













Cobb County Advanced Learning Strategies

Strategy	Resources	Description
Approximate Analogies	Control, Click 	Complete the second half of an analogy. Given A is to B as X is to Y, the instructor supplies the first half of the analogy (ex. A is to B) and requires the students to analyze the relationship and then respond in kind. This strategy can utilize words, numbers, pictures, and/or symbols.
Categorizing		Sort and categorize a list of relevant vocabulary/terms, pictures, quotes, phrases, math expressions/equations, provided by the instructor. Students must generate category name and provide (written/verbal) justifications for each category. This can be used as an introduction, critical thinking warm-up, flexible / original thinking activity, vocabulary review, justification, perspective exercise, or assessment.
Advanced Graphic Organizers		Synthesize information to provide evidence of learning through the completion of an Outline, Bubble Web, or other appropriate graphic organizer. A graphic organizer may be partially completed in advance for differentiation.
Error Analysis		Analyze a proposed solution to a question or problem for errors and provide written details on how to fix the errors or explain what steps should've been taken to avoid the error. Proposed solutions to be supplied by instructor.
Final View		Explore an article, clarify thinking and have assumptions and beliefs questioned by peers through this group discussion format with the goal of gaining a deeper understanding of the issue.
Move On		Assess readiness level through the completion of a summative assessment task (5 most difficult problems, pre/post-test, performance task). If mastery is demonstrated, students may "Move On" to a more developmentally appropriate assignment or lesson. This is a diagnostic strategy to be used before or during an instructional lesson. It allows more capable students to demonstrate mastery of content/skill before it is taught.
One-Minute Quick Write/Speech		Evaluate and reflect in written format about "the most important thing" learned about a subject, topic, concept or idea. This can be used as a summarization strategy/assessment.
Reverse Problem Brainstorming		Determine all possible reverse solutions when presented with a problem supplied by the instructor. Rather than ask "what is the best way to fix the problem", students will brainstorm "what causes the problem", or "what will achieve the opposite effect of the desired outcome?"
Ready to Order		Rank order information based on different criteria: least to greatest, timeline, level of importance, or preference, etc. Then justify solutions in verbal or written form. This exercise can be used as a teaching, critical thinking, or assessment tool.
Viewpoint Matrix		Use a multi-column matrix/grid to reflect on the perspectives of three different entities by responding to a prompt while examining their relationships with other topics. Example: How would Mother Teresa, Thurgood Marshall, or Steve Jobs interpret a given quote or event? How might these three respond to the issues of poverty, pollution, and information privacy? Students cite evidence to support their interpretations.
What? So What? Now What?		Analyze a topic, quote or question and record thinking in a 3-part chart, "What?" (What happened? What did I observe?), "So What?" (Why is this important to me/my partner?) and "Now What? (What can be done with this information?) This tool provides a structure for critical analysis and also allows for peer collaboration.
Depth of Thinking Assessment		Assess student depth of thinking for any relevant task using the assessment rubric criteria.

Approximate Analogies

Teacher Notes

Instructions for Use:

Complete the second half of an analogy. Given A is to B as X is to Y, the instructor supplies the first half and requires students to analyze the relationship and then respond in kind. This may be applied in any discipline. Students can create different analogies to demonstrate a deep understanding of concepts or terms.

Integration Ideas:

Approximate analogy examples:

Theme is to an essay as _____ is to _____

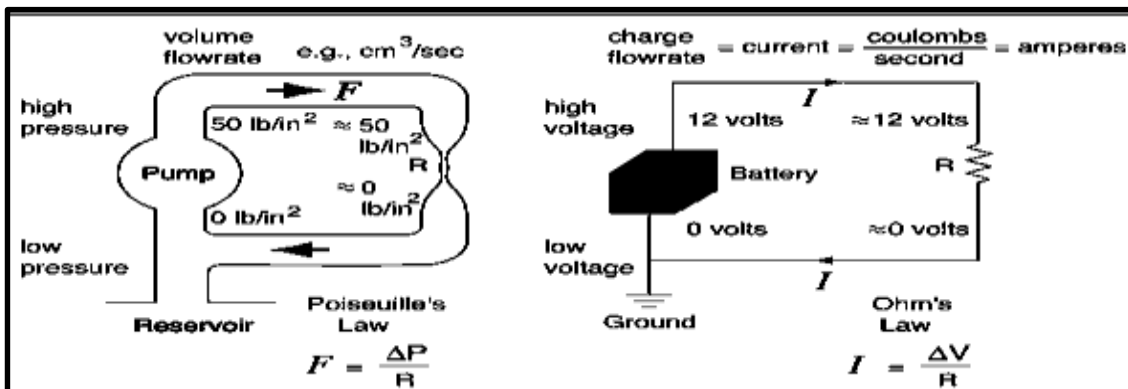
Mass is to volume as _____ is to _____

Science:

- Create abstract analogies from science terms. Write an explanation for each analogy:
 - Bacterial chromosomes are like spaghetti.
 - Blood vessels are like highways.
 - Bohr's model of the atom is like a bookcase.
 - The camera is like the eye.
 - A cell is like a factory.
 - DNA is like a spiral staircase.
 - A nuclear reaction is like falling dominoes.
 - Electricity is like flowing water.
 - The immune system is like the police force.
 - Layers of the earth are like a peach.
 - Building a protein is like building a house.

Mathematics:

- Create analogies from mathematical terms)
 - Cause : Effect = 5 : 25 :: 25 : 625
 - Action : Object = bisect : segment :: prove : theorem
 - Object : Action = equation : solve :: perpendicular : construct
 - Create visual analogies to explain systems:



Name _____

Analogies

Date _____

Directions: Determine the function for each cell feature. Compare the cell to a factory and create a comparative analogy for the function of each feature.

Cell Feature	Function	Factory Analogy
Nucleus		
nuclear membrane		
nuclear pore		
nucleoplasm		
chromosome		
DNA		
Endoplasmic reticulum		
smooth ER		
rough ER		
Ribosome		
r-RNA		
polyribosome		
protein		
Cytoplasm		
m-RNA		
amino acids		
Dictyosome		
Plasmalemma		
exocytotic vesicle		
Lysosome		
Vacuole		
Mitochondria		
oxygen		
ATP		

Name _____

Creating Analogies

Date _____

Directions: The first half of an analogy has been provided. Analyze the first part of the analogy then create a second half to create a complimentary relationship. Write an explanation for each analogy, providing justifications to support your reasoning.

1.

	::	
--	----	--

2.

	::	
--	----	--

3.

	::	
--	----	--

4.

	::	
--	----	--

Categorizing

Teacher Notes

Instructions for Use:

1. Select a main concept in a reading selection.
2. List or Brainstorm:
 - Have students brainstorm all the words they think relate to the topic.
- OR**
- Give students a list of teacher-selected words related to a specific topic.
3. Visually display the list of words.
4. At this point do not critique student responses. Some ideas may not reflect the main concept but students will determine this as they begin grouping the words in the next step.
5. Divide the class into small groups. Individual groups should work to cluster the class list of words into subcategories. As groups of words emerge, encourage students to verbalize their reasoning/justifications for placing words together or discarding them.
6. Groups should develop a category title for each group of words. The titles should relate to the reasoning used to determine groups.
7. Groups should present and justify their final work.

Integration Ideas:

Mathematics:

- Categorize related math vocabulary terms or concepts
- Categorize different word problems
- Categorize shapes, attributes and properties

Literature:

- Categorize words related to the elements of writing or reading
- Categorize quotes from a text or poem that represent literary elements such as foreshadowing, irony, imagery, or personification

Social Studies/History or Science:

- Categorize different historical figures, events or character traits
- Categorize primary and secondary sources
- Categorize historical quotes of political, social, or scientific figures
- Categorize different plant or animal species
- Categorize different scientific elements

Name:

Categorizing

Date:

Directions: Use 3-4 columns of the chart to categorize the items found in the Term Bank based on the meanings or functions of the words. Create a title for each column to accurately describe the characteristics of each category. Write an explanation including justifications for each category.

Term Bank

metaphor

mood

foreshadowing

ode

simile

setting

alliteration

conflict

lyric

hyperbole

ballad

elegy

plot

imagery

personification

irony

Category Title:

Category Title:

Category Title:

Category Title:

Justification:

Justification:

Justification:

Justification:

Categorizing

Name: _____

Date: _____

Directions: Use an appropriate number of chart columns to categorize the quotes in the Quote Bank based on your interpretations of the quotes. Create a title for each column to illustrate the characteristics of the category. Write an explanation including justifications for each category.

Quote Bank

The opposite of bravery is not cowardice but conformity. Robert Anthony	Bravery is the capacity to perform properly even when scared half to death. Omar N. Bradley	Courage and resolution are the spirit and soul of virtue. Thomas Fuller	It takes a great deal of bravery to stand up to our enemies, but just as much to stand up to our friends. J. K. Rowling
It is curious that physical courage should be so common in the world and moral courage so rare. Mark Twain	Have the courage to take your own thoughts seriously, for they will shape you. Albert Einstein	A coward is incapable of exhibiting love; it is the prerogative of the brave. Mahatma Gandhi	I learned that courage was not the absence of fear, but the triumph over it. The brave man is not he who does not feel afraid, but he who conquers that fear. Nelson Mandela

Category Title:	Category Title:	Category Title:	Category Title:
Justification:	Justification:	Justification:	Justification:

Advanced Graphic Organizers

Teacher Notes

Instructions for Use:

Students demonstrate what they have learned about a topic or question by completing an Outline, Bubble Web, Frayer Model or other appropriate graphic organizer within a specified time period.

Teacher may differentiate by partially filling in the organizer.

Integration Ideas:

Literature:

- Compare or justify the use of different literary devices found in a particular text or compare literary devices used by two authors.
- Cite text evidence illustrating a particular character's stance or feeling, or author's motive. Require students to justify or evaluate their thinking.

Social Studies/Science:

- Evaluate the data from two science experiments intended to solve the same problem. Explain why one experiment is more effective than another, provide justifications for evaluation, and provide recommendations for improving the experiment.

Name _____

Date _____

Advanced Graphic Organizer Task - 1

Directions: Complete the outline to show what you have learned.

Topic / Question: _____

I. _____

a. _____

b. _____

c. _____

II. _____

a. _____

b. _____

c. _____

III. _____

a. _____

b. _____

c. _____

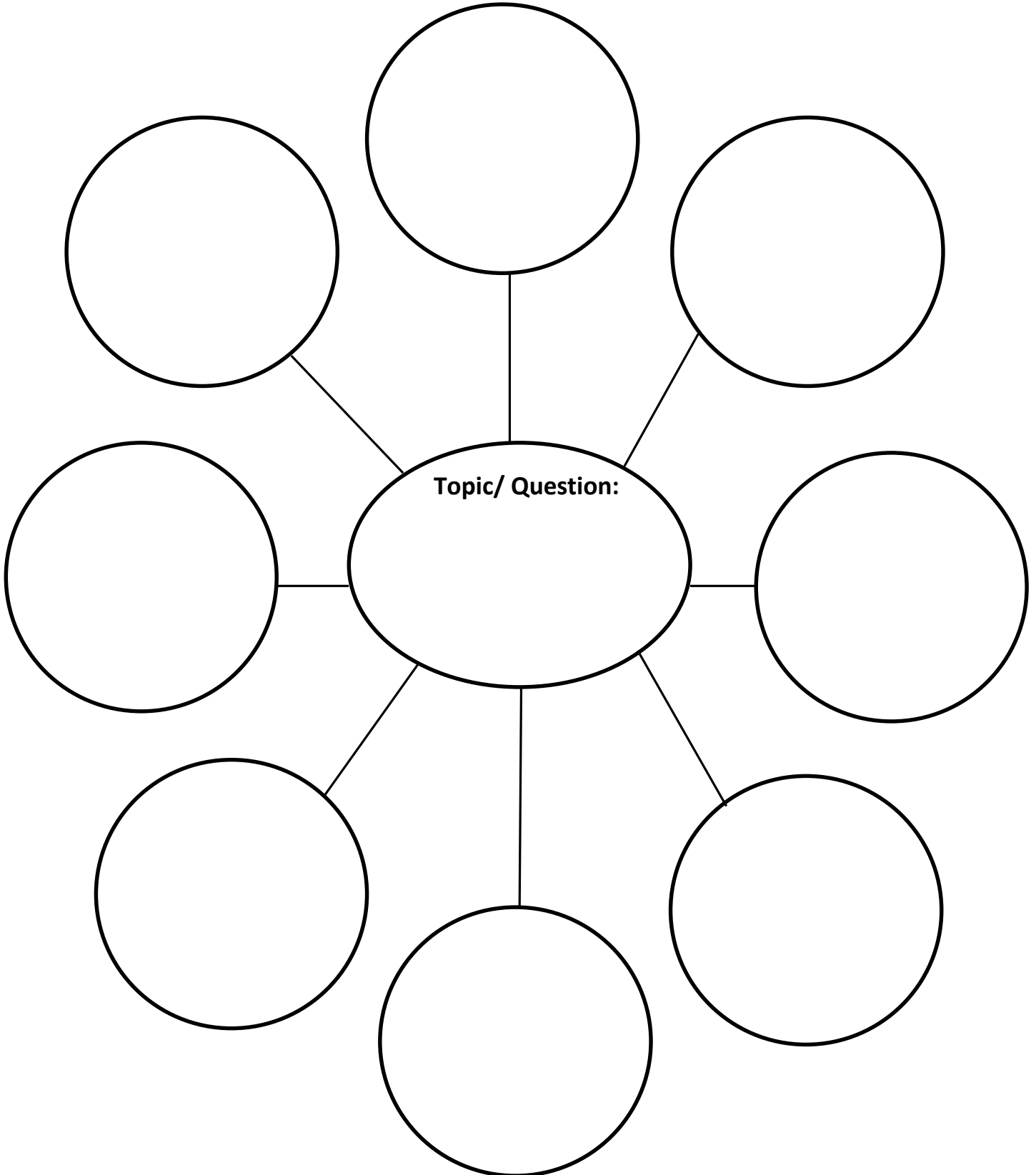
Name _____

Date _____

Advanced Graphic Organizer Task – 2

Show What You Know

Directions: Complete the web to show what you have learned.



Name _____

Date _____

Advanced Graphic Organizer Task – 3

Justify Your Thinking

Directions: Answer the questions provided in each box as they relate to the specific text in the center circle.

<p>Summarize the text/problem:</p>	<p>What does this problem lead you to believe about the people or elements involved? Explain:</p>
<p>Text:</p>	
<p>Why might the author write about this topic? Explain:</p>	<p>Cite text evidence to support your thinking:</p>

Error Analysis

Teacher Notes

Instructions for Use:

The Error Analysis Rubric is to be used to assess a student's ability to accurately assess: student work, teacher made examples, or professional work.

The purpose of this type of assignment is to have students critically examine another piece of work for errors or faulty support and then be critiqued on the accuracy of their assessment.

Integration Ideas:

Literature:

- Assess text for accurate/effective use of literary devices.
- Assess analogies for relationship logic and accuracy. Analogies can be related to specific content or topic such as: mathematical terms or equations, social studies terms, historical relationships between figures and dates or events, science terms or relationships, literary terms or relationships, etc.

Mathematics:

- Assess mathematical problems for accuracy in computation.
- Assess mathematical problems for accuracy in problem solving.

Science:

- Analyze and assess the accuracy of conclusions in science probes, experiments, or methods.

Directions: Read the following case and determine whether the student's conclusions were correct or incorrect. Give a detailed explanation citing textual evidence to justify your determination of why the student's conclusions were correct or incorrect.

The Rusty Nails

Megan had four nails of pure iron. She recorded the total mass of the four dry nails. She put the four nails in a moist, open dish and exposed them to the air for several weeks. Weeks later she noticed the nails were covered with rust. Before she weighed the nails again, Megan predicted that the mass of the dry, rusted nails would be the same as the mass of the dry nails before they rusted because even though the nails had changed in appearance, the number of particles in the nails will remain the same.

Was her prediction correct?

Was there an Error? _____

Explain your thinking: _____

Cite supporting evidence: _____

Name _____

Error Analysis

Date _____

Directions: Look at the following problem and determine whether the student's conclusion/thinking was correct or incorrect. Give a detailed explanation citing textual evidence or strategies to justify your determination of why the student's thinking was correct or incorrect.

The Problem

Was there an Error? _____

Explain your thinking: _____

Cite supporting evidence: _____

Name _____

Date _____

Error Analysis Rubric

Directions: Your task is to use the separate Assignment to complete an error analysis. When you have completed the error analysis, your analysis will be assessed using the following rubric:

Criteria	1 point	2 points	3 points	4 points
Found Errors	Indicated there were no errors and did not identify any errors	Identified a few errors	Identified most errors	Identified all errors
Demonstrates an Accurate Explanation of any Errors	Errors not reasonably explained and/or contained erroneous explanations	Few errors were explained and/or contained some missing or erroneous information	Most errors were explained and explanations mostly complete and mostly accurate	All errors were explained with complete and accurate explanations
Demonstrated Correct Answer	Errors not accurately corrected	Few errors accurately corrected	Most errors accurately corrected	All errors were accurately corrected
Points Earned				
			Total Points	

Assignment Points Earned	0 - 7	8 - 9	10	11 - 12
Grade	F-D	C	B	A
Progress Toward Meeting Assignment Expectations	Does Not Meet Assignment Expectations	Limited Progress Toward Meeting Assignment Expectations	Consistent Progress Toward Meeting Assignment Expectations	Successfully Meets Assignment Expectations

Comments:

Final View

Teacher Notes

Instructions for Use:

The purpose of this discussion format is to give each person in the group an opportunity to have their ideas, understandings, and perspective enhanced by hearing from others. With this format, the group can explore an article, clarify their thinking, and have their assumptions and beliefs questioned in order to gain deeper understanding of the issue.

Follow Directions found on the following Final View – Teacher Directions page.

Integration Ideas:

Mathematics:

Literature:

Science/Social Studies:

Final View

Teacher Directions

Instructions for Use:

Roles: Facilitator/ timekeeper (who also participates); 3-4 additional group participants

Facilitation: Have each participant identify one "most" significant idea from the text (underlined or highlighted ahead of time), stick to the time limits, avoid dialogue, have equal sized groups so all small groups finish at approximately the same time.

Process:

1. Sit in a circle, and choose a facilitator/time-keeper.
2. Each person needs to have one "most" significant idea from the text underlined or highlighted in the article. It is helpful to identify a "back-up" quote as well in case someone in the group shares your first quote.
3. The first person begins by reading what "stood out the most" for that person from the article. Have this person refer to where the quote is in the text – one thought or quote only. Then in less than 3 minutes, this person describes why that quote struck him or her. For example, why does s/he agree/disagree with the quote, what questions does s/he have about that quote, what issues does it raise for him or her, what does s/he now wonder in relation to that quote?
4. Continuing around the circle each person responds to that quote and what the presenter said, briefly, in less than a minute. The purpose of the response is:
 - To expand on the presenter's thinking about the quote and the issues raised for him or her by the quote,
 - To provide a different look at the quote,
 - To clarify the presenter's thinking about the quote, and/or
 - To question the presenter's assumptions about the quote and the issues raised (although at this time there is no response from the presenter).
5. After going around the circle with each person having responded for less than one minute, the person that began restates his/her "final view" or states his/her revised "final view." In no more than one minute the presenter responds to what has been said. Now what is s/he thinking? What is his or her reaction to what s/he has heard?

Name _____

Final View

Date _____

Discussion Notes

Directions: Follow the directions in each box to guide you as you present the quote from the article that **"stood out the most"** to you.

Write all or part of the quote here: _____

Found on page # _____

Write a quick note about any comments you want to respond to here:

1. _____
2. _____
3. _____
4. _____

Tell if your thinking has changed or been clarified, and if so, how? If not, why? _____

Move On

Teacher Notes

Instructions for Use:

Use this strategy to identify students who have achieved a level of mastery within a subject matter, specific skill or concept and are ready to "Move On". These students would benefit from an independent study project or extension activity.

Student may be assessed at any time before or during the instructional session.

Using the "Move On" Strategy could look like:

1. (Before the Unit) Pre-Tests: Allow those students who complete the pre-test and receive above 85% (or percentage determined by teacher) the opportunity to opt out of the lesson and into an extension activity.
OR
2. (During the Unit) Most Difficult First: Present students with a shortened test of the 5 hardest problems from the current unit of study. (Teacher will set the desired number of correct responses, typically above 85% but does not have to equal 100% to achieve mastery.)
OR
3. (Before or During the Unit) Present students with a complex real-world task related to the subject/concept along with a rubric to outline the expectations. Allow students who successfully complete the performance task to "move on" to the extension activity.

Integration Ideas:

Possible performance tasks could include a variation of the following:

Mathematics:

- Create a visual diagram to delineate the hierarchy of two dimensional figures based on their properties.

Social Studies, History, Geography:

- Build digital map or visual diagram to demonstrate knowledge of specific locations within a foreign country.
- Create a digital product (mini movie/photostory/cartoon) to report on the specific historical events and their relevance.
- Write a letter from the viewpoint of a person set in a historical period providing a recount of their experience.

Science:

- Create an Educreation (or use similar digital media) to create a tutorial explaining a scientific process ex: the effects of physical processes plate tectonics, erosion, deposition, volcanic eruption, gravity on geological features).

One Minute Quick-Write

Teacher Notes

Instructions for Use:

The One-Minute Quick-Write can be used as a summarization strategy for a quick assessment. This strategy will allow students to quickly reflect on “the most important thing” they have learned about a subject, topic, concept or idea **OR** to present an argument for or against a topic.

Tell students they will be given one minute to deliver a speech on a given topic. Give students a topic to reflect upon using one of the prepared Quick-Write templates or a format of your own. Tell students they have 10 minutes to quickly write a speech about what they know about a topic **OR** to present an argument for or against a particular issue.

This strategy can be differentiated by providing questions or subject matter of varying levels of depth or complexity.

The idea behind this strategy is for students to write from what they have learned. This is not a research project but students can use any notes or information they have taken in class.

Integration Ideas:

- Have students take a position on a particular science topic – is it useful, safe, irresponsible?
- Have students debate a law or societal restriction from the perspective of two different governments.
- Have students argue a position from the perspective of a character.
- Have students write what they know about using a particular mathematics concept or strategy.
- Have students explain what they understand about a new mathematics strategy or science theory.
- Have students argue for a particular strategy over another.
- Have students argue or state a point of view from the perspective of a particular mathematics term – Why are exponents like rabbits? Why are prime numbers better than composites? Why are odd numbers more interesting than evens?

One-Minute Quick Write – In My Opinion

The One-Minute Quick-Write is a great way to practice public speaking or convey information to any audience by writing a short paper or speech. The goal of this work is to deliver information that is focused, well supported, and written for a specific audience.

Follow these steps to inform your audience:

<p>1st – Thank your audience for reading or listening to your paper or presentation.</p>	<hr/> <hr/>
<p>2nd - Summarize the issue or topic and introduce any relevant information.</p>	<hr/> <hr/> <hr/> <hr/>
<p>3rd - State your position on the topic. What is your argument?</p>	<hr/> <hr/> <hr/> <hr/>
<p>4th - Support your ideas with evidence and supporting details.</p> <ul style="list-style-type: none">- Support should be credible (true and believable) and convincing.- Use a variety of appeals (logical, ethical, and emotional).	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>5th - Conclude with a summary of your main points. Restate your point of view on the topic and explain why your ideas are worth considering.</p>	<hr/> <hr/> <hr/> <hr/>

One-Minute Quick Write – What I Know

The One-Minute Quick-Write is a great way to practice public speaking or convey information to any audience by writing a short paper or speech. The goal of this work is to deliver information that is focused, well supported, and written for a specific audience.

Follow these steps to inform your audience:

<p>1st – Thank your audience for reading or listening to your paper or presentation.</p>	<hr/> <hr/>
<p>2nd – Introduce the topic.</p>	<hr/> <hr/> <hr/>
<p>3rd – Tell what you have learned about the topic.</p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p>4th – Tell what the most important thing you learned about the topic.</p>	<hr/> <hr/> <hr/> <hr/> <hr/>
<p>5th – Tell the thing you understood least about the topic OR what aspect of this topic you'd like to learn more about.</p>	<hr/> <hr/> <hr/> <hr/> <hr/>

Reverse Problem Brainstorming

Teacher Notes

Instructions for Use:

This strategy can be used to challenge students to think creativity when researching possible solutions to a presented problem (currents/historical event, social, political, environmental issue, etc.). This can be useful with topics that may be more difficult to generate ideas with traditional brainstorming techniques. Students may use this technique while working independently or in collaborative groups.

This technique combines brainstorming and problem solving in reverse order. When using Reverse Brainstorming you start with the question "What could cause this problem?" rather than "How do I solve this problem?" Using this process, unique solutions are uncovered by looking for the opposite effect.

Steps to Reverse Problem Brainstorming:

- 1) Clarify the problem.
- 2) Reverse the problem by asking:
 - a. How could this problem occur?
 - b. How can we achieve the opposite effect?
- 3) Brainstorm multiple reverse solutions or ideas. During the brainstorming process:
 - a. Work quickly.
 - b. Generate many ideas.
 - c. Piggyback onto others' ideas (*listening to others is essential*).
 - d. Defer judgment.
- 4) Apply one of the proposed reverse solutions or ideas to the original problem.
- 5) Evaluate the solutions. Can the solutions be adjusted or modified to potentially solve the original problem?

Integration Ideas:

- Use when evaluating different social, political, environmental issues or current events for potential solutions.
- Use when trying to improve upon a current process, procedure, or method (scientific, business, social, etc.)
- Use when evaluating laws and ordinances for possible changes or improvements.
- Use when evaluating mathematical processes best suited to solve a particular problem.

Reverse Problem Brainstorming Example

Original Problem: The school newspaper must increase distribution by 25 percent within three months to cover escalating printing and distribution costs. What can the team do to increase the distribution of the school newspaper by 25 percent?

Reverse Problem: What can the team do to decrease the newspaper’s distribution of the school newspaper.

Reverse Solution or Ideas:

- Publish poorly written articles.
- Be late with the publication or publish irregularly.
- Use ink that rubs off on clothing.
- Put the publications in obscure locations.
- Publish stories that students don’t care about.

When the brainstorming runs its course, determine how each of the reverse (or undesirable) solutions could be viewed as a solution for the original problem. Reverse problem brainstorming is an excellent creative thinking and critical reasoning technique that can lead to fun, robust conversations and unique solutions.

Reverse Solution	Solution to Original Problem
Publish poorly written articles.	Ensure that the writing of the articles is top notch.
Be late with the publication or publish irregularly.	Ensure the publication is distributed on a routine/expected date.
Use ink that rubs off on clothing.	Publish the paper online.
Put the publications in obscure locations for students.	Create an “app” for students’ smartphones or tablets so the news is easily accessible.
Publish stories that students don’t care about.	Publish stories that are relevant to the student population, are of high interest, and/or include articles about students in the school.

Ready to Order

Teacher Notes

Instructions for Use:

Ready to Order is an evaluative thinking exercise that can be used as a whole group, small group, or independent activity where students work silently to rank order different elements based on specified criteria. This activity can be used with any topic and can require students to order things by: level of importance, level of impact, greatest to least, by date or time, alphabetical order, sequential order, or other specified criteria. The items that are being ordered can be written on index cards, sentence strips, or craft sticks (tongue depressors). The level of challenge can be varied by changing the number or items to be ordered, the ordering criteria, or the complexity of the content.

Whole group discussions should follow this activity. Students working independently or in small groups should present their evaluations to the whole class citing justifications for their decisions. Peers should provide critical feedback to the presenters. As an alternative, justifications can also be expressed in written format as directed by the teacher.

Integration Ideas:

Mathematics:

- Order by place value
- Order fractions or decimals, or a mixture of both
- Order equations by variable value
- Order problem solving processes

Literature:

- Order the writing process using examples
- Order sequence of events in a story
- Order events within a story by level of importance
- Order characters based on prominence of a character trait

Social Studies/Science:

- Order events(historical/scientific) by level of importance or impact on a society/culture

Ready to Order

Teacher Directions

1. The object of the exercise is to put things in order. The teacher will set the criteria beforehand which could include ordering by: level of importance, greatest to least, least to greatest, first to last, value of a variable, sequential order or any other predetermined order. This is a great exercise of strategy and a useful way to assess understanding.

As a collaborative grouping/whole class exercise, this works best if students are seated on the floor for ease of student movement.

2. Write the elements to be ordered (numbers, problems, words, vocabulary terms, events etc.) on index cards, sentence strips large enough for your students to read from a distance of about 3-4 feet.
3. Using masking tape put two parallel lines about 3-4 feet apart and 12-14 feet long on the floor. Put 13 dots of masking tape (*number of dots will depend on the number of different elements you will be including*) in a parallel line between the two lines, spacing the dots evenly from one end of the two parallel strips of masking tape. There should always be one more dot than the number of items to be ranked or ordered, for example, if you have 12 words you should have 13 dots.

Ex: _____
 - - - - -

4. Draw a large **X** on a dry erase board.
5. Explain to your students that they may not make a sound, body movement, or motion while the **X** is on the board. If they need to speak they must raise their hand and wait until the **X** is erased. Explain that they must be absolutely "stone faced" during the entire exercise so that other students do not get clues from their facial expressions.
6. Put the index cards to be ordered on each piece of tape leaving one piece of tape uncovered.
7. Explain to the students that they are to put the cards in order based on the provided criteria. Tell them they may only move one card per turn to an empty space on the provided dots. They are only allowed to touch one card. They must move the card they touch to an empty space. They cannot flip places with another card as this makes the exercise more difficult. Once they touch a card they must move that card.
8. The exercise is over when all of the cards are in order without any empty spaces between the cards (the empty space must be the last piece of tape), and the student whose turn it is announces that the information is in order and they are finished. The teacher must then agree that the exercise is finished or the student should continue ordering the cards.

As an independent exercise, students will work silently at their desks.

1. The same steps noted above can take place at the student's desks, however students will work independently with smaller size cards and record their rank order and written justification on a recording sheet. Whole class discussions can take place and students may debate their ideas as they compare/contrast their different rank order solutions.

Viewpoint Matrix

Teacher Notes

Instructions for Use:

The Viewpoint Matrix provides students with an opportunity to interpret the viewpoints of others as they relate to a specific topic, current event, or quote and analyze the relationship with 2-3 other variables. An example has been included to further illustrate the Viewpoint Matrix. Students may be required to use existing background knowledge from the unit/lesson or conduct new research to support their thinking.

Part 1: Reflect on the following statement/quote/question:			
<i>During the time of European exploration, what was the attraction of North America for these Europeans?</i>			
Topic	Viewpoint #1: British	Viewpoint #2: French	Viewpoint #3: Spanish
Wealth	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
Human Rights	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
Religion	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
Part 2: Describe any similarities between the three viewpoints for each topic and explain why the similarities are significant.			
<hr/> <hr/>			

1. Teacher will use the top box of the Viewpoint Matrix to provide students with a prompt to reflect on:
 - a. a "what-if" thought-provoking statement related to the current unit of study
 - b. a famous quote
 - c. a modern day problem (social, political, environmental issues, etc.)
2. Use the "viewpoint columns" (2nd, 3rd & 4th) to insert the names of three different people, entities, or objects. Enter one person, object, or entity per column. (*Ex: different people-historical figures or living, cultures, countries, professions, or organizations, etc.*).
3. In the "topics column" teacher will include three different topics to be considered from the perspective of each of the three given viewpoints.
4. Students write about each topic from the perspectives of each viewpoint specified by the teacher.
5. Students use box in Part 2 to report any significant similarities between the viewpoints.
6. Use this strategy at the end of lesson as a summarization tool for assessment, or throughout the unit as a note-taking tool / study guide.

Viewpoint Matrix

Teacher Notes (Cont.)

Integration Ideas:

Mathematics:

- Analyze the relevance of mathematical concepts from various perspectives.
 - ex: How does accuracy in measurement affect: athletes, architects, chemists?
 - ex: From the perspective of length, width, or height, which is more important in determining volume?
 - ex: From the perspective of each, which shape is most useful: circle, square, triangle?

Literature:

- Analyze the viewpoints of multiple characters in relation to their involvement or interest in the main plot or problem.
- Analyze three different poet/author's point of view on a historical event/topic.
 - ex: social injustices, immigration, love, nature, war, westward expansion, Industrialization

Social Studies:

- Analyze the viewpoints of historical figures, present day people of interest, career fields and professions, cultures, businesses, etc.
 - ex: How might water pollution impact the future life of: a child from the United States, a child from Kenya, a child from India?
 - ex: How do world governments view nuclear disarmament?
 - ex: How did various key figures view the colonists' decision to forgo paying taxes?

Science:

- Analyze the viewpoints of different theorists, scientists, or even living organisms
 - ex: How might a change in energy flow play a role in the life cycle of: fungi, rabbits, humans?
 - ex: Explore viewpoints of prospective parents, doctors, and scientists on whether science should be used to select specific traits for a baby
 - ex: What are the perspectives of various human organs on the effects of exercise or the ingestion of fast foods?

Name _____

Viewpoint Matrix- Example

Date _____

Directions:

Part 1: Write about each of the three topics from the viewpoint of each person, object, or entity.

Part 2: Describe any similarities between the three viewpoints for each topic and explain why the similarities are significant.

Part 1: Reflection		
<i>During the time of European exploration, what</i>		
<i>Topic</i>	Viewpoint#1: British	Viewpoint #2:
Wealth	_____ _____ _____	
Human Rights	_____ _____ _____	
Religion	_____ _____ _____	

Part 2: Describe any similarities between the three viewpoints for each topic and explain why the similarities are significant.

Name _____

Viewpoint Matrix

Date _____

Directions:

Part 1: Write about each of the three topics from the viewpoint of each person, object, or entity.

Part 2: Describe any similarities between the three viewpoints for each topic and explain why the similarities are significant.

Part 1: Reflect on the fo

Topic	Viewpoint#1:	Viewpoint #2:
	<hr/> <hr/> <hr/>	
	<hr/> <hr/> <hr/>	
	<hr/> <hr/> <hr/>	

Part 2: Describe any similarities between the three viewpoints for each topic and explain why the similarities are significant.

What? So What? Now What?

Teacher Notes

Instructions for Use:

The purpose of this strategy is to allow students an opportunity to delve deeper into a subject, topic or current event ("What?") with the responsibility of outlining potential causes for the problem ("So What" or "Why is this important for people to know?") along with creating reasonable ideas for resolving the problem ("So, Now What?").

This strategy can be used independently or with partners/small group to gather peer feedback.

1. Provide student with the **What? So What? Now What?** handout. This should include a teacher provided or student selected question or topic to consider. Student questions should be approved by the teacher.
2. **What?:** Students will use the first column of the chart, **What?**, to begin outlining the problem/question they are researching.
3. **So What?:** Students will conduct initial research to identify the relevance of the problem or question. They will fill in the **So What?** section of the chart with the potential causes or consequences. In this area, students will record the critical reasons that make this topic important for others to know and understand.
4. **Now What?:** In order to complete the third section of the chart, students can work independently or with partners/small groups to help each other identify the next steps. This portion can be done silently or aloud. Students will record the collected feedback for solutions to the problem in the **Now What?** section.

Integration Ideas:

Mathematics:

- Explore complex word problems

Literature:

- Analyze a problem in a story
- Predict possible problem outcomes and solutions in a story
- Create alternate events or endings for a story

Social Studies/Science:

- Organize independent study questions
- Explore current events, social issues, scientific controversies
- Evaluate new concepts, inventions, and technological advances
- Read text/article/etc. describing a historical event then rewrite the What? So What? Now What? to produce an outcome different from what actually transpired.

What? So What? Now What?

Questions to Consider

Topic/Question:		
What?	So What?	Now What?
What happened? What are the facts? What does the text selection say?	Why is this important to me? Why is this important to my partner? To Society? What does the data mean? What can I infer from this statement? What do I think the text means? What conclusions can be drawn from this information?	What recommendations can be given based on the facts and my conclusions? What can be done differently? More Effectively? What next steps should be taken?

What? So What? Now What? Examples

Topic/Question: What if Great White Sharks Become Extinct?		
What?	So What?	Now What?
<p>Great White Sharks are caught in fisherman's nets.</p> <p>Great White Sharks are killed for the use of their meat and fins in a delicacy "Shark Fin Soup"</p>	<p>A loss in the population of Great White sharks impacts the marine life food chain and can create overpopulation of prey species.</p> <p>This may also negatively impact other food sources.</p>	<p>Additional laws may need to be written to further restrict commercial fishing industry.</p> <p>Increase level of punishment for hunting Great White Sharks.</p> <p>Increase support for Great White Shark Conservation programs/groups.</p> <p>Increase public awareness of the issue.</p>

Topic/Question: What is the significance of this quote?		
What?	So What?	Now What?
<p>Chapter 3: excerpt of a conversation between Atticus and Scout.</p> <p><i>"You never really understand a person until you consider things from his point of view . . . until you climb into his skin and walk around in it."</i></p>		

Name _____

Date _____

What? So What? Now What?

Directions: 1. Write the topic or question in the **What** column. 2. Write the identified problem or consequences in the **So What?** column. 3. Write possible solutions or next steps in the **Now What?** column.

Topic/Question:		
What?	So What?	Now What?

Name _____

Project: _____

Depth of Thinking Assessment

Thinking Criteria	0	1	2	3	4	5
Question Posing	Does not pose a question OR Poses an irrelevant question	Poses a simple question OR Poses a question that is easily answered		Poses an open-ended relevant question		Poses an open-ended complex question of high relevance
Gathering Relevant Data	Does not gather data	Gathers data that is biased, inaccurate, unreliable, irrelevant, erroneous, or assumptive		Gathers data that is free of bias, error, and assumption; accurate; reliable; and relevant		Gathers data that is free of bias, error, and assumption; accurate; reliable; relevant; and articulated how the information can assist in answering the question.
Effective Interpretation of Data	Does not interpret the data	Data interpretation is inaccurate or incorrect, unsupported,		Data interpretation is free of bias, error, and assumption; accurate; reliable; and relevant		Data interpretation is free of bias, error, and assumptions; accurate, reliable, and demonstrates a use of logic, facts, graphs, questions, theories, etc.
Impartially Considers Information, Thoughts, and/or Ideas	No consideration for other points of view, thoughts, and/or ideas	Expresses a narrow point of view or a view that is irrelevant or lacks a depth of understanding of other points of view, thoughts, and/or ideas		Expresses a point of view that is relevant, displays a depth of understanding of other points of view, thoughts, and/or ideas		Expresses an appropriately broad point of view or one that is significantly relevant and fairly articulates a deep understanding of other points of view, thoughts, and/or ideas
Develops Well-reasoned Conclusions or Solutions Based on Information Presented	Makes no inference based on the information presented and does not offer a conclusion or solution	Makes inaccurate, illogical, implausible inferences based on the information presented and offers untested and/or unsupported conclusions		Expresses accurate, logical, plausible inferences based on the information presented and offers attainable, tested, and/or supported conclusions		Clearly and precisely articulates accurate, logical, plausible inferences based on the information presented and offers well-grounded conclusions or solutions that are attainable, well-tested, and/or based on a significant standard of judgment
Uses Effective Communication when Working with Others to Solve Problems	Does not coherently communicate ideas or implications, and/or does not work collaboratively to solve problems	Is unclear when communicating ideas and implications, and is inconsistent in working collaboratively to solve problems		Is clear and articulate when sharing ideas, implications, and personal line of thinking, and works well collaboratively to solve		Is clear and precise when explaining or expressing ideas, implications, and personal line of thinking, and always works well with others to solve problems

References

Cash, R. M. (2011). *Advancing Differentiation: Thinking and Learning for the 21st Century*. Minneapolis, MN: Free Spirit Publishing Inc.

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