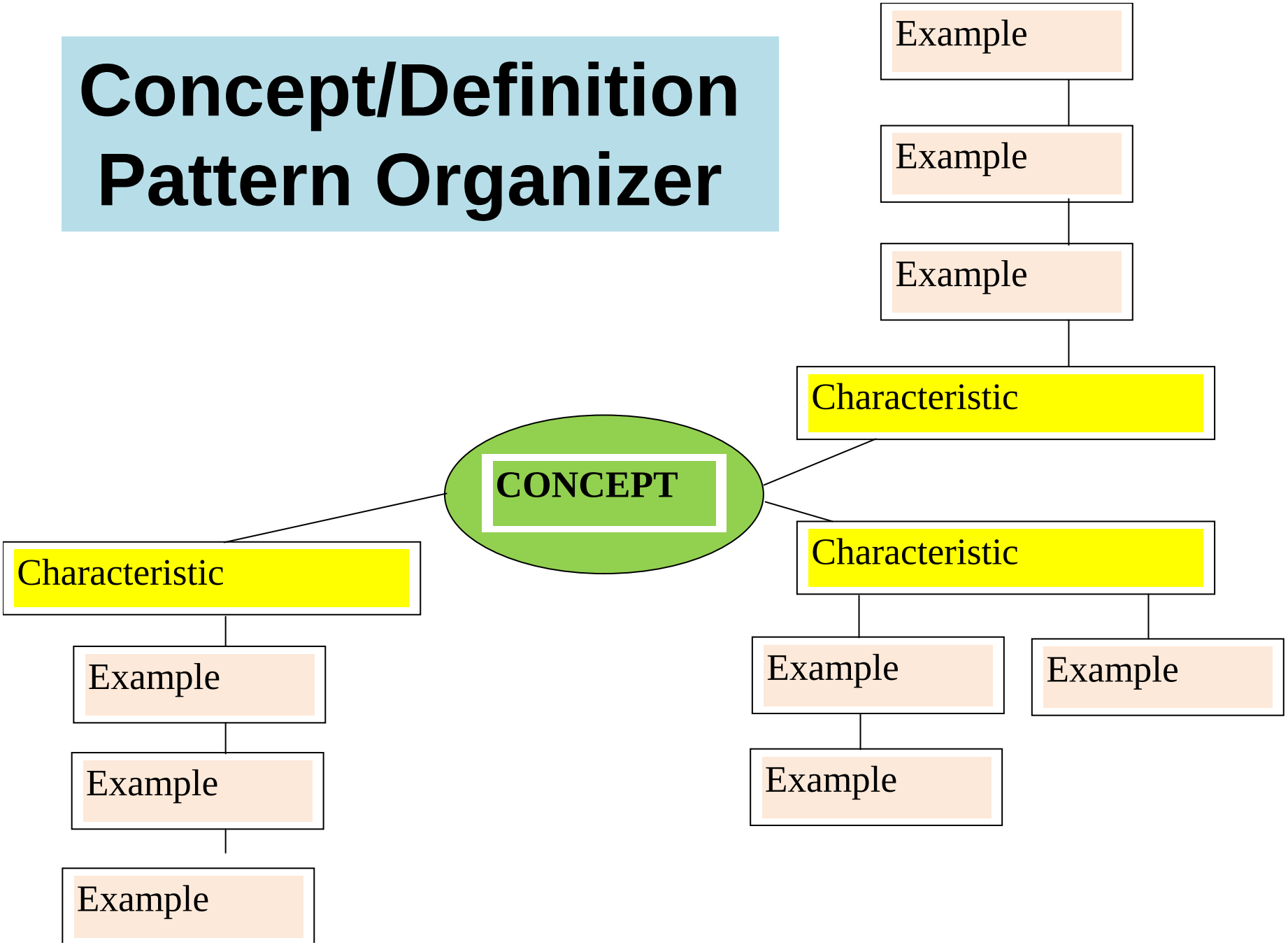

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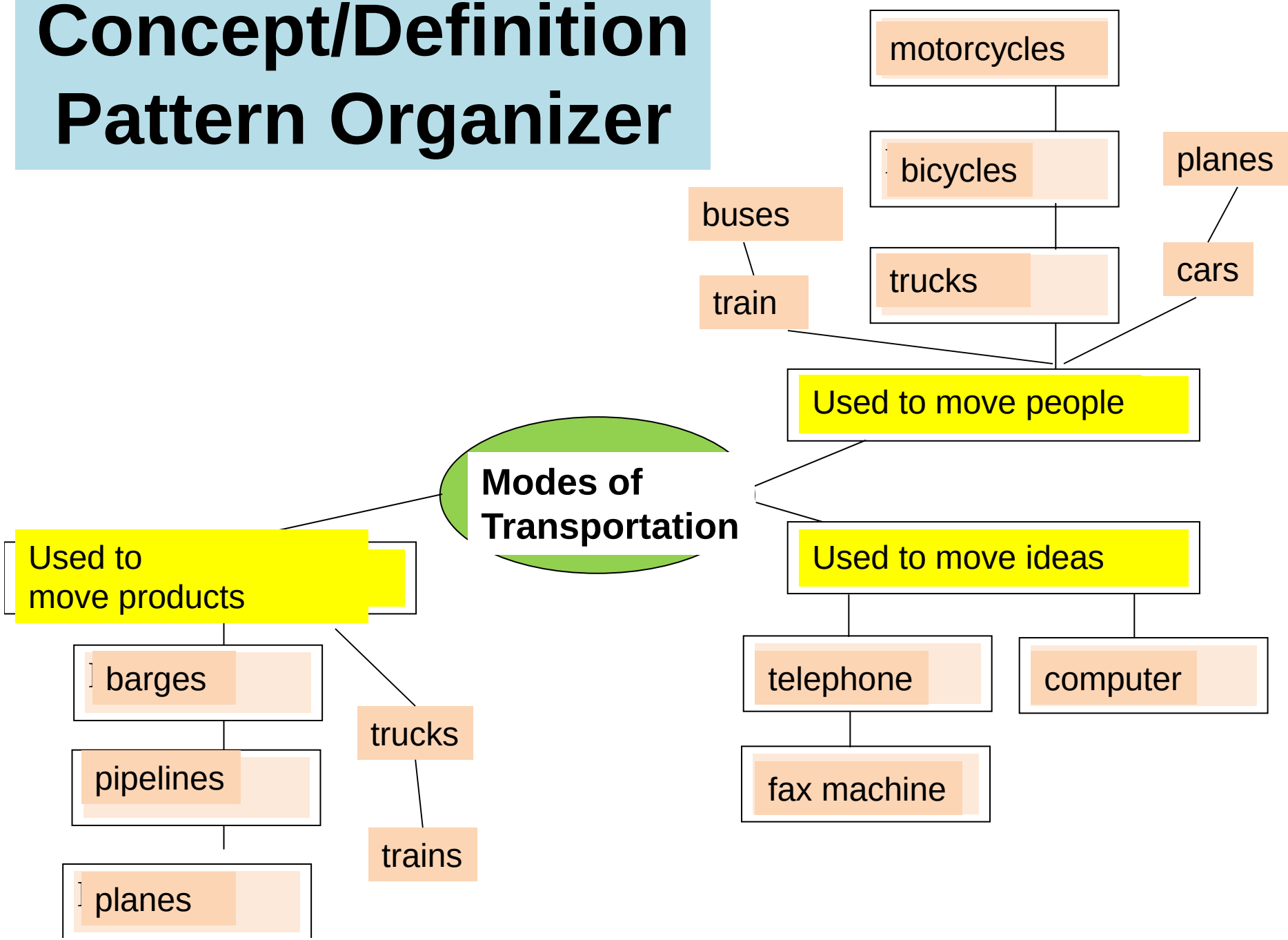
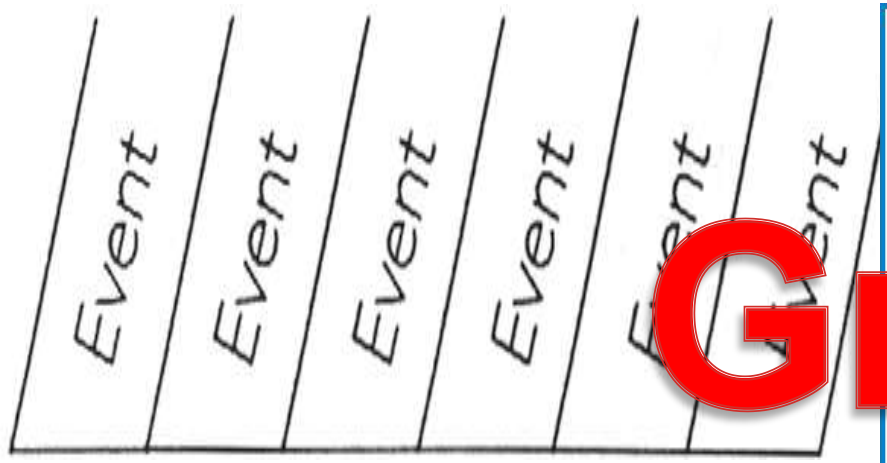
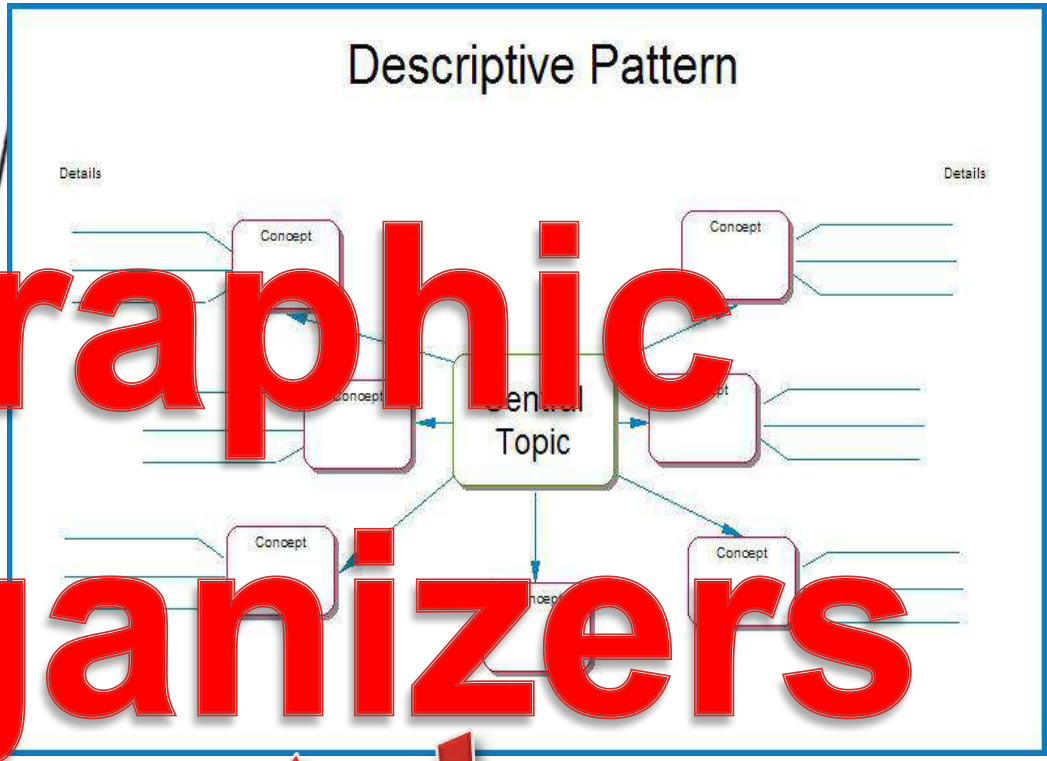
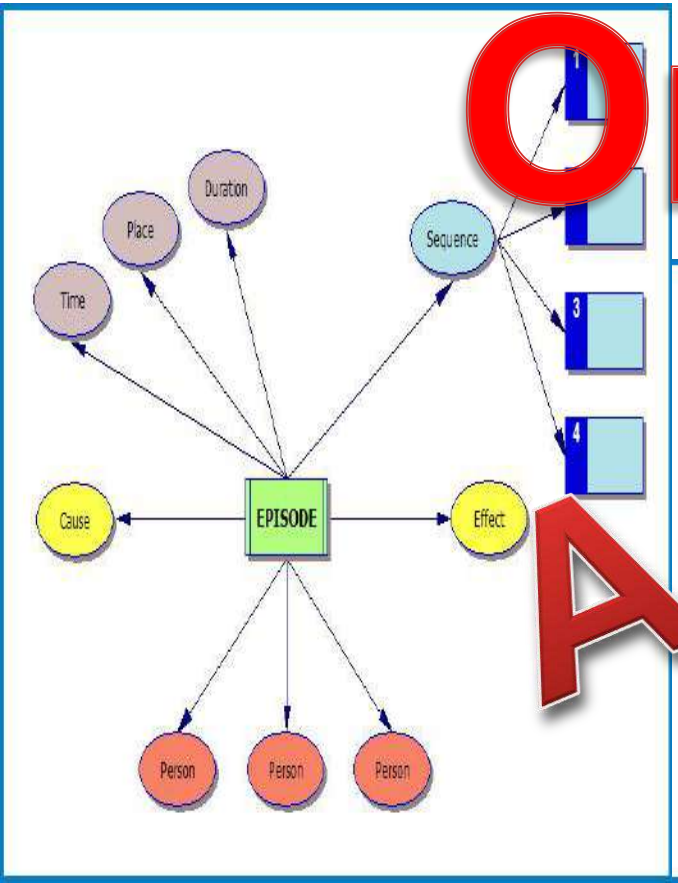
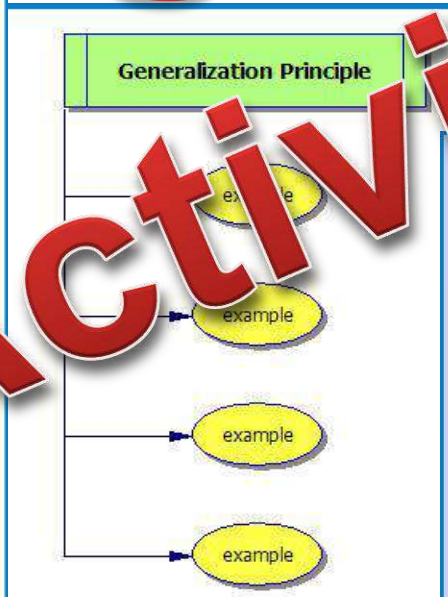


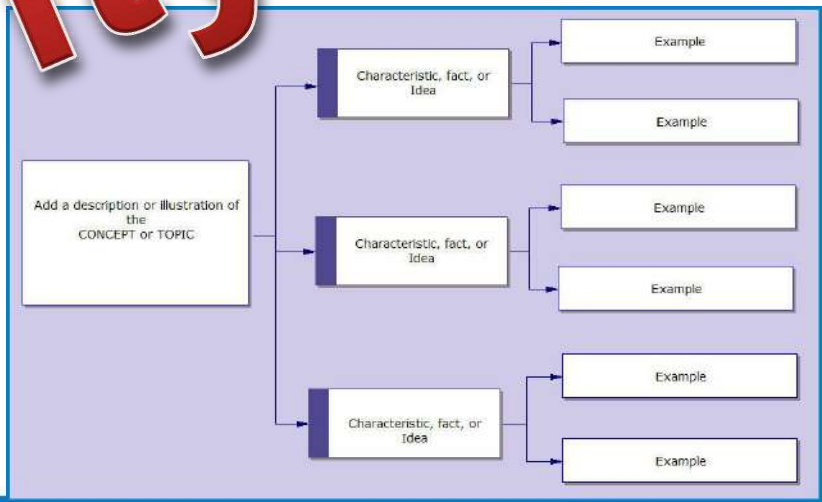




Graphic Organizers Activity







Using Other Nonlinguistic Representations

- Making Physical Models
- Generating Mental Pictures
- Drawing pictures and pictographs
- Engaging in Kinesthetic Activity

Pictographs

absolute monarchy

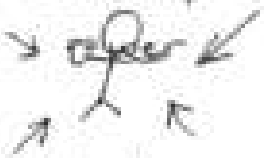
aristocracy

bureaucracy

communism

coup d'etat

dictatorship



nationalism

Plebiscite

sultan

totalitarian state

sage

guile

insolence

clarion

unshorn

shroud

tarry

dissemble

pillage

wanton

Student Pictograph

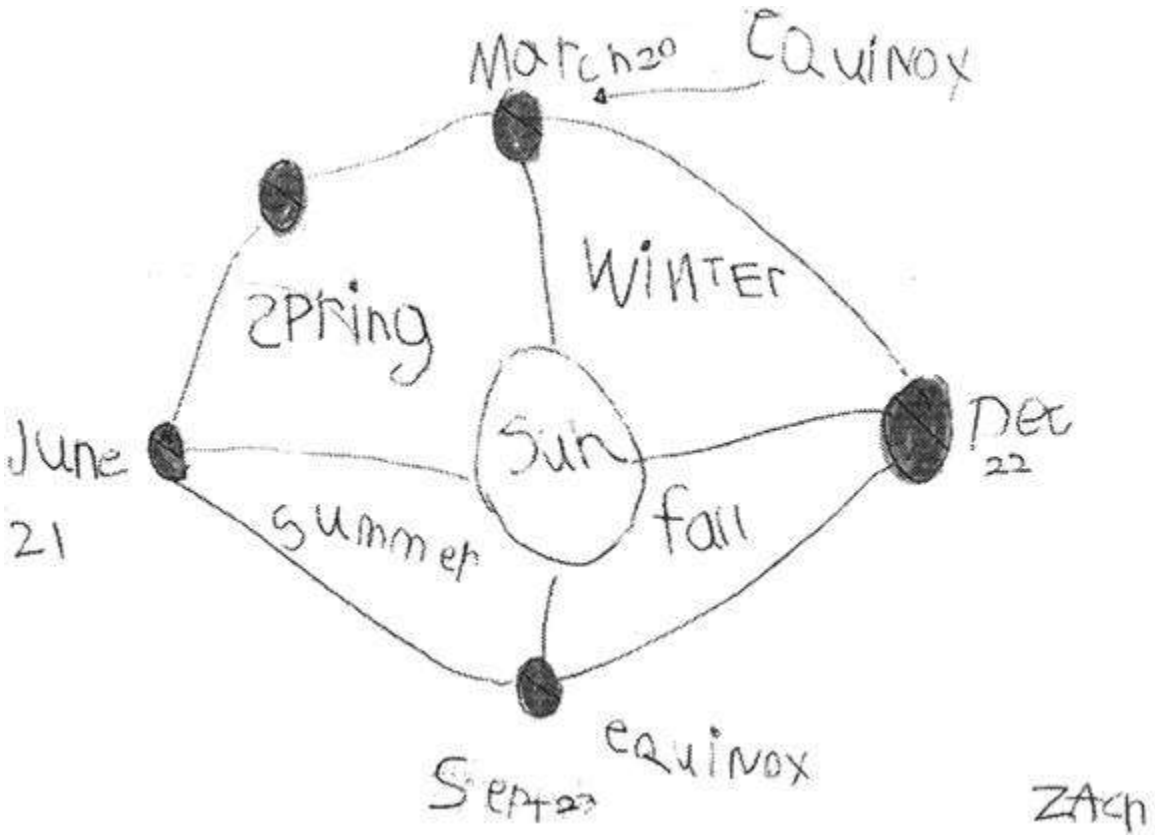
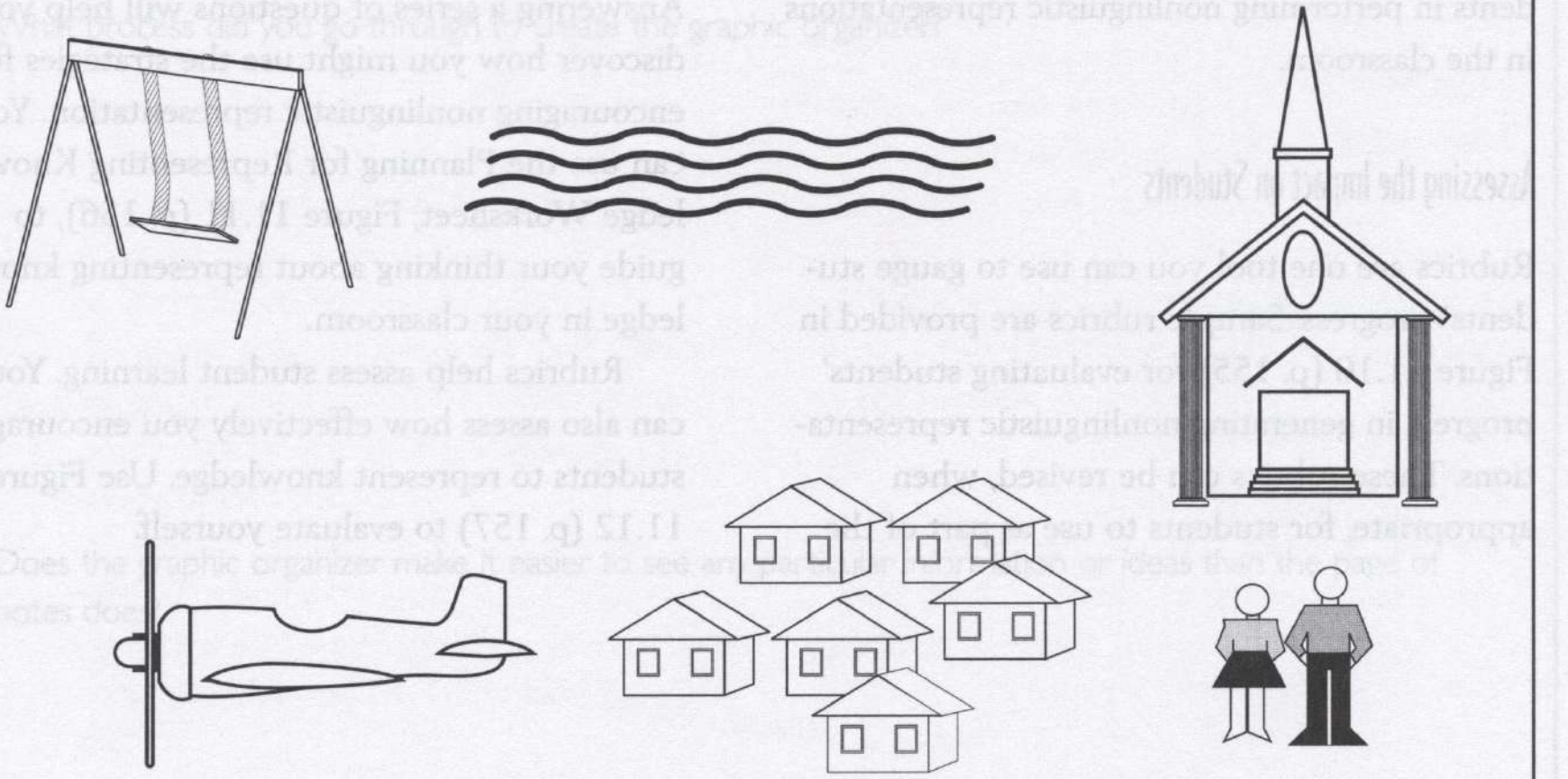


FIGURE 11.8

Pictograph

My Community



Show, Don't Tell

ACTIVITY

Show, Don't Tell

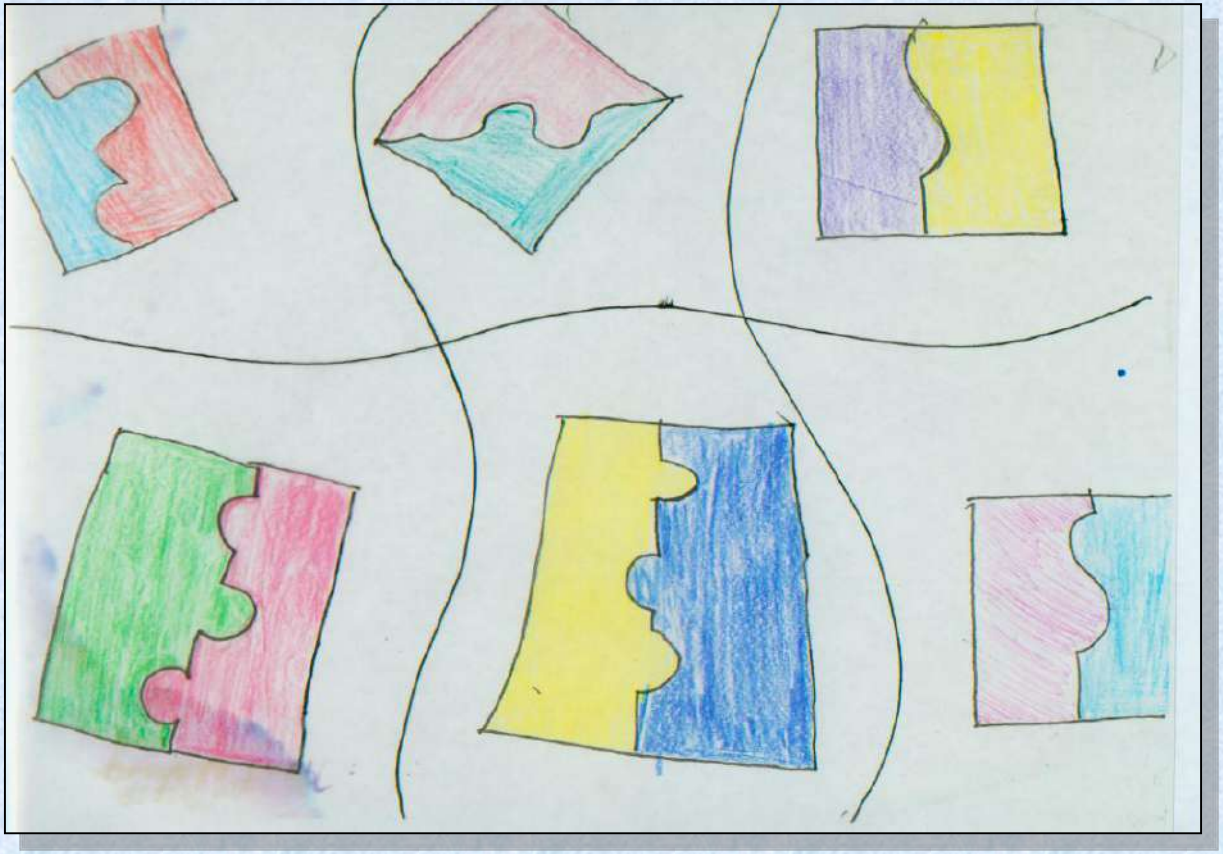
- Get in groups and appoint a group leader.
- Get some markers, blank sheet of paper for the group, and one of the vocabulary words.
- Share the word with your group only!
- Draw a visual of the word and figure out a motion for the word.
- Show your visual and motion for the rest of the participants to guess your vocabulary word.
- Then the rest of the class does the motion.

Show, Don’t Tell

Astound:	To fill with wonder
Confine:	To keep within limits
Elusive:	Hard to describe or understand
Extinguish:	To put out, do away with
Longevity:	A long duration
Persistent:	Refusing to give up
Remote:	Far off in place or time
Spectacular:	Impressive
Taunt:	To insult or ridicule
Vital:	Having to do or necessary

Show, Don’t Tell

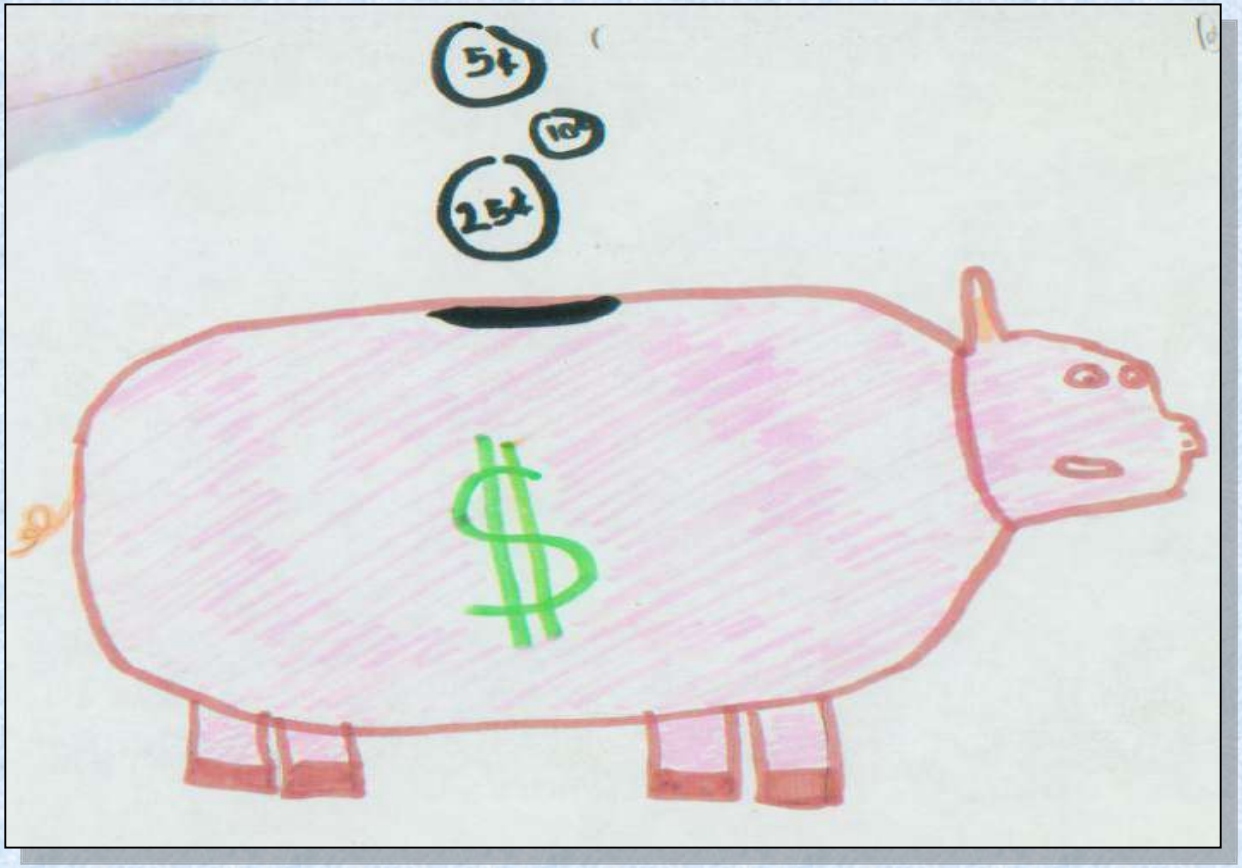
collaborate



to work jointly together

Show, Don’t Tell

frugal



reflecting economy

Show, Don’t Tell

divergent

going away from the accepted norm

Pictograph Activity

- In your groups, work quietly to select an event that is currently in the news and represent it using a pictograph.
- Remember that the goal is to form a mental image of the event so you can recall information about it in the future. You will have about five minutes to work on your pictograph.
- Groups will share their product and other groups will guess what event the pictograph represents.

Kinesthetic Activity

Use your arms to demonstrate the following:

- The radius of a circle
- The diameter of a circle
- The circumference of a circle
- An acute angle
- An obtuse angle
- A right angle

ACTIVITY

Implications for the Classroom

- Think: What is one example of a nonlinguistic representation strategy that you have used successfully in your classroom?
- Pair: Talk with the person sitting next to you, and share the strategy that you have had success with.
- Share: Volunteers to share with the entire group.

Nonlinguistic Representation Rubric

4	The student's representation indicates a detailed understanding of the information important to the topic.
3	The student's representation indicates a complete understanding of the information important to the topic.
2	The student's representation indicates an incomplete understanding of the topic or misconceptions about some of the information. However, the student shows basic understanding of the topic.
1	The student's representation indicates an understanding of the topic that is so incomplete or has so many misconceptions that the student cannot be said to understand the topic.
0	Not enough information to make a judgment.

Nonlinguistic Representation Rubric

4	The student's picture shows that she/he understands all of the important information. The picture include some details.
3	The student's picture shows that she/he understands all of the important information.
2	The student's picture shows that she/he does not really understand the topic. The picture shows some mistakes about the topic.
1	The student's picture shows that she/he does not understand the topic. The picture shows many mistakes about the topic.
0	The student does not try to make a picture.

Planning for Representing Knowledge Worksheet

What knowledge will student be learning?

Will I provide a representation for them or ask them to create their own?

What representing knowledge strategy will I ask students to use?

- graphic organizers
- pictographic representations
- mental images
- physical models, and
- kinesthetic representations
- Other

Do I need to set time aside to teach students the strategy I want them to use?

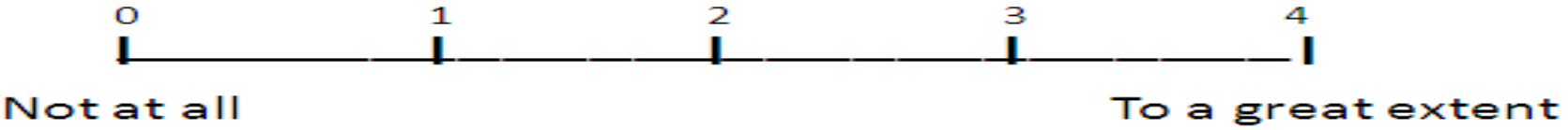
How will I teach them the strategy?

How will I monitor how well students are doing with the creation and use of nonlinguistic representations?

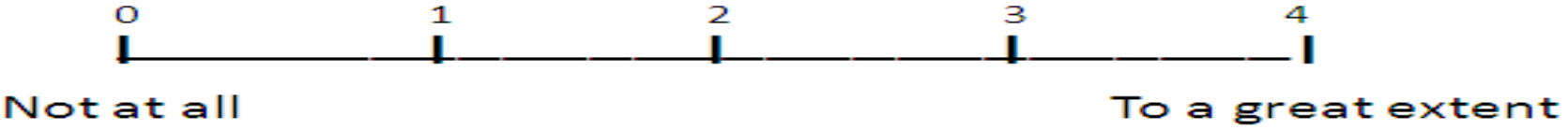
What will I do to help students who are not using nonlinguistic representations effectively?

Assessing Myself-Nonlinguistic Representation

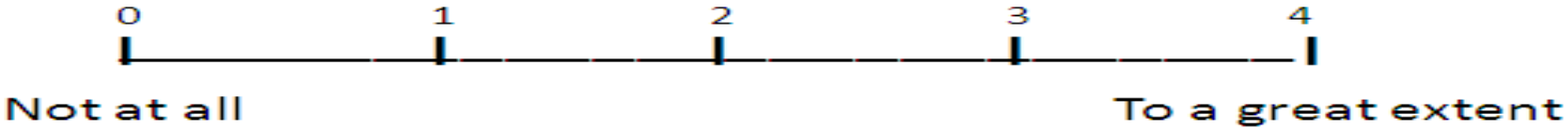
I clearly communicate the knowledge students will use to generate representations.



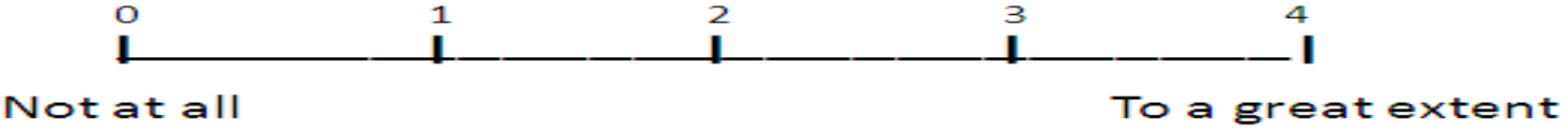
I clearly communicate the strategy that students will use to generate representations.



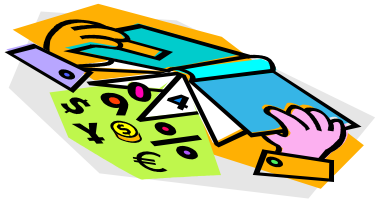
I make sure students know how to use the strategy that I want them to use to represent knowledge.



Over time, I collect evidence about my student's proficiency at using a variety of methods to represent knowledge



- **Nonlinguistic Representations**
  - Creating Graphic Representations
  - Making Physical Models
  - Generating Mental Pictures
  - Drawing pictures and pictographs
  - Engaging in Kinesthetic Activity



EXIT

- The purpose of this workshop was to _____

_____

According to research, _____

_____

One important detail is that _____

_____

Another important detail is that_____

_____

_____ can also be done by_____

_____

In conclusion, _____

_____