Effective Teaching Strategies
Identifying Similarities and Differences

Waterbury Public Schools
New Teacher Orientation 2013

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

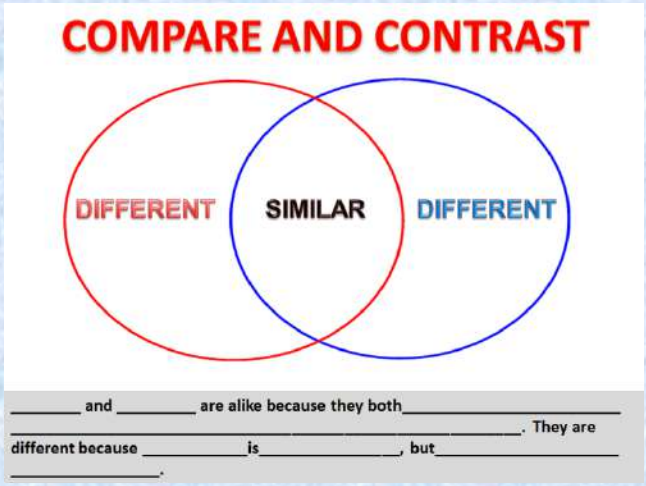
- Understand how identifying similarities and differences enhances students' understanding and ability to use knowledge

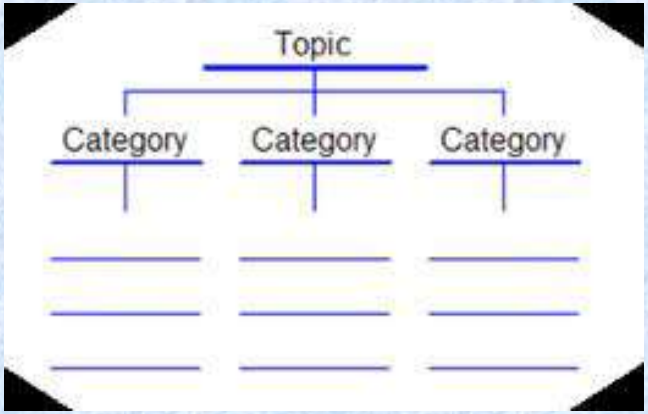
- Know how to apply this instructional strategy in your classroom.

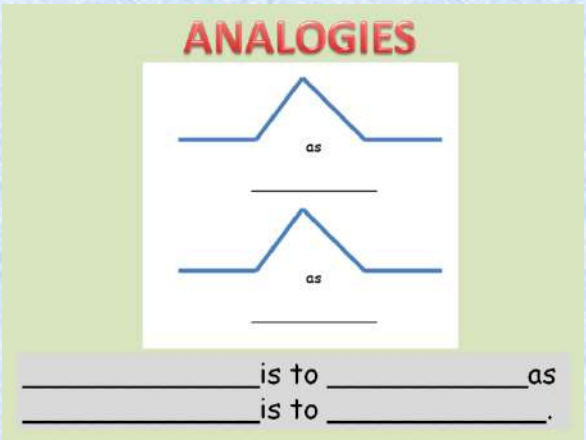
Effective Teaching Strategies

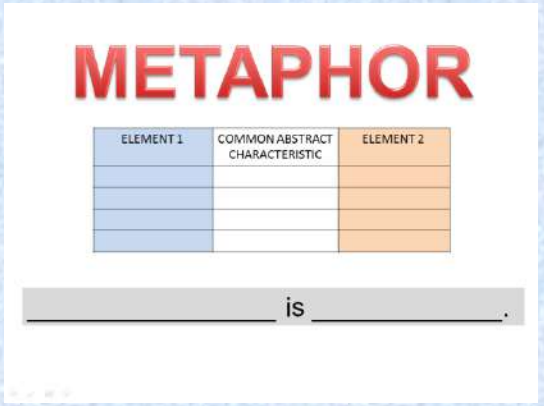
Agenda

Identifying Similarities & Differences

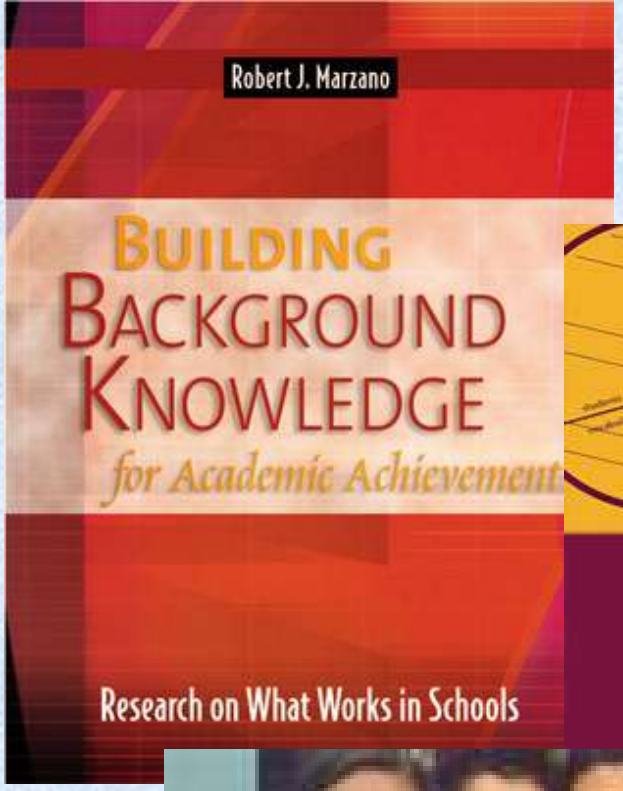


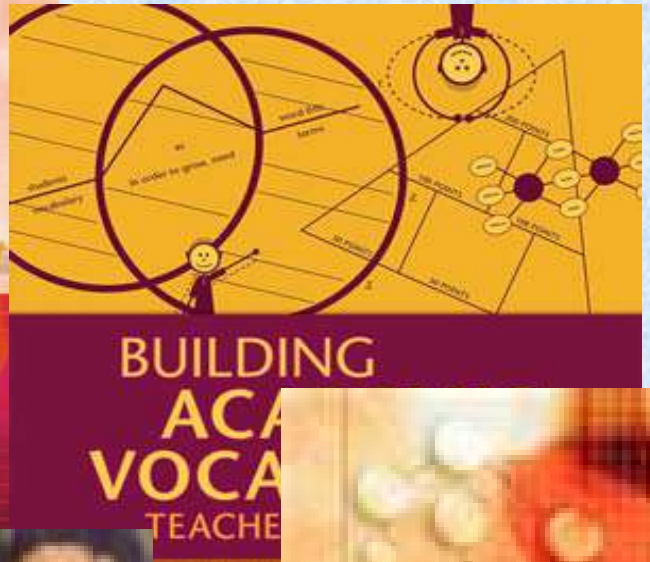


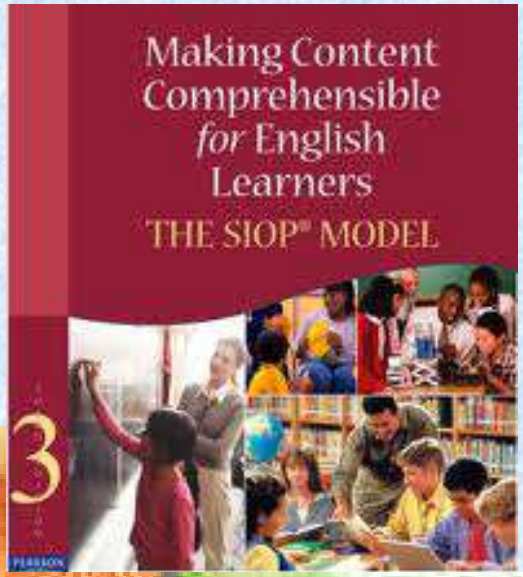


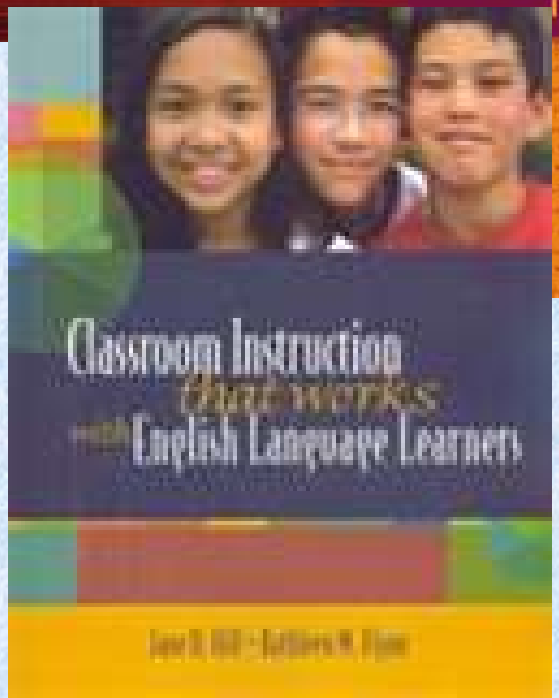


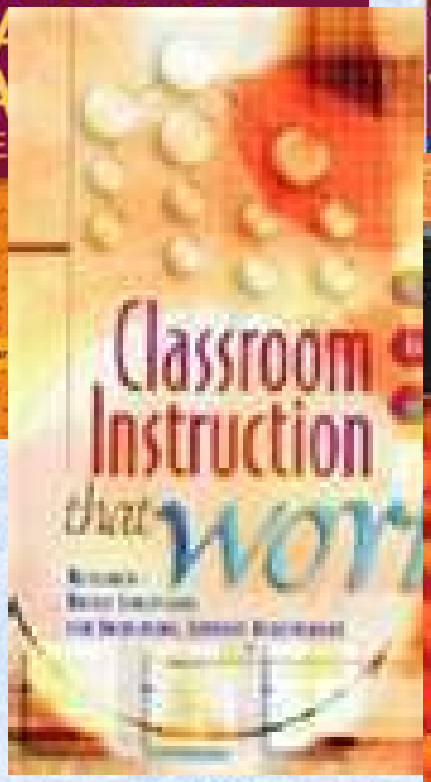
According to research …

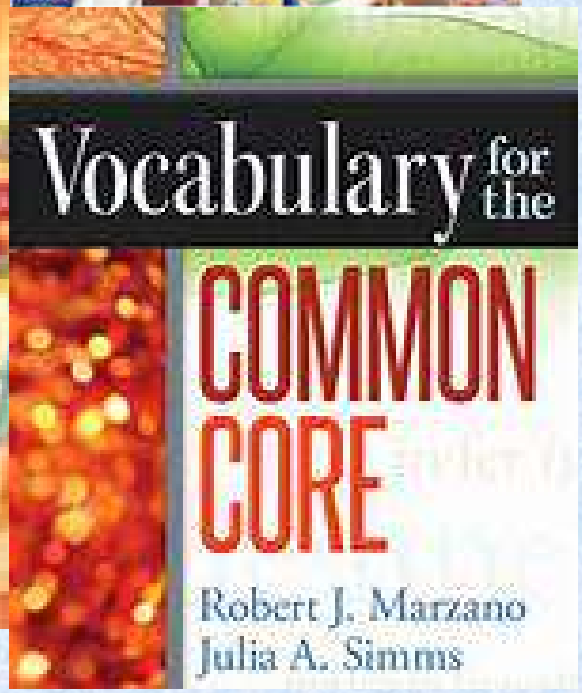












Meta-analysis

- 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

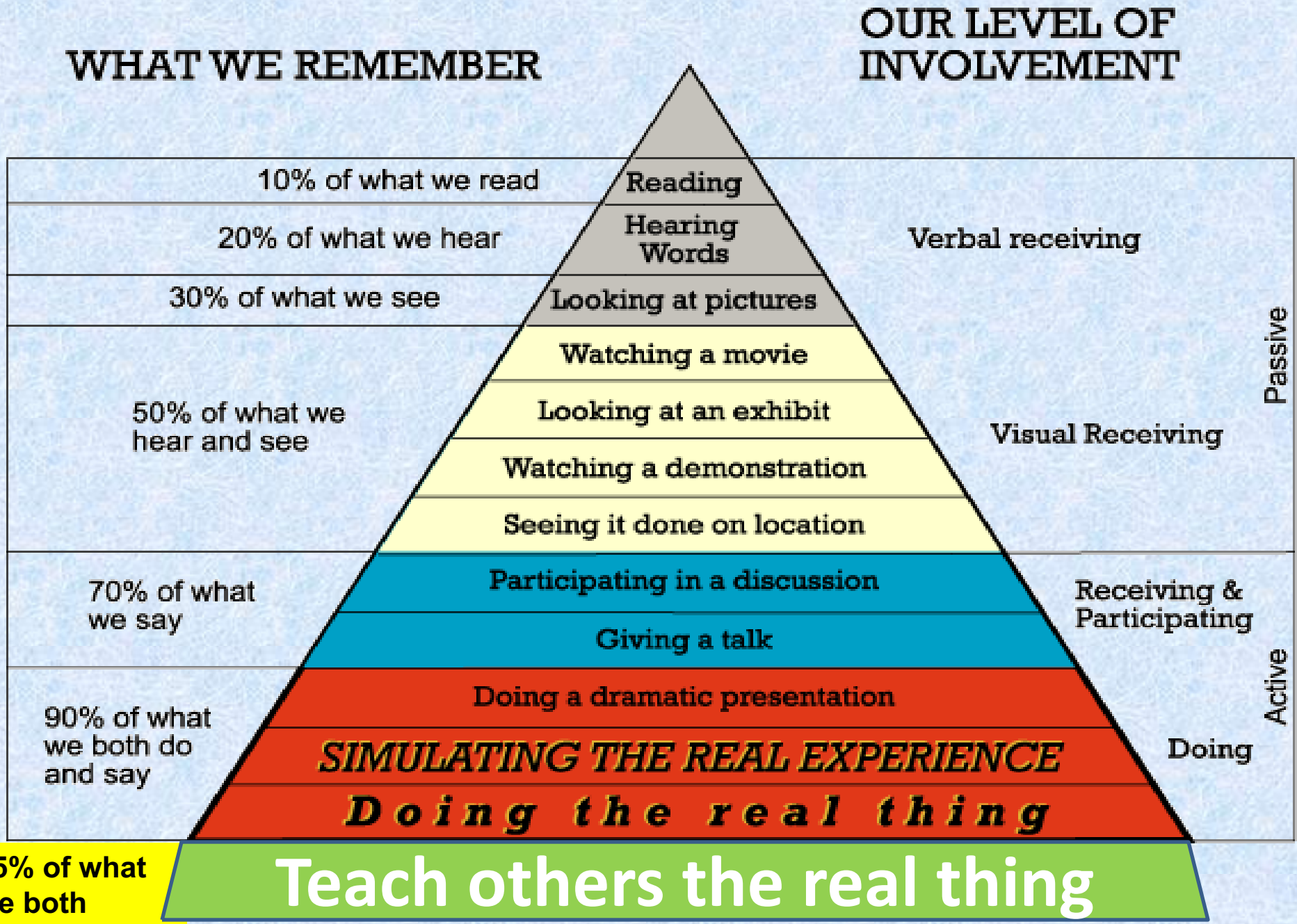
What Does Effect Size Represent?

- 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
Looking at an exhibit
50% of what we hear and see
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
Doing a dramatic presentation
90% of what we both do and say
SIMULATING THE REAL EXPERIENCE
Doing
Doing the real thing
Active
95% of what we both teach and say
Teach others the real thing

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

Category	Definition
Similarities & Differences	Strategies that enhance students' understanding and ability to use knowledge by having them identify similarities and differences among items.
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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.

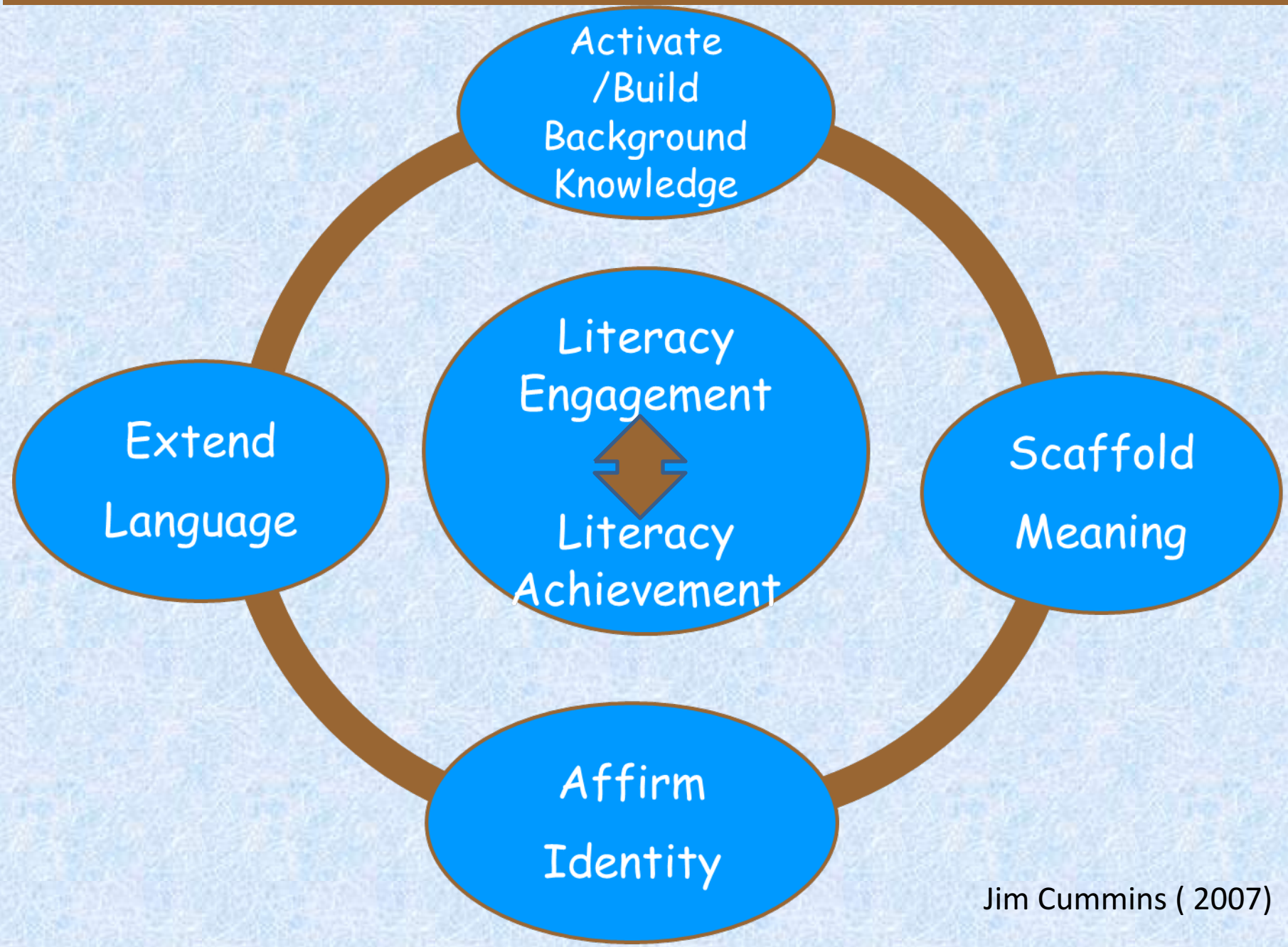
2) Model

I do, you watch.

1) Explain

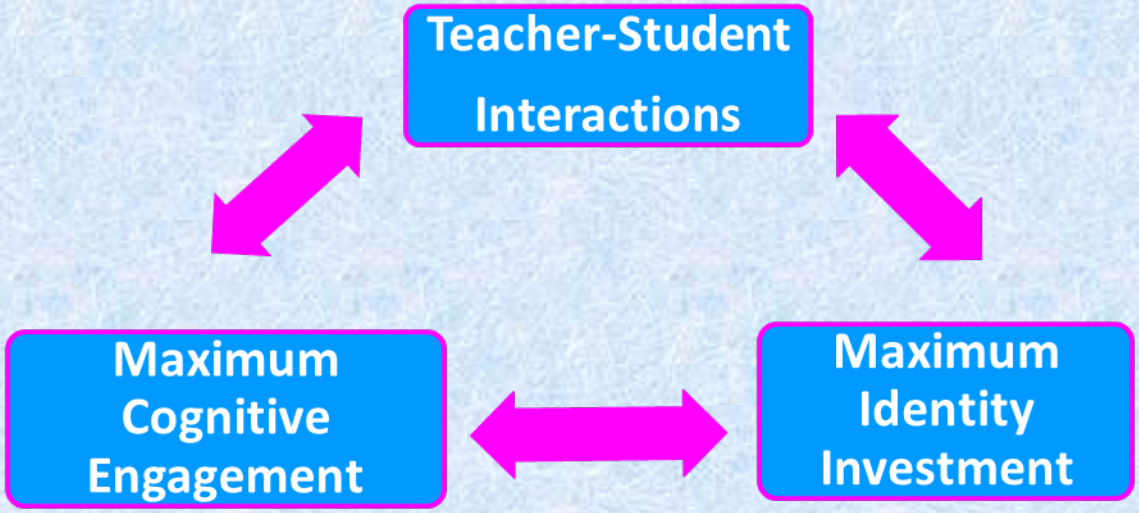
I talk, you listen.

Conditions for Promoting Literacy Engagement



Jim Cummins (2007)

The Development of Academic Expertise



Focus on Meaning	Focus on Language	Focus on Use
• Making Input comprehensible • Developing critical literacy	• Awareness of language forms and uses • Critical analysis of language forms	• Using language to: Generate new knowledge , create literature and art, and act on social realities

The Process

A Six-Step Process for Teaching New Terms

Step 1: Provide a description, explanation, or example of the new term.

Step 2: Ask students to restate the description, explanation, or example in their own words.

Step 3: Ask students to construct a picture, symbol, or graphic representing the term or phrase.

STEP 4

Identifying similarities and differences might be the "core" of all learning.

It enhances students' understanding of and ability to use knowledge.

-Marzano, 2001

Similarities and Differences

Similarities and Differences

- Enhance students' understanding of and ability to use knowledge by engaging them in mental process that involve identifying ways items are alike and different.

Generalizations from the Research

Students should

.Receive explicit guidance in identifying similarities and differences.

.Independently identify similarities and differences.

.Represent similarities and differences in graphic and symbolic form.

.Identify similarities and difference in a variety of ways.

Recommendations for Classroom Practice

- Have students use comparing, classifying, metaphors, analogies when identifying and articulating similarities and differences.
- Give students a model of the steps for engaging in the process.
- Use a familiar context to teach students these steps.
- Have students use graphic organizers to visually represent the similarities and differences.
- Guide students as they engage in each process but gradually release support.

4 highly effective “forms” to identify similarities and differences

- Comparing
- Classifying
- Creating analogies
- Creating metaphors

4 highly effective “forms” to identify similarities and differences

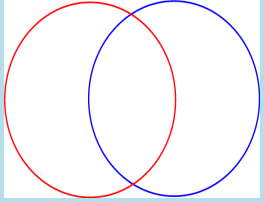
Comparing

- Classifying
- Creating analogies
- Creating metaphors

Reflecting on My Current Beliefs and Practices- Comparing

- What is the purpose of asking students to compare?
- What kind of activities do I use to help students compare?
- I can think of a time that I asked students to compare, and I was pleased with the results. Why did it go well?
- I can think of a time that I asked students to compare, and I was not pleased with the results. Why did it not go well?
- What questions do I have about using comparing in my classroom?

Comparing



For example,

Compare the use of literary elements within and among texts including characters, setting, plot, theme, and point of view.

- The identification of important characteristics is the key to effective comparison.
- It is these characteristics that are then used as the basis to identify similarities and differences.

-Marzano,2001

Steps for Comparing

To

1. Select the *items* you want to compare.
2. Select the characteristics of the items on which you want to base your comparison.
3. Explain how the items are similar and different with respect to the characteristics you selected.

Attribute Chart

Color

Red

Green

Blue

Yellow

Size

Small

Medium

Large

Shape

Circle

Rectangle

Square

Diamond

Function

Eating

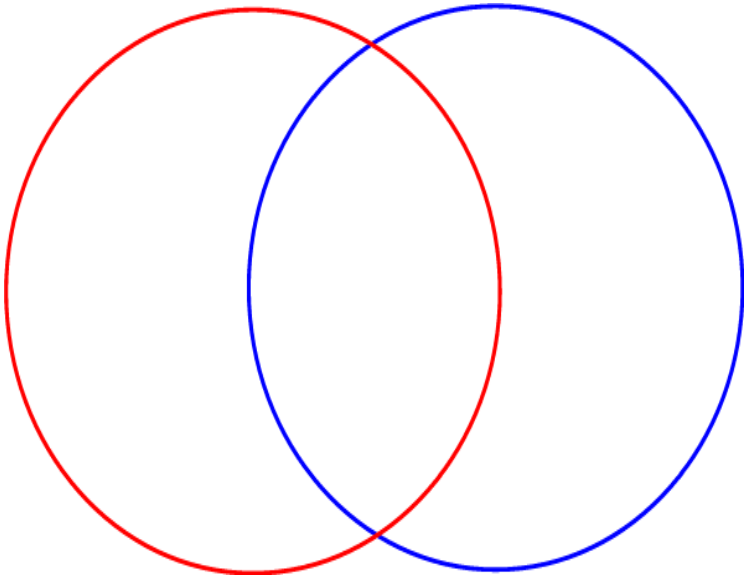
Sitting

Riding

Drinking

Graphic Organizers for Comparing

VENN DIAGRAM



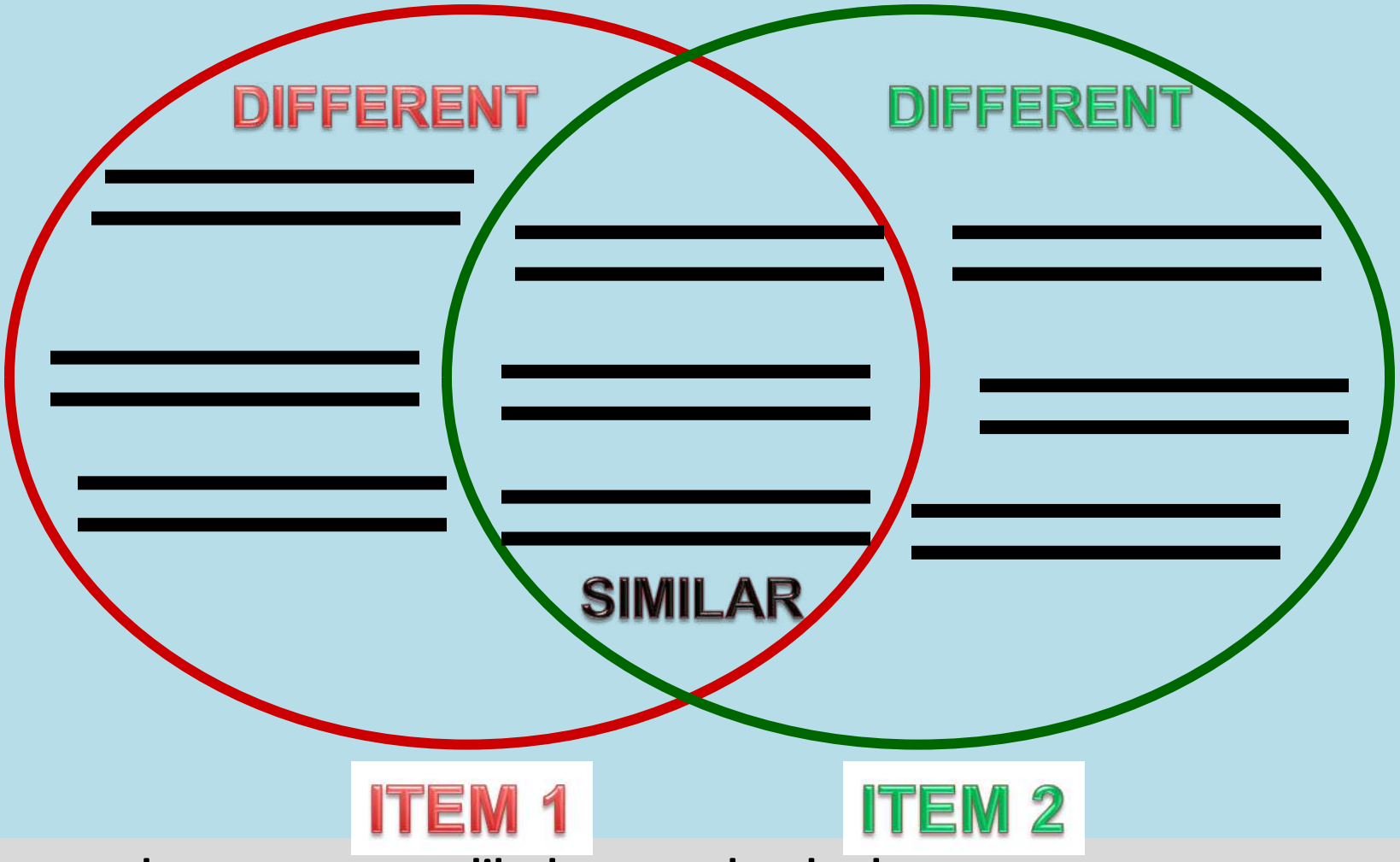
COMPARISON MATRIX

	Item 1	Item 2	Item 3	
Characteristic 1				Similarities and Differences
Characteristic 2				Similarities and Differences
Characteristic 3				Similarities and Differences
CONCLUSION:				

-most useful when comparing only two items

-more useful to provide a greater number of details

COMPARE AND CONTRAST



_____ and _____ are alike because they both_____
_____. They are different because _____is_____, but_____
_____.

A and B are similar because they both

_____

_____

_____

A and B are different because

A is _____, but B is _____.

A is _____, but B is _____.

A is _____, but B is _____.

A monarchy and a **dictatorship** are similar because they both _____.

_____. _____.

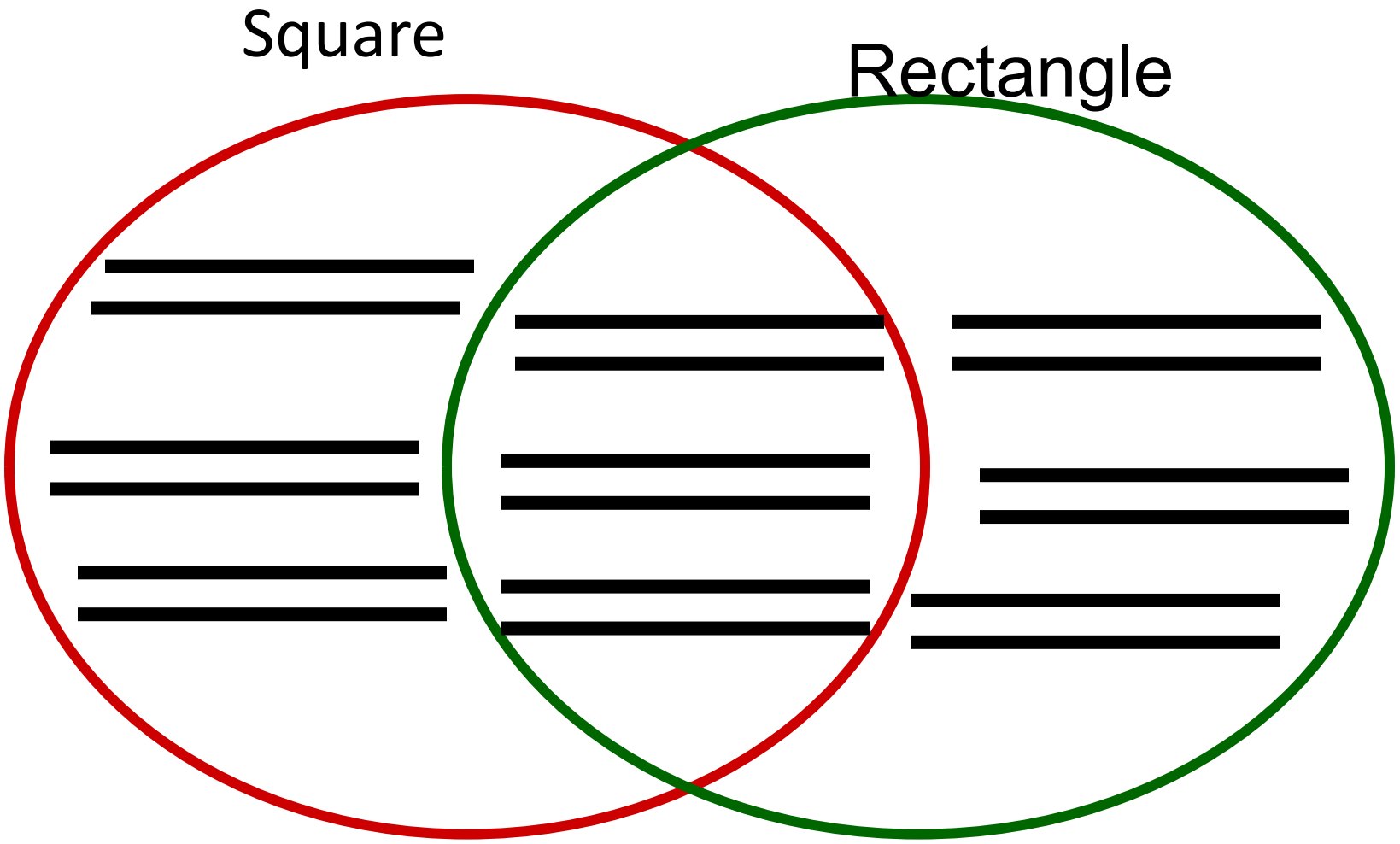
A monarchy and **a dictatorship** are different because

a **monarchy** is____, but a **dictatorship** is _____.

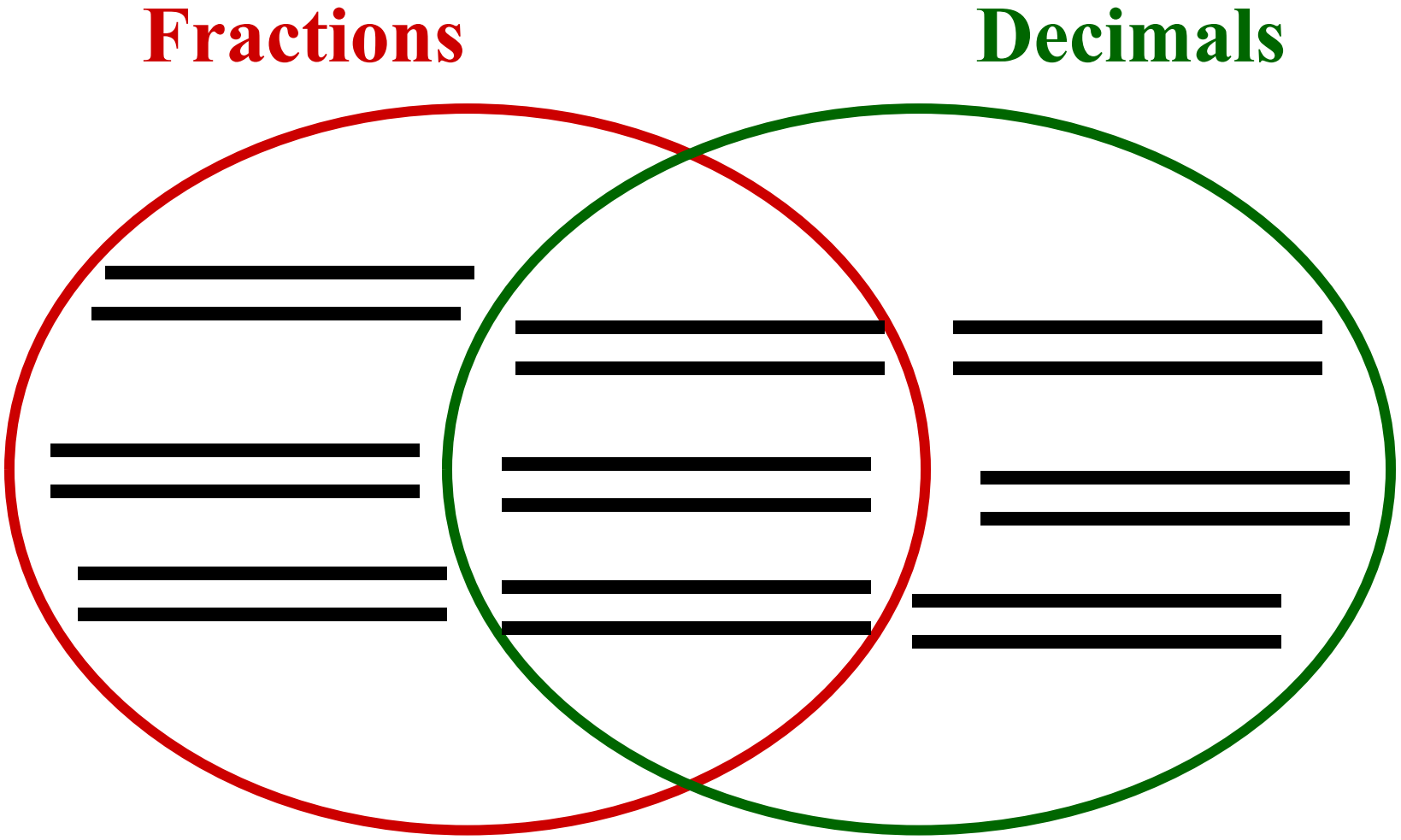
a **monarchy** is____, but a **dictatorship** is _____.

a **monarchy** is____, but a **dictatorship** is _____.

Identifying Similarities & Differences Comparing using Venn Diagrams



Identifying Similarities & Differences Comparing using Venn Diagrams



0

Fractions and **Decimals** are similar because they both_____. _____.

_____.

Fractions and **Decimals** are different because

Fractions are _____, but **Decimals** are _____.

Fractions are _____, but **Decimals** are _____.

Fractions are _____, but **Decimals** are _____.

COMPARISON MATRIX

	Item 1	Item 2	Item 3	
Characteristic 1				Similarities and Differences
Characteristic 2				Similarities and Differences
Characteristic 3				Similarities and Differences

CONCLUSION:

COMPARISON MATRIX

	Item 1	Item 2	Item 3	
Characteristic 1				Similarities and Differences
Characteristic 2				Similarities and Differences
Characteristic 3				Similarities and Differences

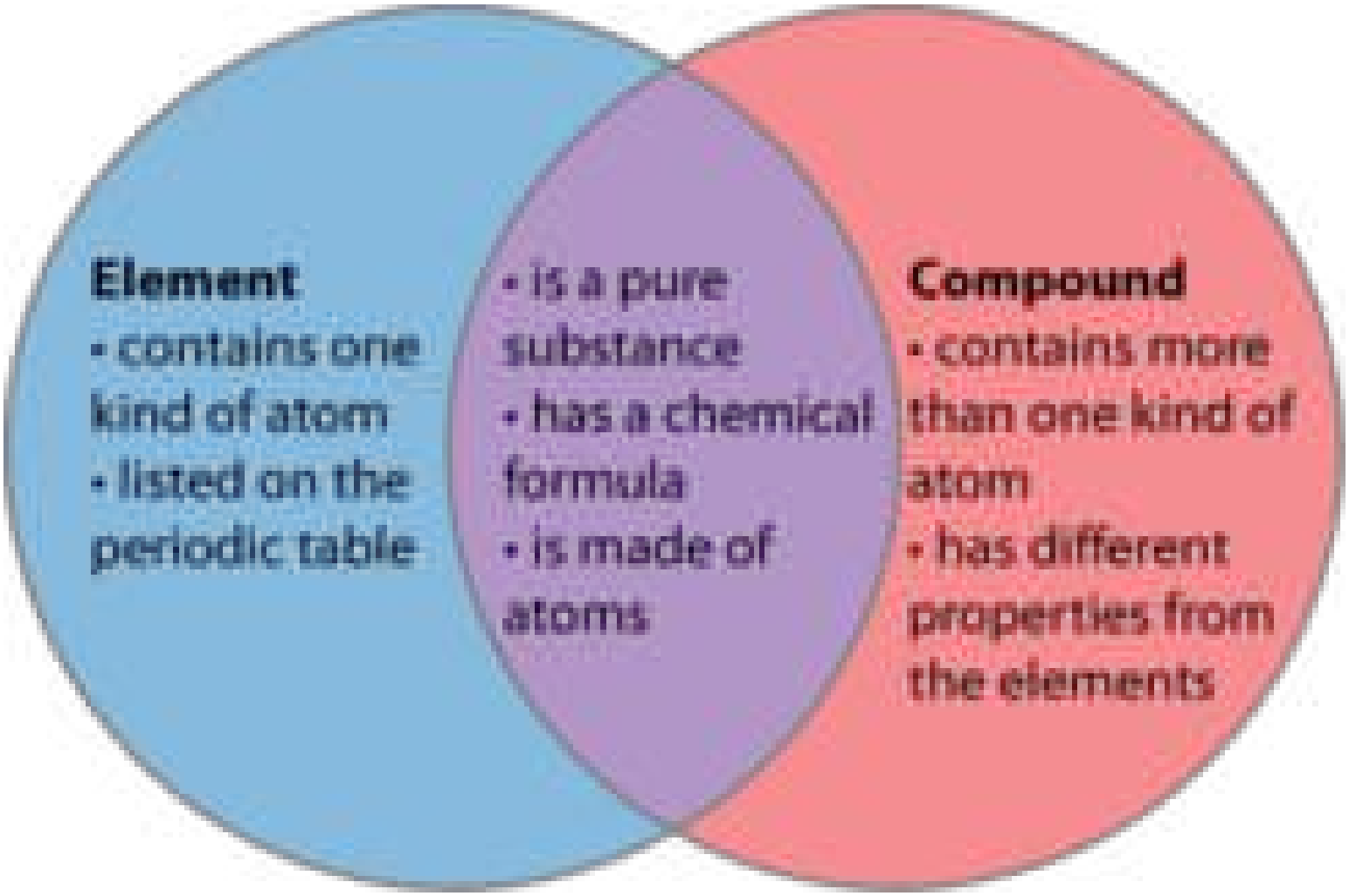
CONCLUSION: _____ and _____ are alike because they _____ _____. They are different because _____is_____, but_____ _____.

DATA /DATA ANALYSIS

	Dependent Variable			
Independent Variable	Trial 1	Trial 2	Trial 3	Average Of Trials

CONCLUSION

VENN DIAGRAM



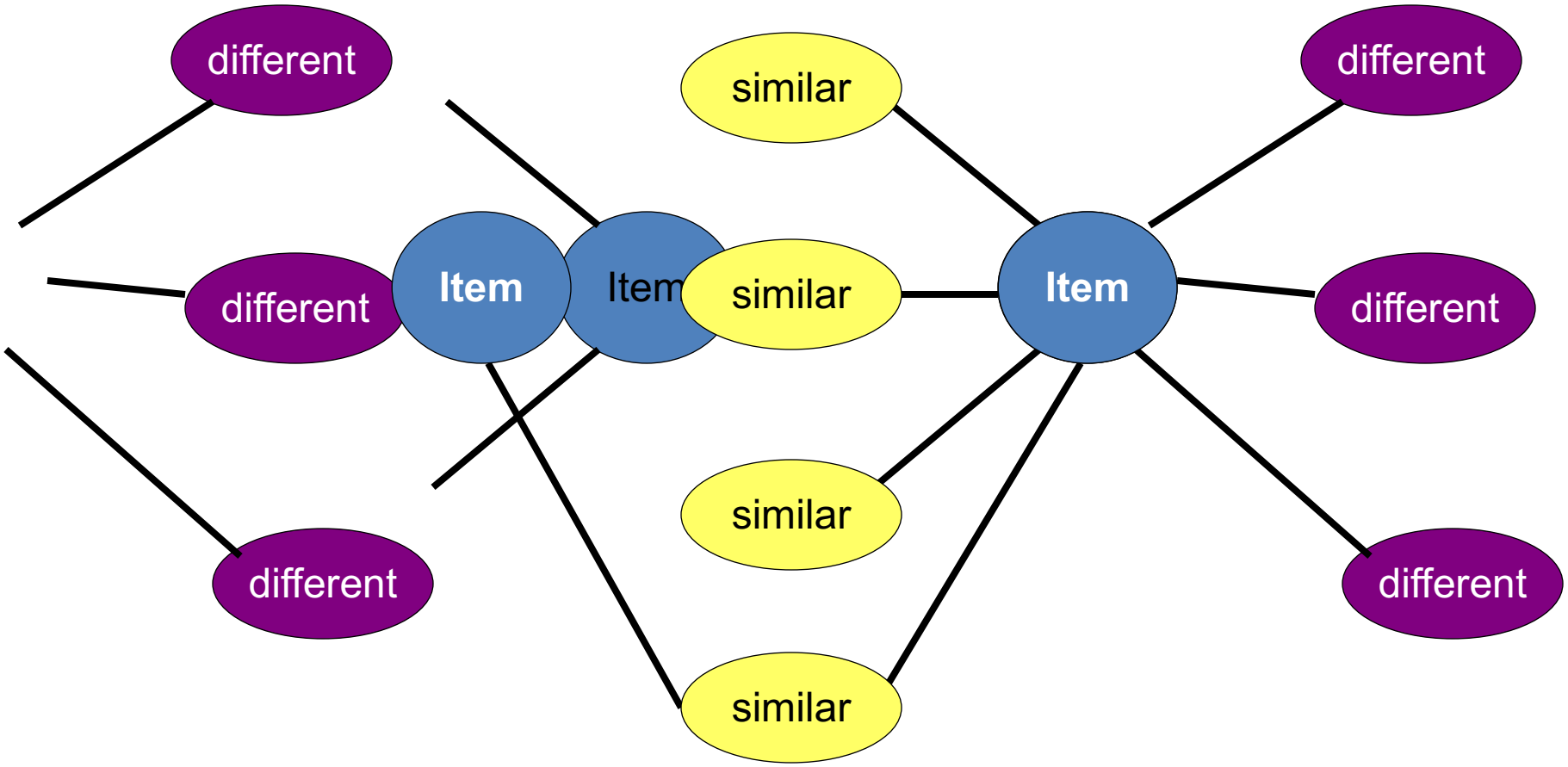
		Characteristics			
		walk	talk	swim	read
Items To Be COMPARED	person	X	X	X	X
	dog	X		X	
	cat	X		X	
	fish			X	

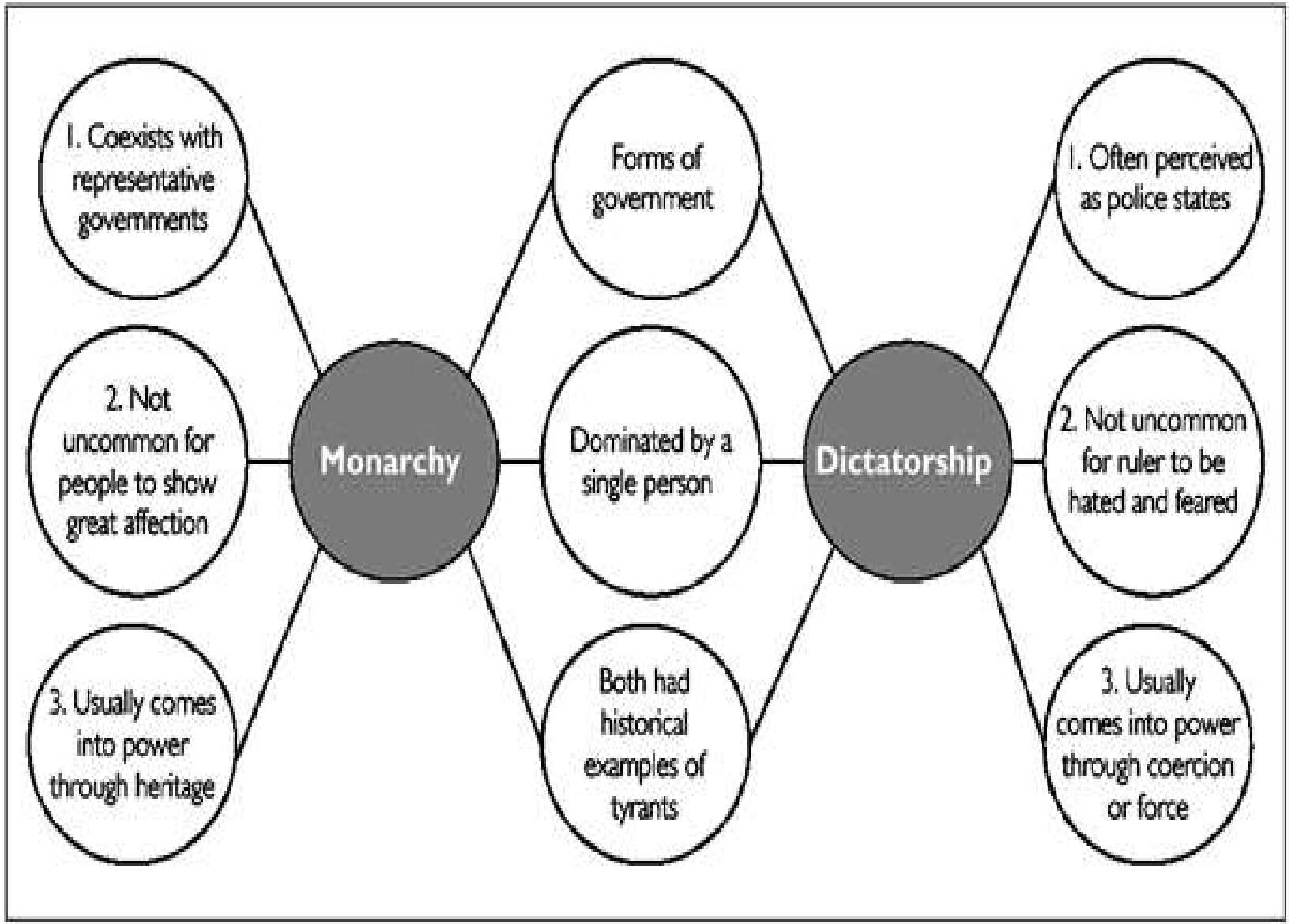
Sources of Energy

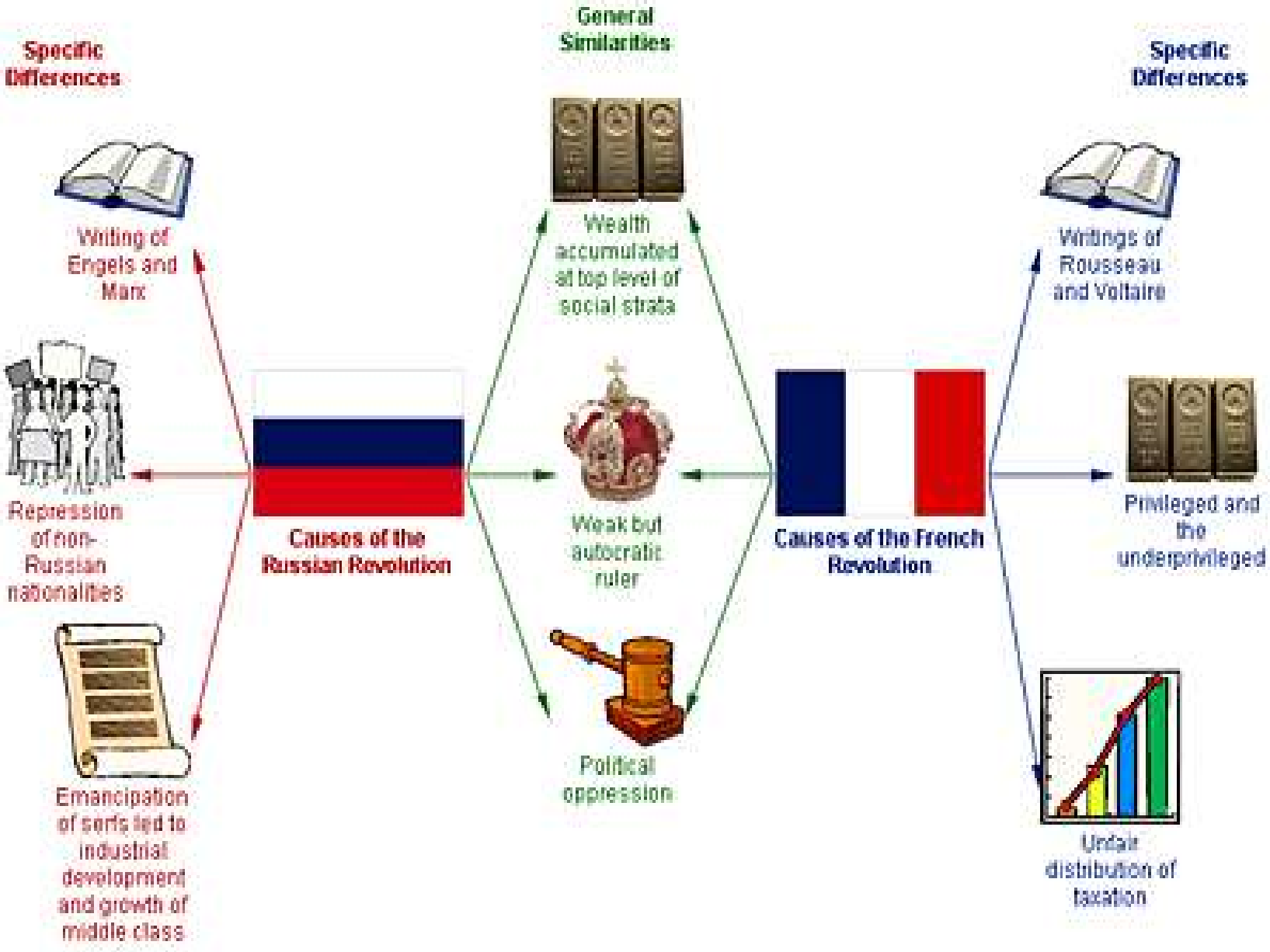
ITEMS	CHARACTERISTICS			
	Used to generate electricity	Used for transportation	Kinetic energy	Renewable
Biomass				
Coal				
Geothermal				
Hydropower				
Natural gas				
Petroleum				
Propane				
Solar				
Uranium				
Wind				

Comparing Terms

David Hyerle---Double Bubble




1. Coexists with representative governments
2. Not uncommon for people to show great affection
3. Usually comes into power through heritage
Monarchy
Forms of government
Dominated by a single person
Both had historical examples of tyrants
Dictatorship
1. Often perceived as police states
2. Not uncommon for ruler to be hated and feared
3. Usually comes into power through coercion or force


Specific Differences
General Similarities
Specific Differences
Writing of Engels and Marx
Wealth accumulated at top level of social strata
Writings of Rousseau and Voltaire
Repression of non-Russian nationalities
Causes of the Russian Revolution
Weak but autocratic ruler
Causes of the French Revolution
Privileged and the underprivileged
Emancipation of serfs led to industrial development and growth of middle class
Political oppression
Unfair distribution of taxation

Compare/Contrast Pattern

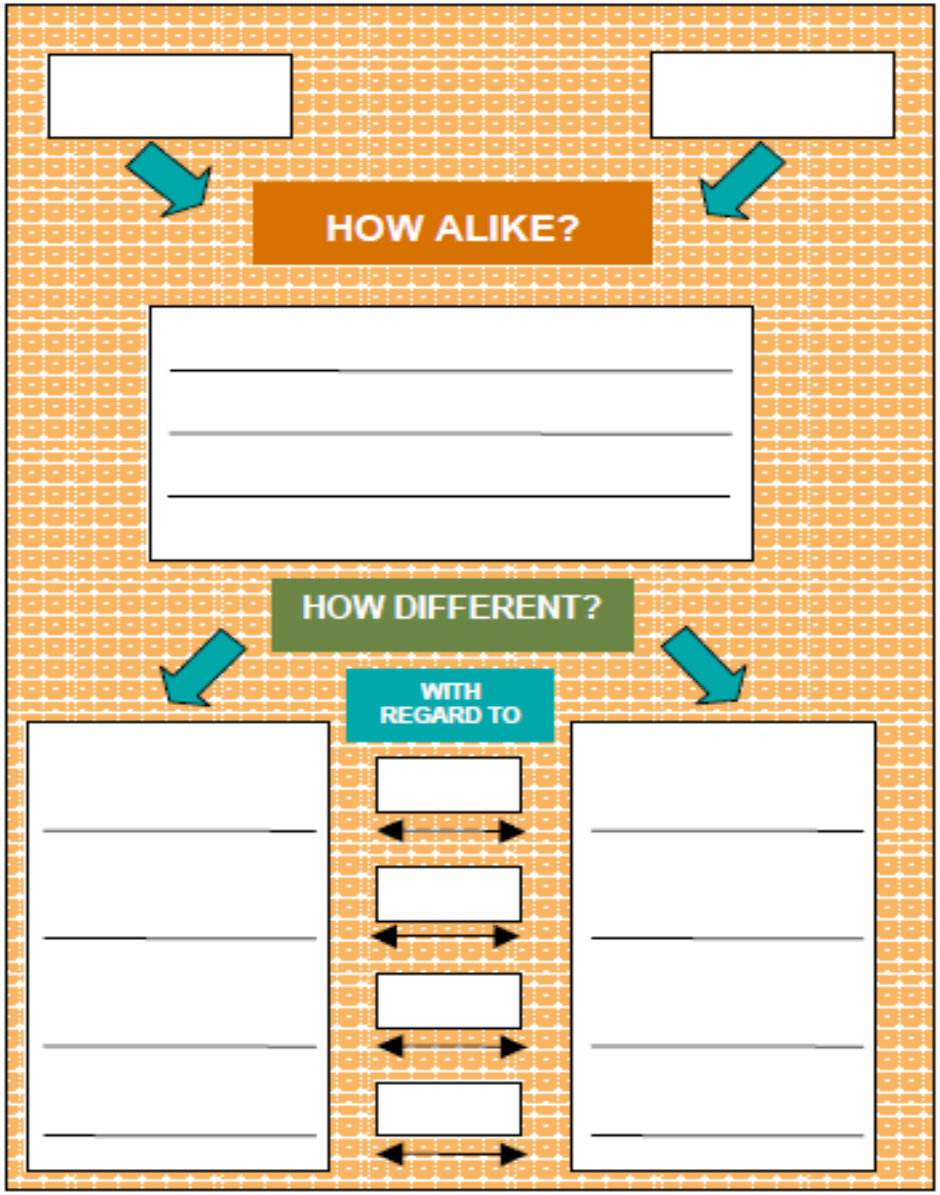
Questions

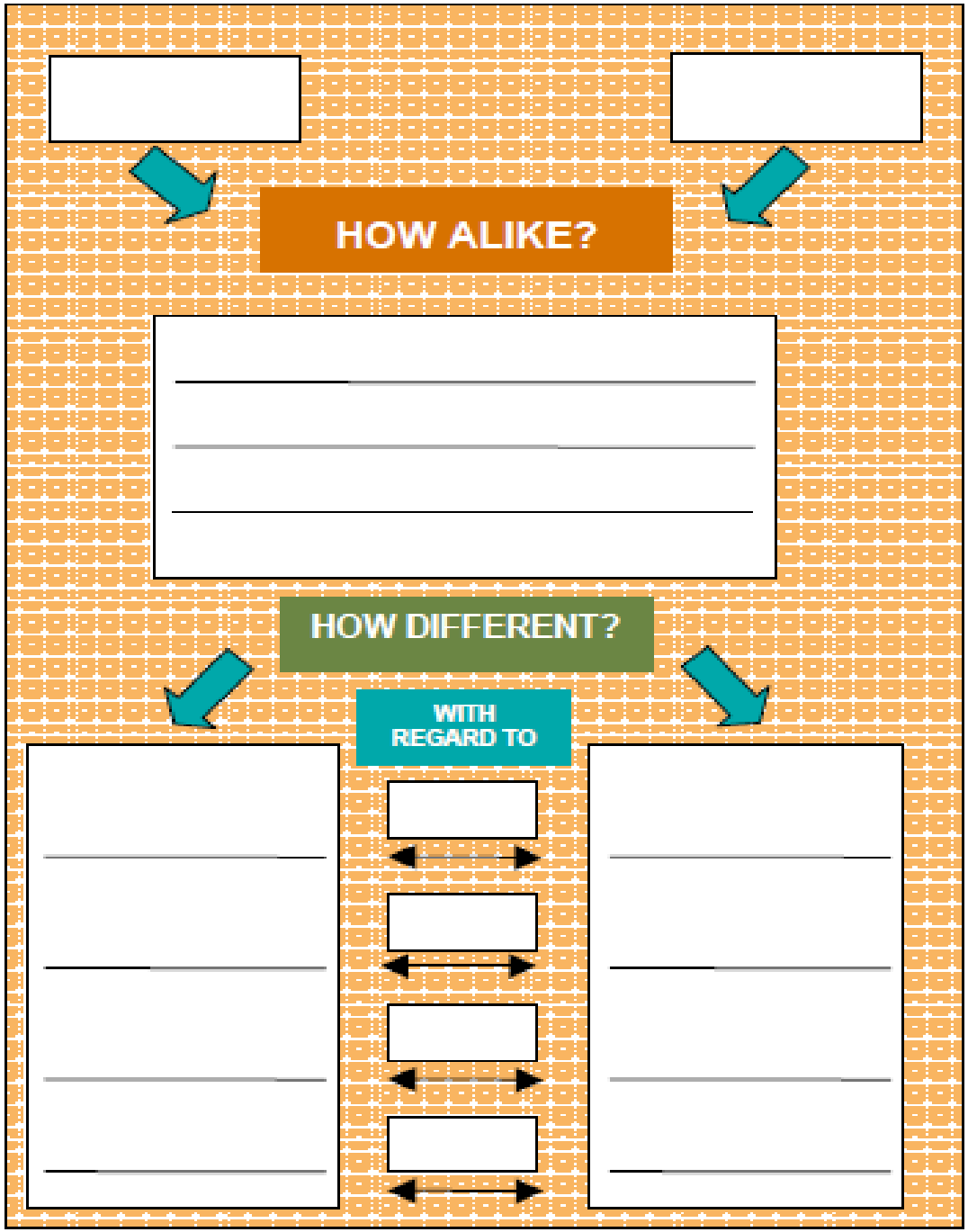
1. What items are being compared?
2. What is it about them that is being compared; what general characteristics of the items form the basis of the comparison?
3. What characteristics do they have in common; how are these items alike?
4. In what way(s) are these items different?
5. What conclusion does the author reach about the degree of similarity or difference between the items?

Use your answers to these questions to form a summary.

Signal Words

although	as well as	as opposed to	both
but	compared with	different from	either...or
even though	however	instead of	in common
in contrast	in the same manner	likewise	on the other hand
otherwise	similar to	similarly	still
whereas	yet	rather than	equivalent




HOW ALIKE?
HOW DIFFERENT?
WITH REGARD TO

apples

oranges

How Are They Alike?

fruits
round
seeds
grow on trees
sweet
nutritious
get juice from 'em

How Do They Differ?

with regard to

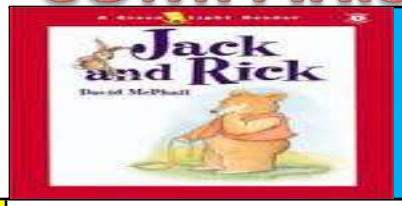
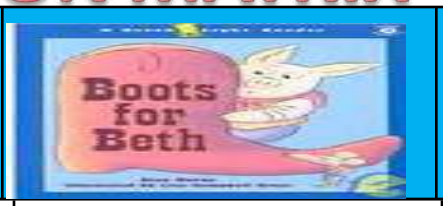
thin, smooth, often eat	skin	thick, bumpy seldom eat
red, green, yellow, multi	color	orange
crisp, mealy	meat	sectioned, pulpy
most states	where grown	subtropical

COMPARISON MATRIX

	Item 1	Item 2	Similarities and Differences
character			
setting			
problem			
solution			

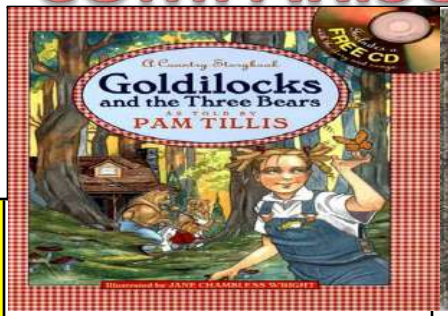
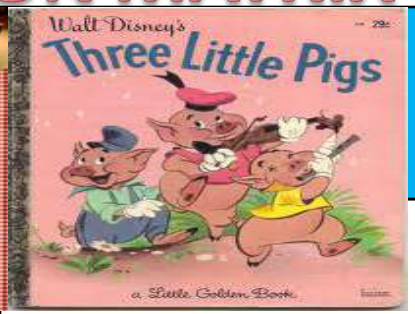
CONCLUSION: _____ and _____ are alike because they _____. They are different because _____is_____, but_____.

COMPARISON MATRIX

			Similarities and Differences
character			
setting			
problem			
solution			

CONCLUSION: _____ and _____ are alike because they _____. They are different because _____is_____, but_____.

COMPARISON MATRIX

			Similarities and Differences
character			
setting			
problem			
solution			

CONCLUSION: _____ and _____ are alike because they _____. They are different because _____is_____, but_____.

Comparison Matrix – Basic Measures

Characteristics	 Pine Tree	 Tulip	 Elephant	 Shark	Similarities and Differences
External Body Features					
Habitat					
Sources of Energy					

CONCLUSION: _____ and _____ are alike because they _____. They are different because _____is_____, but_____.

Comparison Matrix – Basic Measures						
Characteristics	Items to be compared					
	1 – cm square	2 – cm square	Rectangle width 4 cm Length 6 cm	Rectangle width 3 cm Length 7 cm	Rectangle width 3 cm Length 8 cm	Similarities and Differences
Perimeter						
Area						
Conclusions						

Comparison Matrix – Basic Measures					
Characteristics	**Items to be compared**				
	1 – cm square	**2 – cm square**	**Rectangle width 4 cm Length 6 cm**	**Rectangle width 3 cm Length 7 cm**	**Rectangle width 3 cm Length 8 cm**
Perimeter	4 cm	8cm	20 cm	20cm	22 cm
Area	1 sq. cm	4 sq. cm	24 sq. cm	21 sq. cm	24 sq. cm
Conclusions					

Comparison Matrix – Basic Measures					
Characteristics	**Items to be compared**				
	1 – cm square	**2 – cm square**	**Rectangle width 4 cm Length 6 cm**	**Rectangle width 3 cm Length 7 cm**	**Rectangle width 3 cm Length 8 cm**
Perimeter	4 cm	8cm	20 cm	20cm	22 cm
Area	1 sq. cm	4 sq. cm	24 sq. cm	21 sq. cm	24 sq. cm
Conclusions	Two rectangles can have the same perimeter, but different areas. That also means that a square and a rectangle could have the same perimeter, but different areas. Also, two rectangles can have the same area, but different perimeters. If you double the size of a square, the perimeter doubles, but the area increases 4 times.				

Comparison Matrix – Basic Measures					
Characteristics	Items to be compared				
	Pine Tree	Tulip	Elephant	Shark	
External Body Features					
Habitat					
Sources of Energy					
Conclusions					

Comparing Rubric

4	The student uses important ,as well as some less obvious, characteristics to compare the items. The student accurately identifies the similarities and differences and explains his conclusions in a way that shows a complete and detailed understanding of the items.
3	The student uses important characteristics to compare the items. The student accurately identifies the similarities and differences and explains his conclusions .
2	The student uses important characteristics to compare the items, but not the most important characteristics. The student's comparisons and conclusions show some misconceptions about the items .
1	The student uses insignificant characteristics to compare the items. The student's comparisons and conclusions show many misconceptions that indicate that the student does not understand the items .
0	Not enough information to make a judgment.

Comparing Rubric for Younger Students

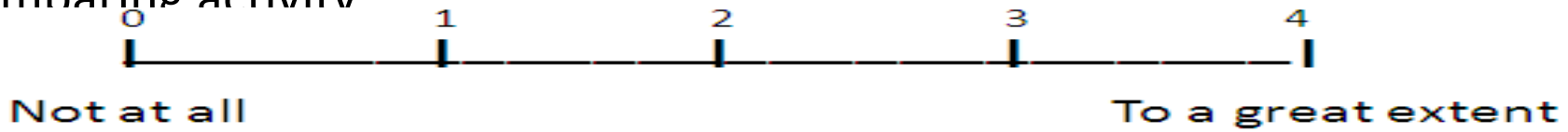
4	The student uses important features to compare the items. The student also uses some features that are not easily seen. The student identifies the similarities and differences without making mistakes. The students tells what he/she learned in a way that shows a complete understanding of the items.
3	The student uses important features to compare the items. The student identifies the similarities and differences without making mistakes. The student tells what he/she learned.
2	The student uses features to compare the items, but not the most important features. The student makes some mistakes in the comparison.
1	The student uses features that are not important to compare the items. The student makes some big mistakes in the comparison.
0	The student does not try to do the task.

Planning for Comparing Worksheet

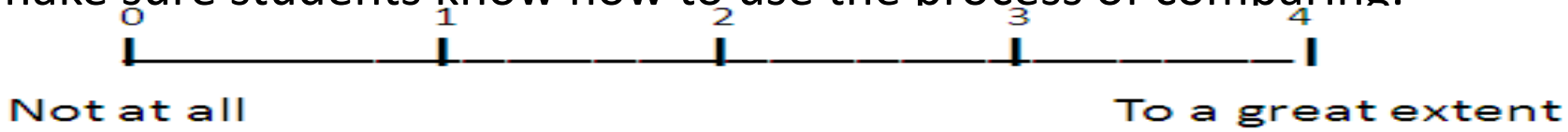
- What knowledge will students be learning?
- Do I need to set time aside to teach students the process of comparing? How will I teach them the process?
- Will I ask students to use a graphic organizer?
- How much guidance will I provide students?
- How will students explain their work and communicate their conclusions?
- How will I monitor how well students are doing with comparing?
- What will I do to help students who are not comparing effectively?

Assessing Myself-Comparing

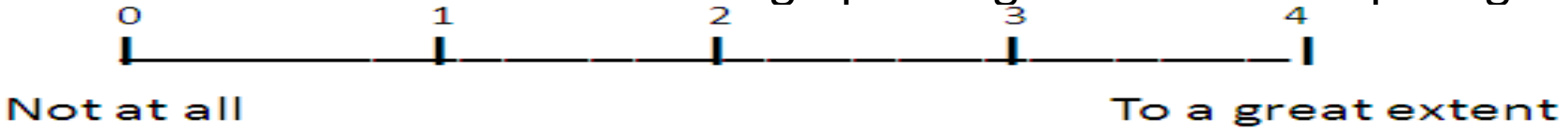
I clearly communicate the knowledge students will use for the comparing activity



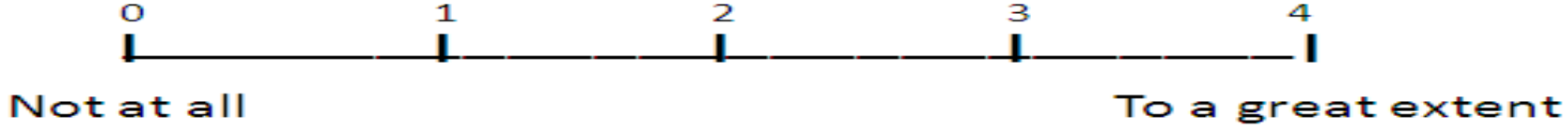
I make sure students know how to use the process of comparing.



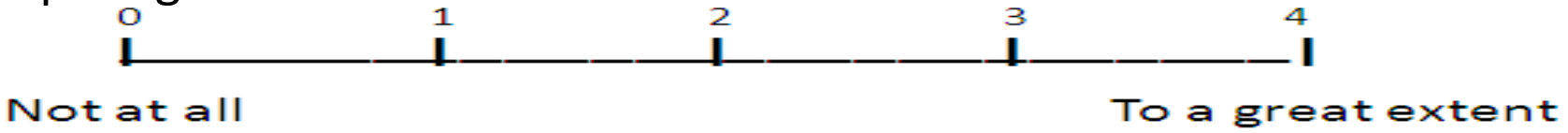
I make sure students understand the graphic organizers for comparing.



I give students an appropriate amount of guidance for the activity.



Over time, I collect evidence about my student's proficiency at using comparing.



4 highly effective “forms” to identify similarities and differences

- Comparing

Classifying

- Creating analogies
- Creating metaphors

Reflecting on My Current Beliefs and Practices- Classifying

- What is the purpose of asking students to classify?
- What kind of activities do I use to help students classify?
- I can think of a time that I asked students to classify, and I was pleased with the results. Why did it go well?
- I can think of a time that I asked students to classify, and I was not pleased with the results. Why did it not go well?
- What questions do I have about using classifying in my classroom?

Classifying

- The process of grouping things that are alike into categories on the basis of their characteristics.
- It is critical to identify the rules that govern class or category membership.

-Marzano,2001

For example,

Invertebrates

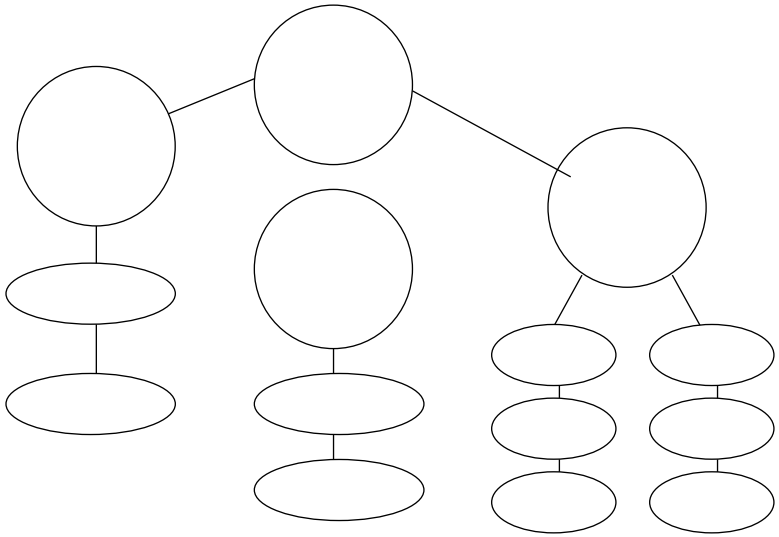
animals without a backbone or spinal column

Vertebrates

animals with a backbone or spinal column

Graphic Organizers for Classification

Place Categories in column headings			



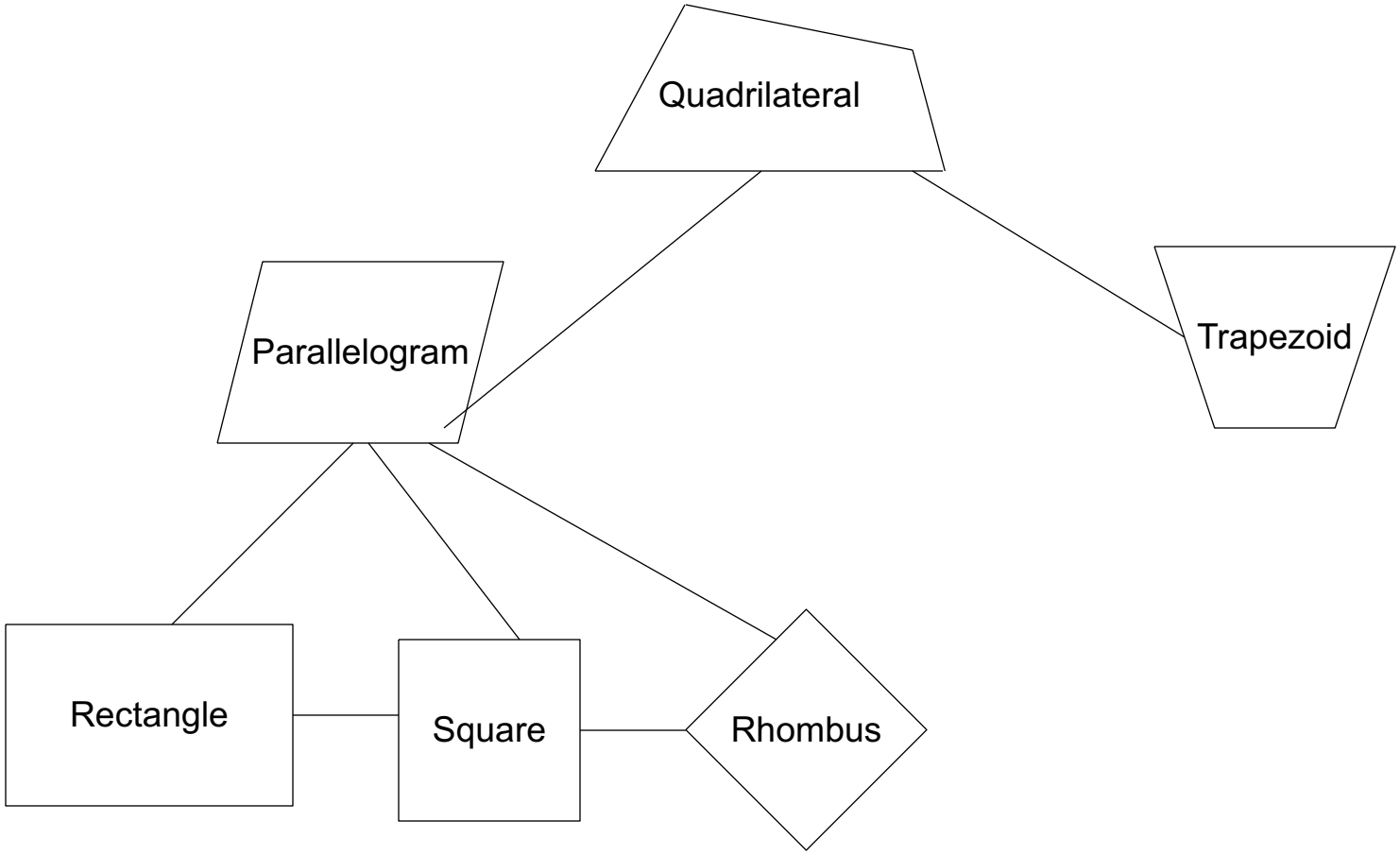
-most useful when all categories are equal in generality

-more useful when all categories are **not** equal in generality

Steps for Classifying

1. Identify the *items* you want to classify.
2. Select what seems to be an important item, describe its key attribute(s), and identify other items that have the same attributes.
3. Create a category by specifying the attribute(s) that the items must have for membership in this category.
4. Select another item, describe its key attribute(s), and identify other items that have the same attribute.
5. Create the second category by specifying the attribute(s) that the items must have for membership in this category.
6. Repeat the previous two steps until all items are classified and the specific attributes have been identified for membership in each category.
7. If necessary, combine categories or split them into smaller categories and specify attribute(s) that determine membership in the category.

Identifying Similarities & Differences
Classifying using Tree Diagram



Classifying Rubric

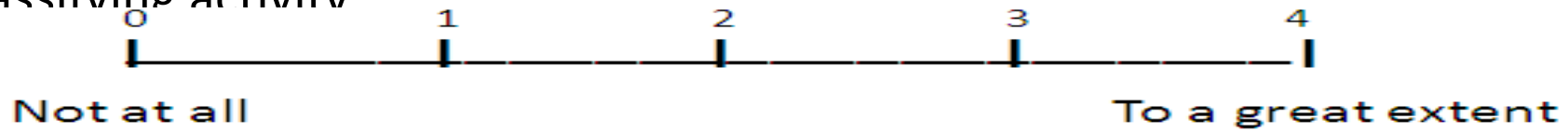
4	The student organizes the items into meaningful categories and thoroughly describes the defining characteristics of each category . The student provides insightful about the classification.
3	The student organizes the items into meaningful categories and describes the defining characteristics of each category .
2	The student organizes the items into categories that are not very meaningful, but addresses some of the important characteristics of the items.
1	The student organizes the items into categories that do not make sense or are unimportant.
0	Not enough information to make a judgment.

Planning for Classifying Worksheet

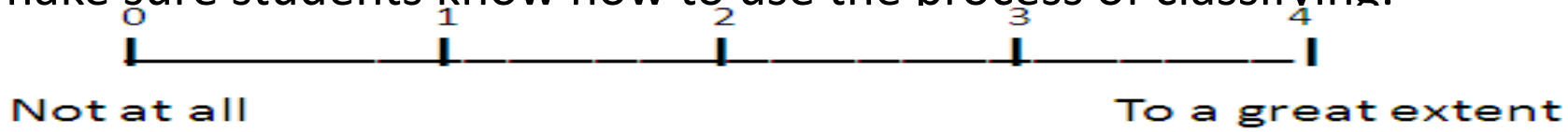
- What knowledge will students be learning?
- Do I need to set time aside to teach students the process of classifying? How will I teach them the process?
- Will I ask students to use a graphic organizer?
- How much guidance will I provide students?
- How will students explain their work and communicate their conclusions?
- How will I monitor how well students are doing with classifying?
- What will I do to help students who are not classifying effectively?

Assessing Myself-Classifying

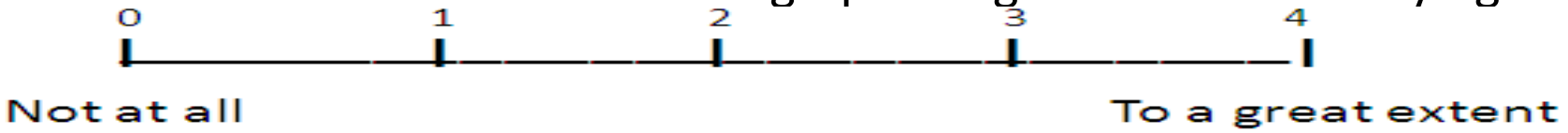
I clearly communicate the knowledge students will use for the classifying activity



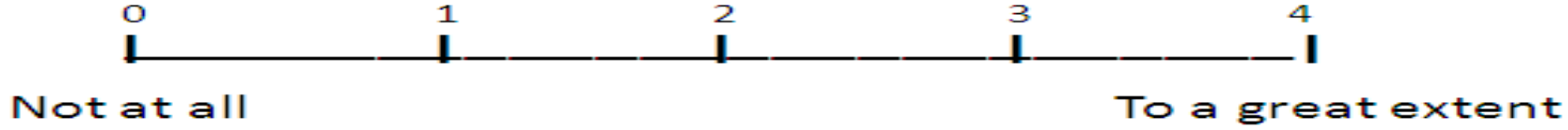
I make sure students know how to use the process of classifying.



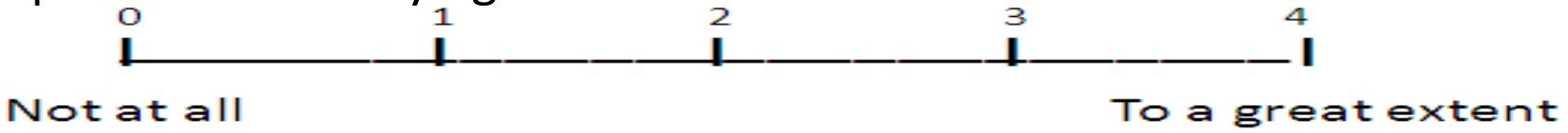
I make sure students understand the graphic organizers for classifying.



I give students an appropriate amount of guidance for the activity.



Over time, I collect evidence about my student's proficiency at using the process of classifying.



4 highly effective “forms” to identify similarities and differences

- Comparing
- Classifying

Creating Analogies

- Creating metaphors

Reflecting on My Current Beliefs and Practices- Analogies

- What is the purpose of asking students to create analogies?
- What kinds of activities do I use to help students create analogies?
- What analogies can I think of that apply to the content areas that I teach?
- What questions do I have about using analogies in my classroom?

Creating Analogies

Examples,

Carpenter is to hammer as painter is to brush.

Hot is to cold as night is to day.

Oxygen is to humans as carbon dioxide is to plants.

Core is to earth as nucleus is to atom.

- Analogies help us to see how seemingly dissimilar things are similar.
- They increase our understanding of new information.

-Marzano,2001

Steps for Creating Analogies

is to

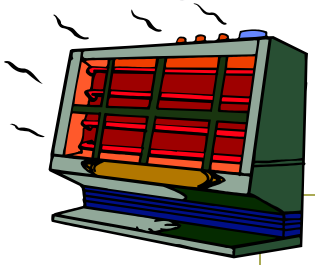
1. Identify how the two elements in the first pair are related.
2. State the relationship in a general way.

?? is to

3. Identify another pair of elements that share a similar relationship.

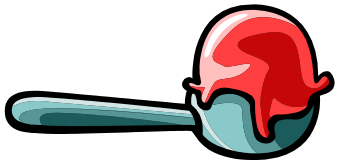
Analogies can help explain an unfamiliar concept by making a comparison to something we understand.

hot



is to

cold



Relationship: opposites

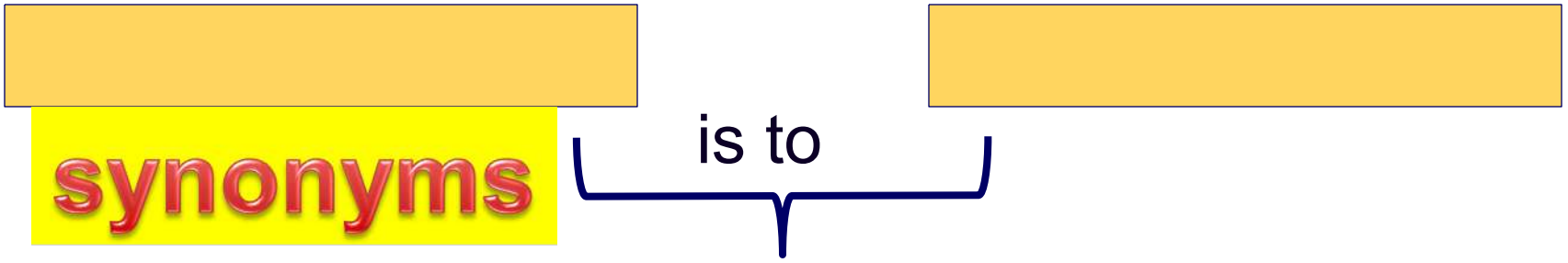
night

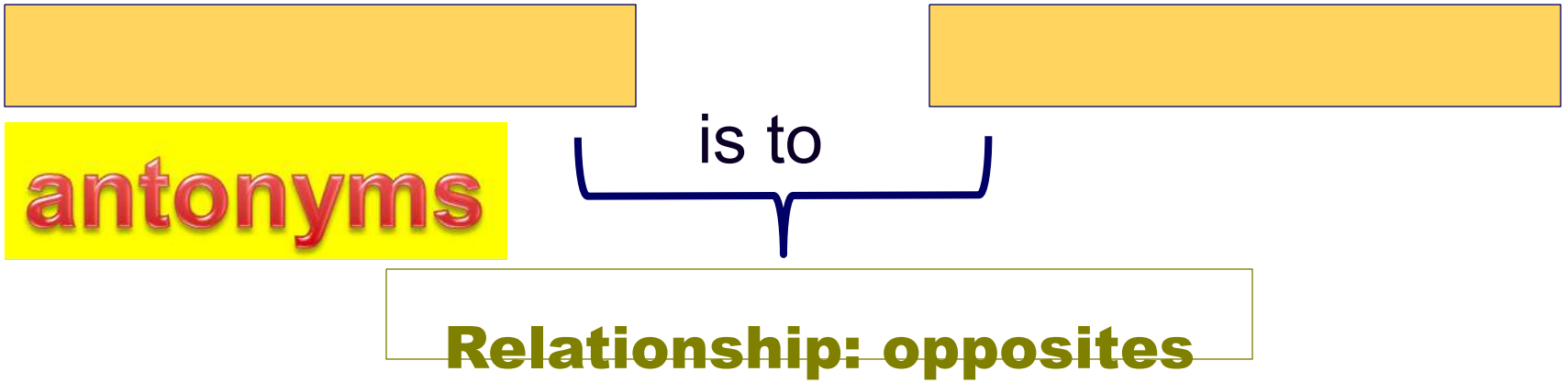
is to

???????

Relationship: opposites

Use Familiar Content to Teach How to Create Analogies





Analogies can help explain an unfamiliar concept by making a comparison to something we understand

Part/ Whole Analogy

- Example: Tire: bike
- Sentence Stem: “Tire” is to “bike” as “eraser” is to “____.”
- Answer: Pencil
- Explanation: A tire is part of a bike, and an eraser is part of a pencil.

Function/ Purpose Analogy

- Example: Chair : sit
- Sentence Stem: “Chair” is to “sit” as “pen” is to ____.
- Answer: Write
- Explanation: The purpose of a chair is to be sat on and the purpose of a pen is to be written with.

Location Analogy

- Example: Desk: office
- Sentence Stem: “Desk” is to “office” as “stove” is to “____.”
- Answer: Kitchen
- Explanation: A desk is located in a office, and a stove is located in a kitchen.

Characteristic Use Analogy

- Example: Photographer: camera
- Sentence Stem: “photographer” is to “camera” as “football player” is to “_____.”
- Answer: Football
- Explanation : a photographer uses a camera, and a football player uses a football.

ANALOGIES

as

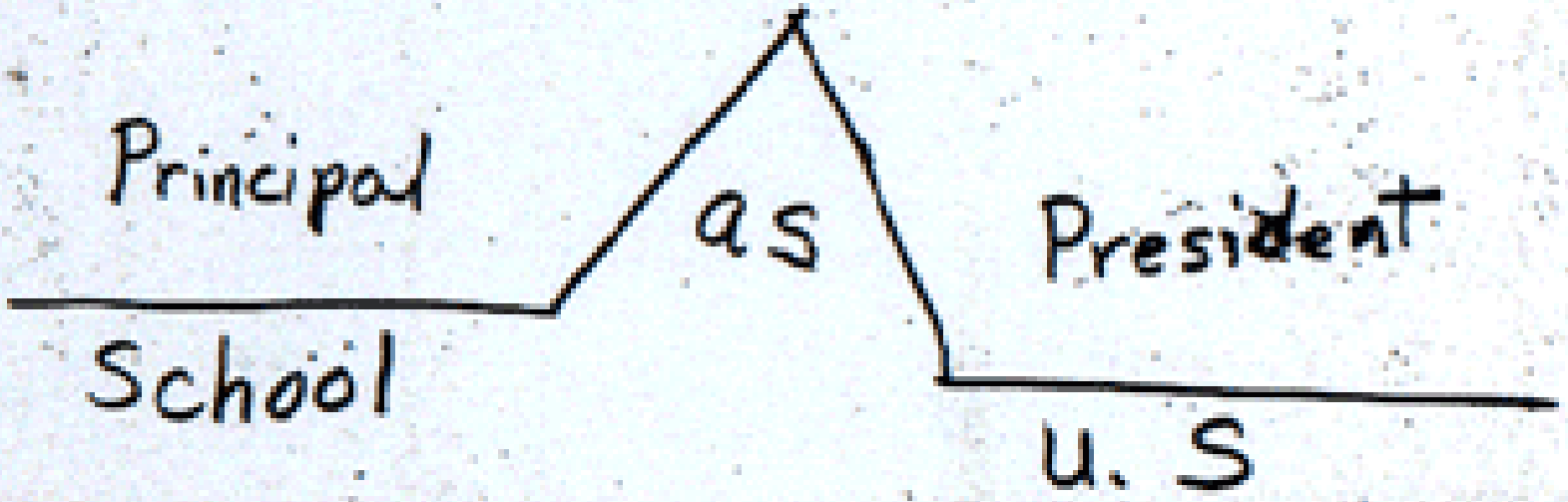
Relationship: _____

as

Relationship: _____

_____ is to _____ as

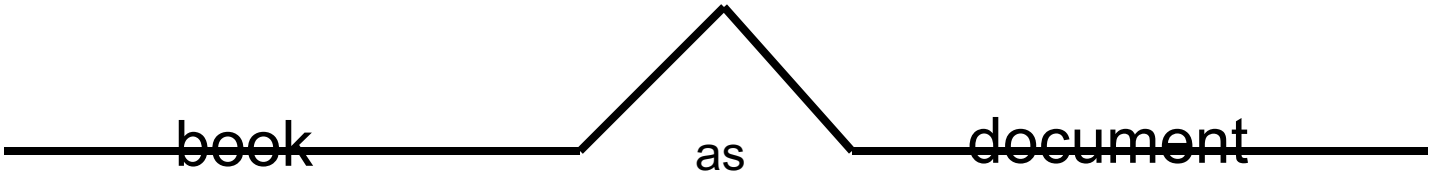
_____ is to _____.



The principal leads the school as the president leads the United States.

R.F leads

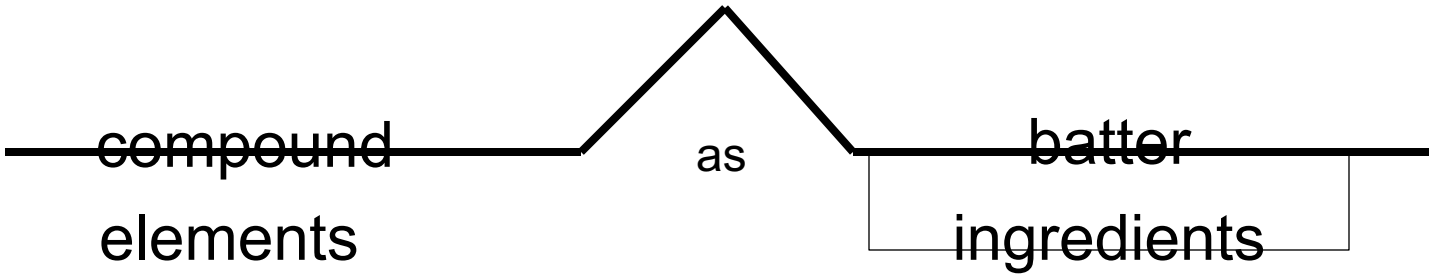
Solving Analogy Problems



backpack — portfolio

……is carried in……

…relating factor



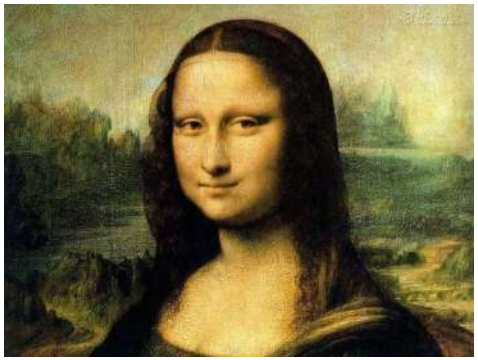
elements — ingredients

…a new substance made up of

…relating factor

Sample analogies

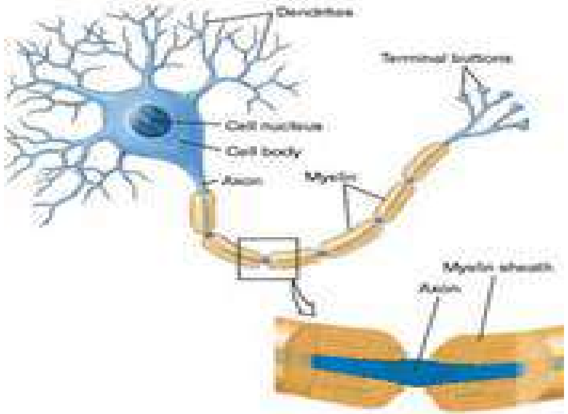
- Mona Lisa is to Leonardo as Starry Night is to Van Gogh.



as

Sample analogies

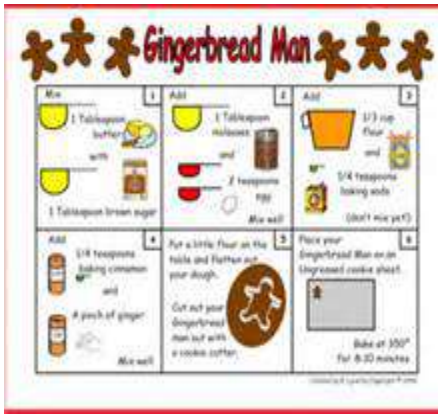
- Arm is to skin as axon is to myelin sheath.



- Recipe is
  construct

Sample analogies

- Recipe is to cooking as blueprint is to construction.



as

Graphic Organizers for Analogies

Relationship

Graphic Organizers for Analogies

	thermometer	Is to	temperature
Relationship	Measures incremental changes in something		
	odometer	Is to	distance

Creating Analogies Rubric

4	The student concisely and accurately states the relationship between the general pattern of the first pair of elements and explains how it applies to the second pair of elements . The explanation shows a complete and detailed understanding of the analogy.
3	The student states the general pattern of the relationship between the first two of elements and explains how it applies to the second pair of elements. The explanation shows an understanding of the analogy.
2	The student states the general pattern of the relationship between the first two of elements in a way that reveals some misconceptions about how the elements in the first pair are related . Or, the student has some misconceptions about how the relationship applies to the second pair of elements.
1	The student identifies trivial information and has misconceptions about how the elements in the first pair are related. The student has misconceptions about how the relationship applies to the second pair of elements.
0	Not enough information to make a judgment.

Creating Analogies Rubric for Younger Students

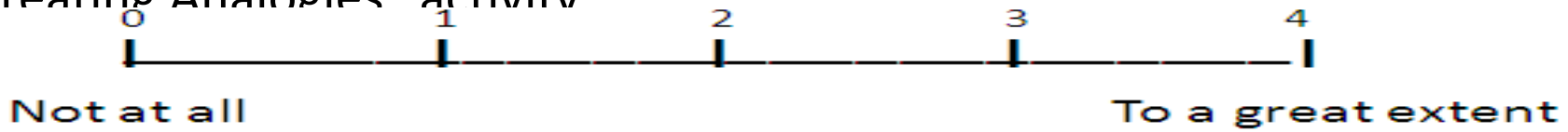
4	The student correctly tells how the first two things are connected. The student tells how the general pattern applies to the second pair of things. The student uses details to completely explain the analogy.
3	The student correctly tells how the first two things are related. The student tells how the general pattern applies to the second pair of things.
2	The student makes mistakes explaining how the first two things are connected. Or, the student makes mistakes telling how the general pattern applies to the second pair of things.
1	The student tells information that is not important. The explanation has some big mistakes. Or, the student cannot explain how the relationship applies to the second pair of elements.
0	The student does not try to do the task.

Planning for Analogies Worksheet

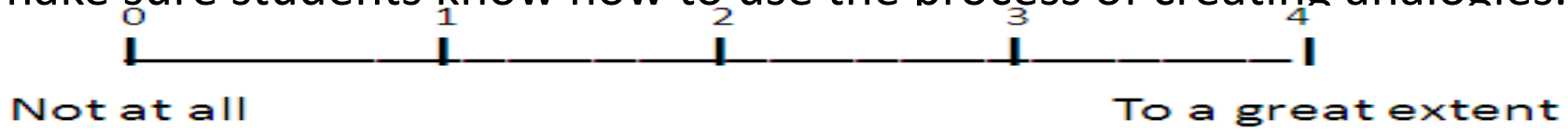
- What knowledge will students be learning?
- Do I need to set time aside to teach students the process of creating analogies? How will I teach them the process?
- Will I ask students to use a graphic organizer?
- How much guidance will I provide students?
- How will students explain their work and communicate their conclusions?
- How will I monitor how well students are doing with creating and using analogies?
- What will I do to help students who are not creating and using analogies effectively?

Assessing Myself-Analogies

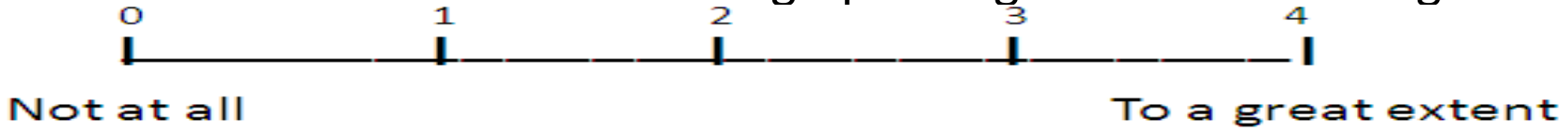
I clearly communicate the knowledge students will use for the "Creating Analogies" activity



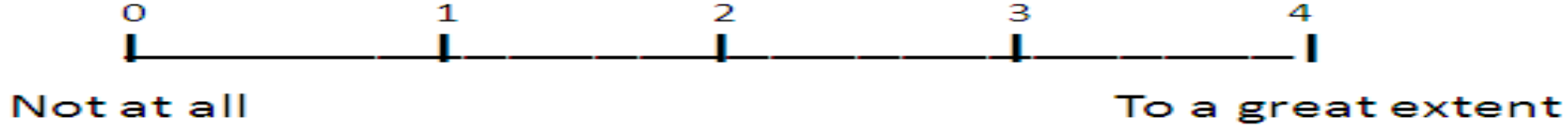
I make sure students know how to use the process of creating analogies.



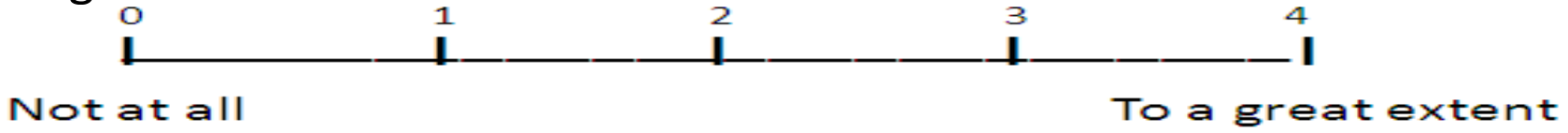
I make sure students understand the graphic organizers for creating analogies.



I give students an appropriate amount of guidance for the activity.



Over time, I collect evidence about my student's proficiency at using analogies.



4 highly effective “forms” to identify similarities and differences

- Comparing
- Classifying
- Creating analogies

Creating Metaphors

Reflecting on My Current Beliefs and Practices- Metaphors

- What is the purpose of asking students to create metaphors?
- What kinds of activities do I use to help students create metaphors?
- What metaphors apply to the content areas that I teach?
- What questions do I have about using metaphors in my classroom?

Creating Metaphors

- The two items in a metaphor are connected by an abstract or non literal relationship.

-Marzano,2001

For example,

Love is a rose.

The highway is a ribbon of traffic.

Steps for Creating Metaphors

is a

1. Identify the important or basic elements of the information or situation with which you are working.
2. Write the basic information as a more general pattern by
   - ❑ replacing words for specific things with words for more general things;
   - ❑ summarizing information whenever possible.
3. Find new information or a situation to which the general pattern applies.

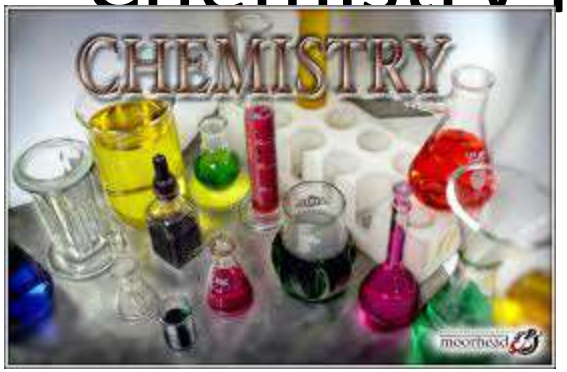
Use Familiar Content to Create Metaphors

"You're walking on thin ice."

"Her eyes were pools of blue."

Use Familiar Content to Create Metaphors

"Chemistry is a monster."



"Cafeteria lunches are dog food."

Use Familiar Content to Create Metaphors

"She was a grizzly bear in the mornings."

Use Familiar Content to Create Metaphors

"My brother is a tyrant."

My brother

makes me do his chores
calls me names

I lock myself in the bathroom to escape

Sometimes he locks me in the bathroom

absolute ruler
Makes rules that are not fair

citizens flee

arrests people

A person who treats innocent and weaker people unfairly

METAPHOR

ELEMENT 1	COMMON ABSTRACT CHARACTERISTIC	ELEMENT 2

_____ is _____.

METAPHOR

ELEMENT 1	COMMON ABSTRACT CHARACTERISTIC	ELEMENT 2
LIFE		STAGE
A person is born into life.	Entrance/birth.	A play has an opening scene.
A person dies at the end.	Exit/death.	A play has an ending scene.
A person progresses through life.	Acts/scenes.	A play progresses through acts and scenes.

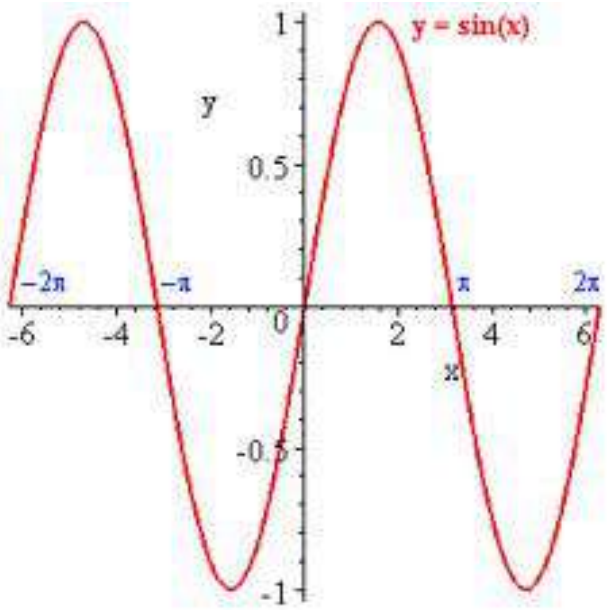
‘Life is a Stage.”

Graphic Organizer for Metaphors

It depicts that two elements have somewhat different literal patterns, but they share a common abstract pattern.

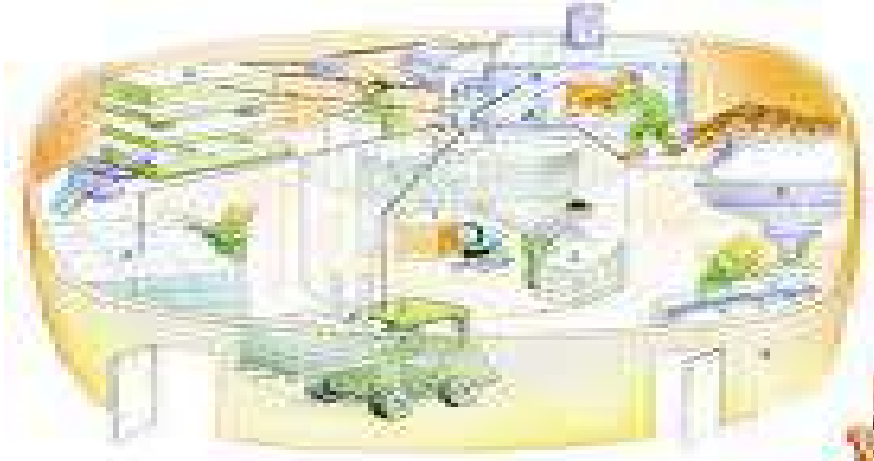
Use Familiar Content to Create Metaphors

"The graph of the sine function is a rollercoaster."



Use Familiar Content to Create Metaphors

"A cell is a factory."



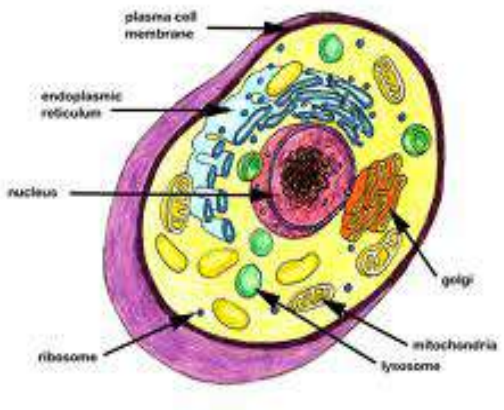
Graphic Organizer for Metaphors

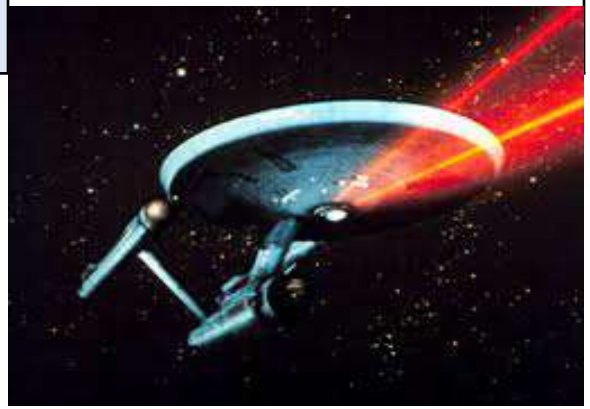
Love is a rose.

It depicts that two elements have somewhat different literal patterns, but they share a common abstract pattern.

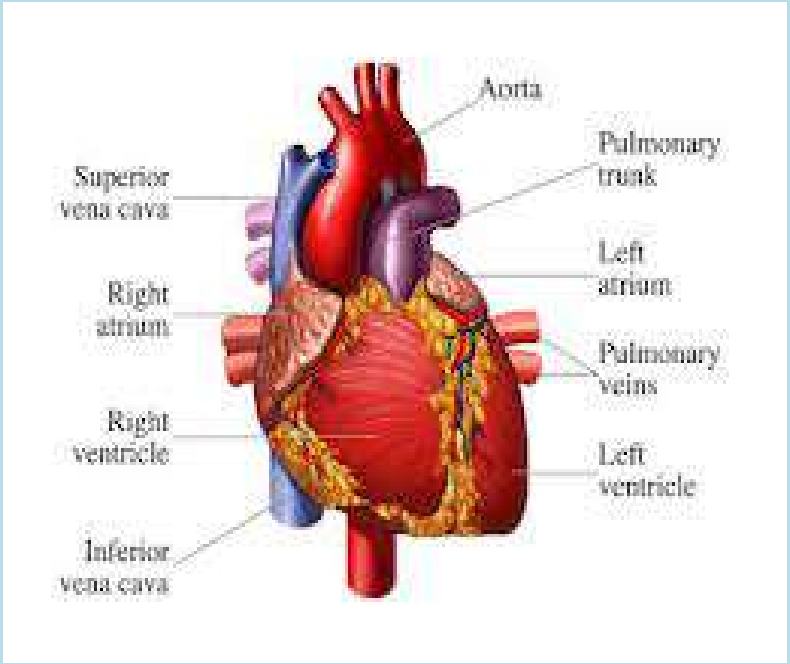
Making a Sandwich	Another Way to Say It	Writing a Paragraph
What are you hungry for?	What is my goal?	What is the topic or purpose of the paragraph?
What kind of bread?	What will hold it together?	What will be my first and last sentences?
What will I put in the sandwich that will make it tasty?	What will go in the middle that will all go together?	What sentences do I need to help the topic of my paragraph?
Shall I add something to make it better? Pickles? Mustard? Banana slices?	How can I make it even better?	What can I do to make it more interesting or easier to understand? Adjectives? Another detail?

Cell	General, Abstract	Enterprise (Star Trek)
Nucleus	The part that runs the system	The bridge
Selectively permeable membrane	Part that keeps out bad things and lets in the good	Transporter Room



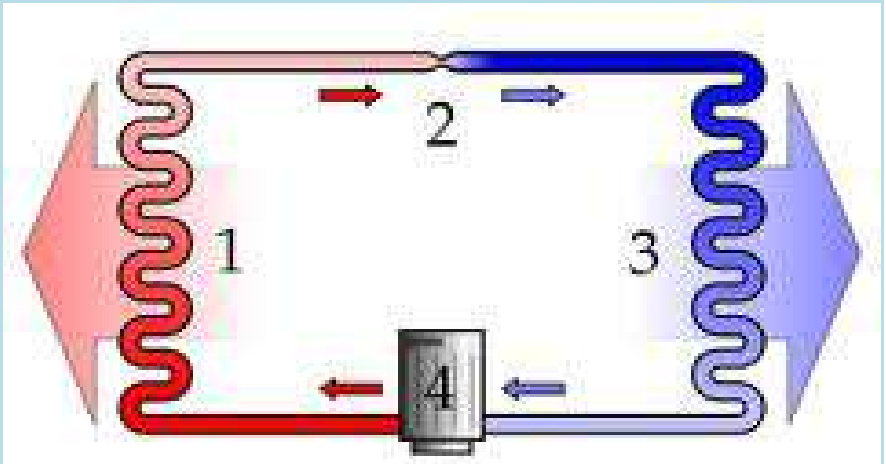


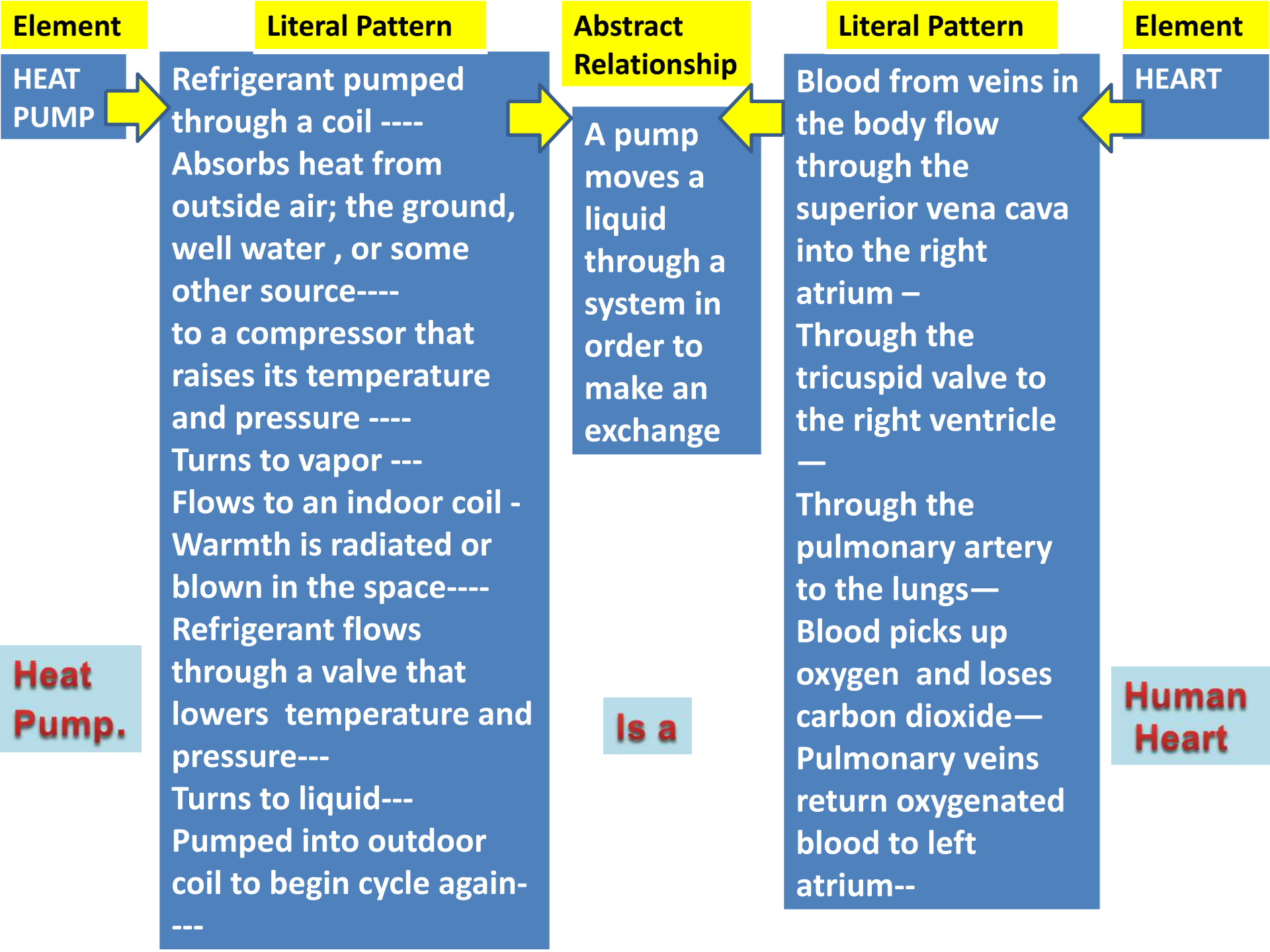
A Human Heart



Is a

Heat Pump.

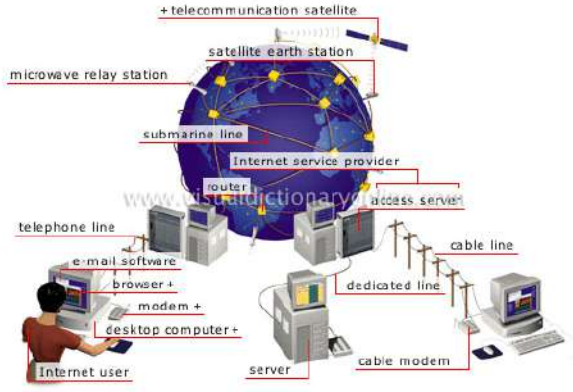



Element
Literal Pattern
Abstract Relationship
Literal Pattern
Element
HEAT PUMP
Refrigerant pumped through a coil ---- Absorbs heat from outside air; the ground, well water , or some other source---- to a compressor that raises its temperature and pressure ---- Turns to vapor --- Flows to an indoor coil - Warmth is radiated or blown in the space---- Refrigerant flows through a valve that lowers temperature and pressure--- Turns to liquid--- Pumped into outdoor coil to begin cycle again----
A pump moves a liquid through a system in order to make an exchange
Blood from veins in the body flow through the superior vena cava into the right atrium – Through the tricuspid valve to the right ventricle — Through the pulmonary artery to the lungs— Blood picks up oxygen and loses carbon dioxide— Pulmonary veins return oxygenated blood to left atrium--
HEART
Heat Pump.
Is a
Human Heart

Examples of Metaphors using Nonlinguistic Representation

The eye is

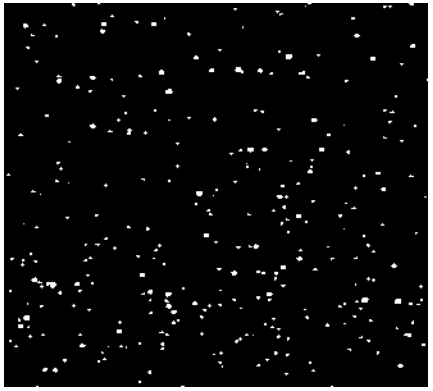
a camera.



The internet

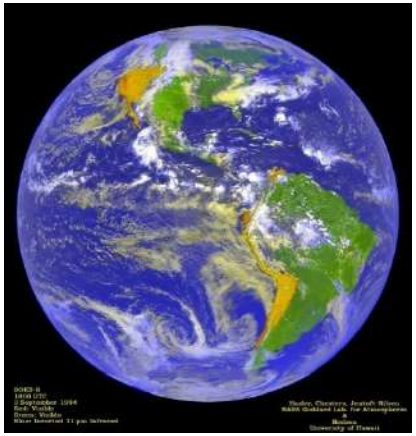
is a café.

Examples of Metaphors using Nonlinguistic Representation



The stars

blanketed



the earth.

Examples of Metaphors using Nonlinguistic Representation

Spring has

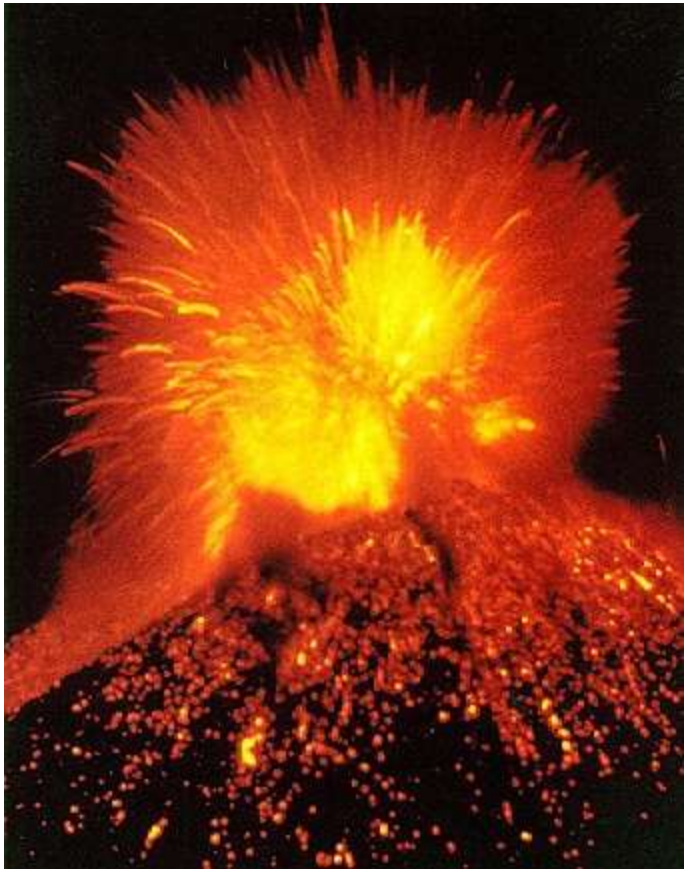
sprung.

A wink in

time.

- The hamburger is a gut bomb.

- The student is a volcano.



Creating Metaphors Rubric

4	The student identifies the important information of the situation in detail and concisely and accurately states the abstract relationship that explains the general pattern. The student identifies another situation that has the same general pattern and accurately explains their relationship in detail.
3	The student identifies the important information of the situation and states the abstract relationship that explains the general pattern. The student identifies another situation that has the same general pattern and accurately explains their relationship.
2	The student identifies some information about the situation, but the statement of the abstract relationship shows some misconceptions.
1	The student identifies trivial information about the situation. The statement of the abstract relationship shows that the student does not understand the general pattern.
0	Not enough information to make a judgment.

Creating Metaphors Rubric for Younger Students

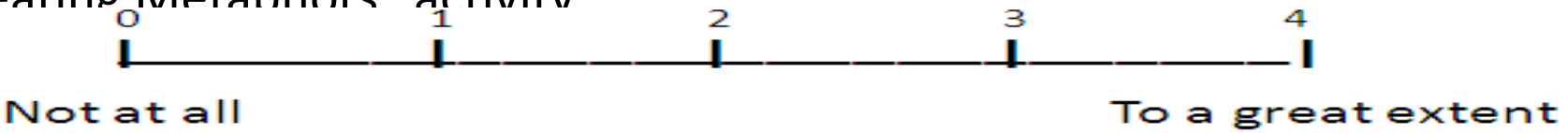
4	The student identifies the important information of the situation in detail. The student tells what the general pattern is. The student finds another situation that has the same pattern. The students explains how the two situations are related.
3	The student identifies the important information of the situation. The student tells what the general pattern is. The student finds another situation that has the same pattern.
2	The student identifies some information about the situation. What the student says about the general pattern has some mistakes.
1	The student identifies information that does not explain the situation. What the student says about the general pattern has some big mistakes.
0	The student does not try to do the task.

Planning for Metaphors Worksheet

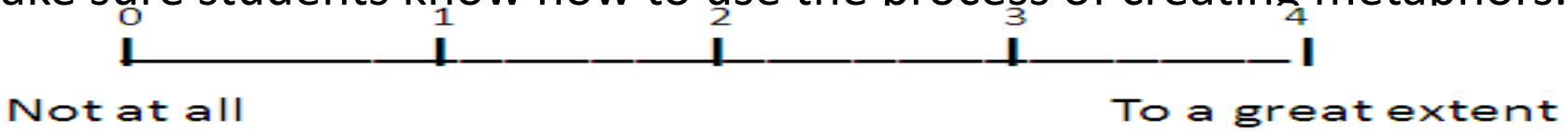
- What knowledge will student be learning?
- Do I need to set time aside to teach students the process of creating metaphors? How will I teach them the process?
- Will I ask students to use a graphic organizer?
- How much guidance will I provide students?
- How will students explain their work and communicate their conclusions?
- How will I monitor how well students are doing with creating and using metaphors?
- What will I do to help students who are not creating and using metaphors effectively?

Assessing Myself-Metaphors

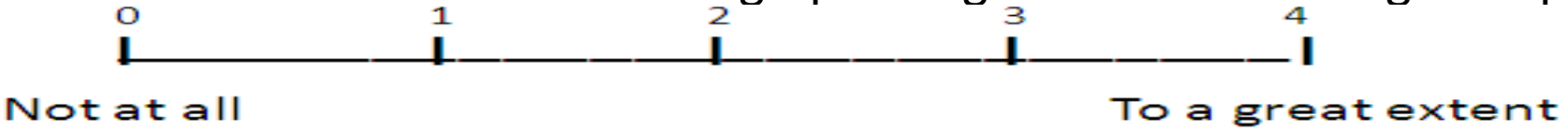
I clearly communicate the knowledge students will use for the "Creating Metaphors" activity



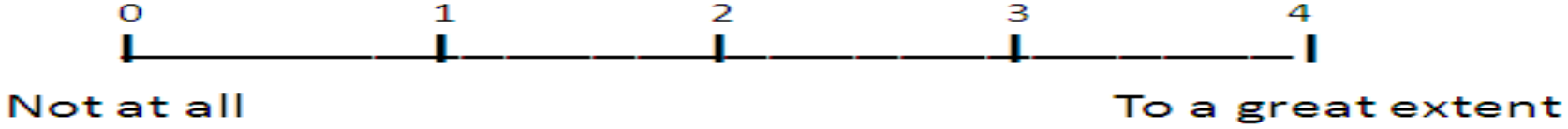
I make sure students know how to use the process of creating metaphors.



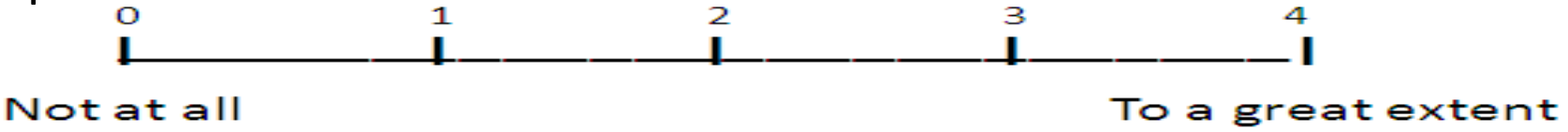
I make sure students understand the graphic organizers for creating metaphors.



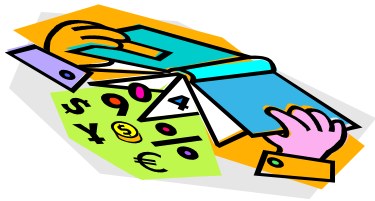
I give students an appropriate amount of guidance for the activity.



Over time, I collect evidence about my student's proficiency at using metaphors.



SIMILARITIES AND DIFFERENCES!



EXIT

- The purpose of this workshop was to _____

_____

According to research, _____

_____

One important detail is that _____

_____

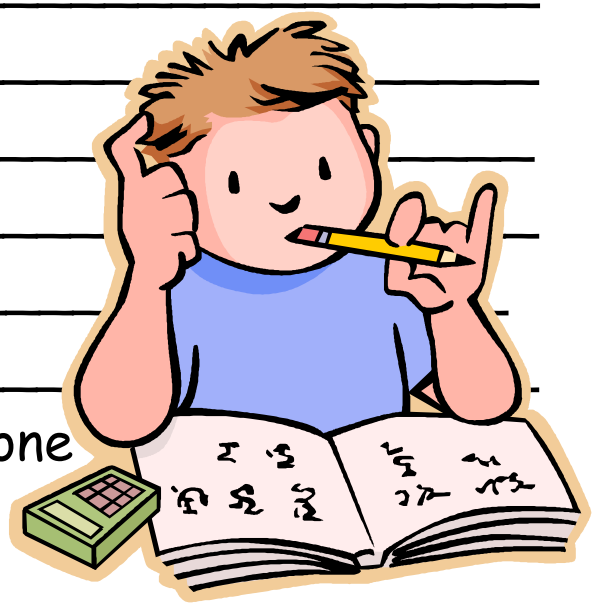
Another important detail is that_____

_____

_____can also be done by_____

_____

In conclusion, _____



Remember we have the opportunity to become a hero to some student every day!