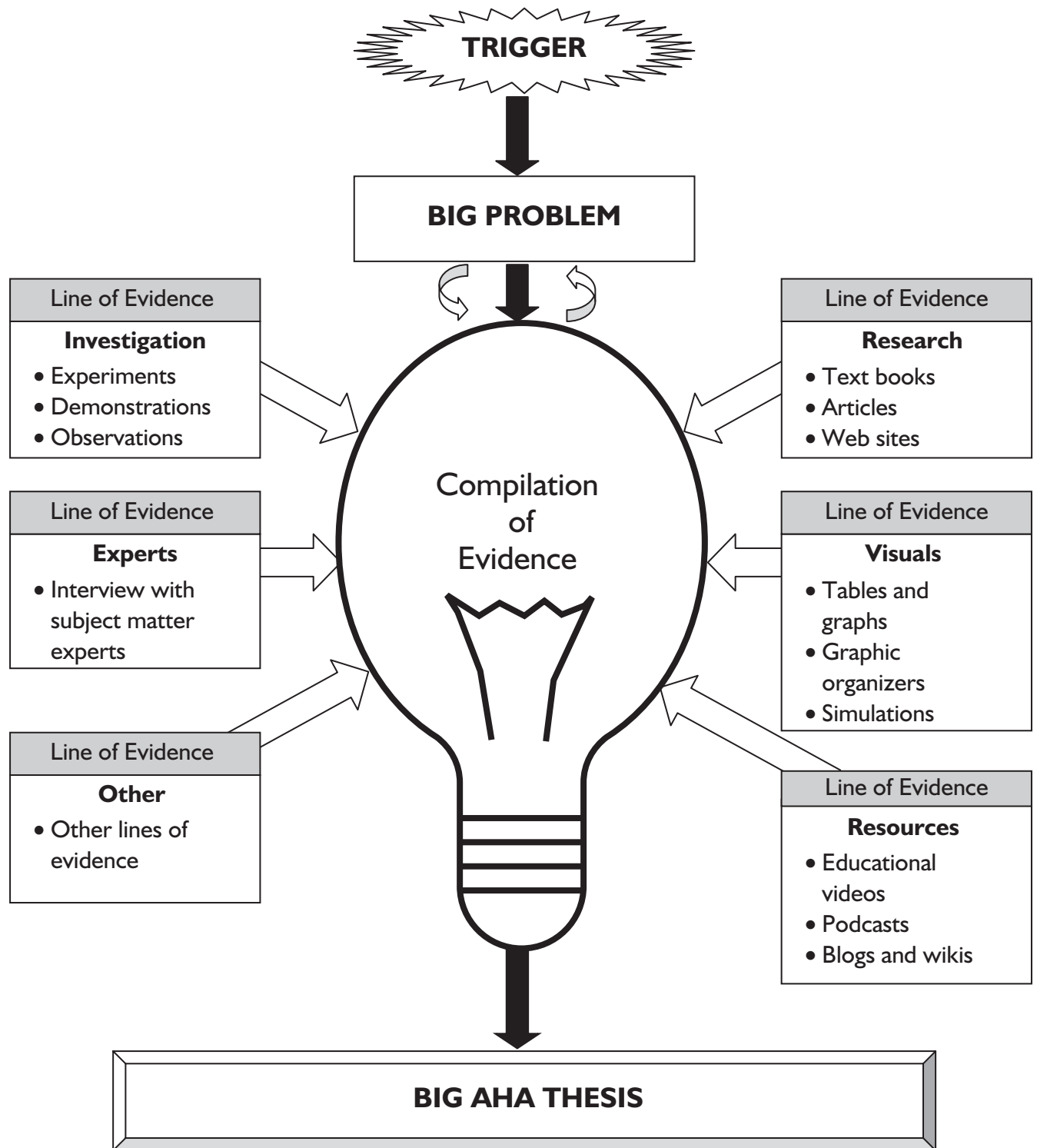


Science Notebook Rubric	
10	"Totally Awesome" (Almost Gross) <ul style="list-style-type: none"> ✓ The writing goes beyond the basic requirements and shows in-depth understanding of concepts. ✓ The work shows in-depth reflection throughout the learning process. ✓ Your notebook has all the components expected, including dates and labels on each page. ✓ All pages are numbered properly with odd numbers on the right and even numbers on the left. ✓ Right- and left-side work is correctly organized with all criteria. ✓ The use of color and labeled diagrams enhance understanding. ✓ The notebook is so tidy it's almost "gross!"
9	"Awesome" <ul style="list-style-type: none"> ✓ The writing follows the basic requirements, shows understanding of concepts, but does not go beyond. ✓ The work shows in-depth reflection. ✓ Your notebook has all the components expected, including dates and labels on each page. ✓ All pages are numbered properly with odd numbers on the right and even numbers on the left. ✓ Right- and left-side work is correctly organized with all criteria. ✓ The notebook has color, and the student uses labeled diagrams. ✓ A "9" looks much like a "10," but it lacks the "totally" in "awesome."
8	"Pretty Darn Good" <ul style="list-style-type: none"> ✓ The written work shows a basic understanding of concepts. ✓ An honest reflection, but limited. ✓ Your notebook has about 90% of the components expected, with dates and labels. ✓ All pages are numbered properly with odd numbers on the right and even numbers on the left. ✓ Right- and left-side work is correctly organized. ✓ The notebook has some color and diagrams, with a few labels. ✓ Some requirements are met, but your notebook lacks criteria in all areas.
7	"Kick It Up a Notch" <ul style="list-style-type: none"> ✓ The written work shows a limited understanding of concepts. ✓ Limited reflection overall. ✓ Your notebook has about 80% of the components expected, with dates and labels. ✓ Most pages are numbered. ✓ Right- and left-side work is fairly organized, "just so-so." ✓ The notebook has very little color and hardly any diagrams. ✓ Notebook requirements are rarely met.
6	"Better Get Movin'" <ul style="list-style-type: none"> ✓ The written work shows misconceptions and a lack of understanding. ✓ "Reflection, what reflection?" ✓ The pages in your notebook are unfinished. ✓ You tried, but the dates and labels did not make it to the page. ✓ There are inconsistencies in your right- and left-side entries. ✓ The notebook is unorganized, and "the dog ate your pages."
0	"What Were You Thinking?" Hey, you turned in a notebook, but the pages are blank, or they include the class template only.

Aha Connections Visual Outline



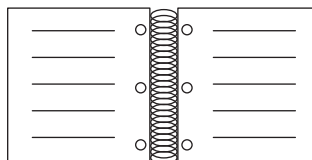
Reproducible 2

Constructing the Aha Connections Pages

The Aha Connections pages are located at the beginning of each new unit in your Interactive Notebook.

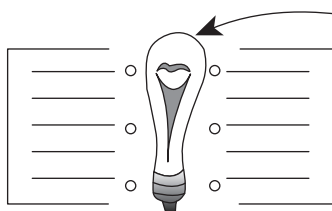
First

Two side-by-side pages



Second

In the center, or close to it, write your problem statement or big idea.



e.g., "What is an interaction?"

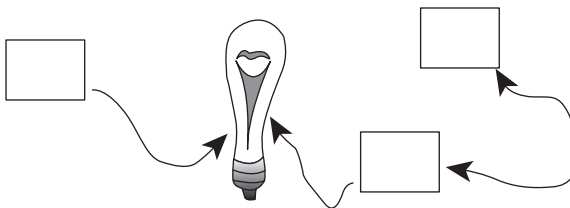
Third

After each class activity, you will be asked to write a statement that conveys the concept learned.

For example: "Today we learned that you can never obtain an exact value, but you can get very close. Scientists call this 'best value.'"

Fourth

- Take time to share out with a partner!
 - Notice trends or connections!
 - Use arrows or color to show those trends or connections visually!
- "Did this lab connect to the Big Aha problem, to another lab, or both?"



Last

Use these statements as evidence and stems to later write your aha thesis.

Reproducible 6

How to Write an Aha Connections Thesis

What is an aha connections thesis?

It is a thesis paper, generated by you, that addresses the Big Aha or big problem of the unit, using evidence gathered along the way.

1. Let's get started by gathering what you need.

- Go back to the aha connections pages in your interactive notebook.
- Look for the key ideas or concepts you identified from the unit.
- Which lines of evidence best support these key ideas?
- You are now going to use these lines of evidence in your thesis to support your key points.

2. Now, begin by writing your introductory paragraph.

Introductory paragraph:

State the purpose of the unit and the key ideas and concepts learned.

(Hint: That's what you just identified in the four bullets above.)

3. Now you are ready to write the body of your thesis.

Body paragraphs of the thesis (usually three to five paragraphs):

In each of the following paragraphs, give details on one of the key ideas chosen from above.

Use your lines of evidence from your aha connections pages to support your thinking.

(Hint: There is no need to reinvent the wheel; use your own words from the aha connections pages in your interactive notebook.)

4. You are almost there—time to wrap it up.

Final paragraph—conclusion:

- Restate your purpose from the thesis statement.
- Give your thesis the “Hollywood” wrap up.
- Leave a final impression on the reader.

Interactive Notebooks *The Left Side*

The left page demonstrates your understanding of the information from the right side page. You work with the input and interact with the information in creative, unique and individual ways. The left side incorporates and reflects how you learn science as well as what you learn in science. Strategies that will help focus your attention and guide your learning of the science content and concepts are listed below.

What goes on the Left Side? Output goes on the left side! Items include:

Brainstorming	Metaphors & analogies	Significant statements
Discovery headline	Venn Diagrams	Flow charts
Biography posters	Data & graph you generate	Graphic organizers
Concepts maps	Analysis writing	Drawings
Riddles	Reflection writing	Writing prompts
Your questions	Quick write	Poetry and songs
Pictographs	Mnemonics	Other creative avenues for processing information
Cartoons	Four - square analogies	

Things to know about Left Sides

- ❖ Every left side page gets used
- ❖ Always use color...It helps the brain learn and organize information
- ❖ Quizzes and tests are left side items
- ❖ Homework problems are left sides (but they don't take the place of processing your notes!)

The Clock Questions- 12 Study Strategies

1. Write a science fiction story
2. Paraphrase this information into 2 sentences
3. Create and solve original problems
4. Write four "What if..." statements about this topic
5. Create a visual illustration explaining this information
6. Write a letter to _____ about this topic.
7. Compare & Contrast 2 or more ideas with a Venn Diagram
8. Create a concept map to show the relationships within the topic
9. Make vocabulary cartoons from this topic
10. Explain the application of this information to a real life person
11. What more do I want to learn about this topic?
12. What is my plan to learn this information?

Adapted from Karen Molloy



Interactive Notebooks *The Right Side*

Interactive notebooks will be used in this class daily to help you learn and remember important scientific concepts. Why do they work? This notebook style uses both the right and the left brain Hemispheres to help you sort, categorize and remember and creatively interact with the new knowledge you're gaining. The more you process information the more you begin to understand it. This leads to longer retention.

What goes on the Right Side? Input goes on the right side!

Input is all the information you are supposed to learn. Examples are:

Thrilling notes; lectures; guest speakers; text or other sources; vocabulary words; video and film notes; teacher questions; readings; questions and answers; and sample problems.

- ❖ Always start the page with the date and title at the top of the page.
- ❖ Right sides have odd numbered pages.
- ❖ The right page is for writing down information you are given in class.
- ❖ Use Cornell style notes for lecture, discussion, text, etc. Write up your study questions as soon as possible.
- ❖ Write legibly. Use highlighting color for important information.
- ❖ Write summaries at the bottom of each page of notes to reduce the amount you have to study.

Sample Cornell Style Notes without the Summary

Title: What is Biology?	Travis Godkin Biology 1	September 5 Period 4
Definition of Biology	<ol style="list-style-type: none"> a. Biology is the study of life b. All living things do/have the following: <ol style="list-style-type: none"> a. Made of Cell b. Genetic Organization (usually DNA) c. Homeostasis- keeping stable internal conditions d. Reproduce e. Growth c. Cell Theory <ol style="list-style-type: none"> a. All living things are made of 1 or more cells b. Cells are the basic unit of structure and function c. All cells come from pre-existing cells 	
5 Characteristics of life		
Cell Theory		

Adapted from Karen Molloy

The Twelve Most Important Words

Word	Short phrase
1. Trace <i>Tracer</i>	List in steps <i>Poner en una lista</i>
2. Analyze <i>Analizar</i>	Break apart <i>Estudiar todas las partes de algo</i>
3. Infer <i>Inferir</i>	Read between the lines <i>Sacar una consecuencia a partir de la observación de un hecho</i>
4. Evaluate <i>Evaluar</i>	Judge <i>Juzgar</i>
5. Formulate <i>Formular</i>	Create <i>Crear</i>
6. Describe <i>Describir</i>	Tell all about <i>Contrar de qué se trata una cosa completamente</i>
7. Support <i>Apoyar</i>	Back up with details <i>Hacer más segura una idea u opinión usando detalles</i>
8. Explain <i>Explicar</i>	Tell how <i>Alcarar</i>
9. Summarize <i>Resumir</i>	Give me the short version <i>Expresar de forma más breve</i>
10. Compare <i>Comparar</i>	All the ways they are alike <i>Descubrir todas sus semejanzas</i>
11. Contrast <i>Contraste</i>	All the ways they are different <i>Descubir todas sus diferencias</i>
12. Predict <i>Predecir</i>	What will happen next <i>Pensar en que ha de suceder en el futuro</i>

UNRA(A)VEL Reading Strategy

- U** Underline title
N Now predict passage
R Run through and number the paragraphs
A Are you reading the questions?
(A) Are the important words circled (write down the meaning of the words)
V Venture through the passage
E Eliminate the silly answer(s)
L Let the questions be answered, and write the paragraph # and line # where you found the answers
✓ Double check your work!

U	Title:	
N	Prediction:	
R	Paragraph #	First few words
A	Question?	
(A)	Important word	Meaning
V	Summarize the selection: Who? What? Where? Why? How?	
E	The silly answers I choose to eliminate are:	
L	The correct answer is: I know this because it can be found in paragraph ____ line ____.	

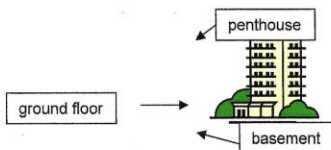
Bloom's Taxonomy Question Starters

Knowledge—Level 1A (Remembering)	Comprehension—Level 1B (Understanding)	Application—Level 2A (Applying)	Analysis—Level 2B (Analyzing)	Synthesis—Level 3A (Creating)	Evaluation—Level 3B (Evaluating)
Skills Demonstrated: <ul style="list-style-type: none">• Observation and recall of information• Knowledge of dates, events, places• Knowledge of major ideas• Master of subject matter	Skills Demonstrated: <ul style="list-style-type: none">• Understanding information• Grasp meaning• Translate knowledge into new context• Interpret facts, compare, contrast• Order, group, infer causes• Predict consequences	Skills Demonstrated: <ul style="list-style-type: none">• Use information• Use methods, concepts, theories in new situations• Solve problems using required skills or knowledge	Skills Demonstrated: <ul style="list-style-type: none">• Seeing patterns• Organization of parts• Recognition of hidden meanings• Identification of components	Skills Demonstrated: <ul style="list-style-type: none">• Use old ideas to create new ones• Generalize from given facts• Relate knowledge from several areas• Predict, draw conclusions	Skills Demonstrated: <ul style="list-style-type: none">• Compare and discriminate between ideas• Assess value of theories, presentations• Make choices based on reasoned argument
What is...? How is...? Where is...? When did _____ happen? How did _____? Why did...? How would you describe...? When did...? Can you recall...? How would you show...? Can you select...? Who were the main...? Can you list three...? Which one...? Who was...?	How would you classify the type of...? How would you compare/contrast...? Will you state or interpret in your own words...? How would you rephrase the meaning...? What facts or ideas show...? What is the main idea of...? Which statements support...? Can you explain what is happening...what is meant...? What can you say about...? Which is the best answer...? How would you summarize...?	How would you use...? What examples can you find to...? How would you solve _____ using what you have learned...? How would you organize _____ to show...? How would you show your understanding...? What approach would you use to...? How would you apply what you learned to develop...? What other way would you plan to...? What would result if...? Can you make use of the facts to...? What elements would you choose to change...? What facts would you select to show...? What questions would you ask in an interview with...?	What are the parts of...? How is _____ related to...? Why do you think...? What is the theme...? What motive is there...? Can you list the parts...? What inference can you make...? What conclusions can you draw...? How would you classify...? How would you categorize...? Can you identify the different parts...? What evidence can you find...? What is the relationship between...? Can you make a distinction between...? What is the function of...? What ideas justify...? How would you estimate the results for...? What facts can you compile...? Can you construct a model that would change...? Can you think of an original way for the...?	Do you agree with the actions...? with the outcomes...? What is your opinion of...? How would you prove...? Disprove...? Can you assess the value or importance of...? Would it be better if...? Why did they (the character) choose...? What would you recommend...? How would you evaluate...? How could you determine...? What choice would you have made...? What would you select...? How would you prioritize...? What judgment would you make about...? Based on what you know, how would you explain...? What information would you use to support the view...? How would you justify...? What data was used to make the conclusion...? Why was it better that...? How would you prioritize the facts...? How would you compare the ideas...?	Do you agree with the actions...? With the outcomes...? What is your opinion of...? How would you prove...? Disprove...? Can you assess the value or importance of...? Would it be better if...? Why did they (the character) choose...? What would you recommend...? How would you evaluate...? How could you determine...? What choice would you have made...? What would you select...? How would you prioritize...? What judgment would you make about...? Based on what you know, how would you explain...? What information would you use to support the view...? How would you justify...? What data was used to make the conclusion...? Why was it better that...? How would you prioritize the facts...? How would you compare the ideas...?

Levels of Questioning

1. **Basic Input/Gathering Information:**
Complete, Count, Match, Name, Define, Scan, Observe, Describe, Identify, List, Select, and Recite
2. **Processing Information:**
Compare/Contrast, Sort, Distinguish, Explain, Why, Infer, Sequence, Analyze, Synthesize, and Make Analogies
3. **Creating Your Own Ideas:**
Evaluate, Generalize, Imagine, Judge, Predict, If/Then, Speculate, Hypothesize, Forecast, Idealize, and Apply the Principle

A Three Story Intellect!



BLOOM'S TAXONOMY and Costa's Levels of Questioning

<i>The Student will...</i>					
Knowledge (Remembering)	Comprehension (Understanding)	Application (Applying)	Analysis (Analyzing)	Synthesis (Creating)	Evaluation (Evaluating)
Learn specific facts, ideas, vocabulary; remembering/recalling information or specific facts.	Ability to grasp the meaning of material; communicate knowledge; understanding information without relating it to other material.	Ability to use learned material in new and concrete situations; use learned knowledge and interpret previous situations.	Ability to break down material into its component parts and perceive interrelationships.	Ability to put parts together to form a new whole; use elements in new patterns and relationships.	Ability to judge the value of material (statement, novel, poem, report, etc.) for a given purpose; judgment is based on given criteria.
Introduction of knowledge		Practice knowledge learned		Demonstrates mastery of knowledge learned	
Level One—the basement		Level Two—the ground floor		Level Three—the penthouse	
<i>By doing the following...</i>		<i>By doing the following...</i>		<i>By doing the following...</i>	
collect, copy, define, describe, examine, find, group, identify, indicate, label, list, locate, match, name, omit, observe, point, provide, quote, read, recall, recite, recognize, repeat, reproduce, say, select, sort, spell, state, tabulate, tell, touch, underline, who, when, where, what		acquire, adopt, apply, assemble, capitalize, construct, consume, demonstrate, develop, discuss, experiment, formulate, manipulate, organize, relate, report, search, show, solve novel problems, tell consequences, try, use, utilize		alter, build, combine, compose, construct, create, develop, estimate, form a new..., generate, hypothesize, imagine, improve, infer, invent, modify, plan, predict, produce, propose, reorganize, rewrite, revise, simplify, synthesize	
alter, associate, calculate, categorize, change, communicate, convert, distinguish, expand, explain, inform, name alternatives, outline, paraphrase, rearrange, reconstruct, relate, restate (own words), summarize, tell the meaning of, translate, understand, verbalize, write		analyze, arrange, break down, categorize, classify, compare, contrast, deduce, determine, diagram, differentiate, discuss causes, dissect, distinguish, give reasons, order, separate, sequence, survey, take apart, test for, why		appraise, argue, assess, challenge, choose, conclude, criticize, critique, debate, decide, defend, discriminate, discuss, document, draw conclusions, editorialize, evaluate, grade, interpret, judge, justify, prioritize, rank, rate, recommend, reject, support, validate, weigh	

Question Cards

Question cards are written to reflect and review information. The QUESTION is placed on the front of the card. A SUMMARIZED ANSWER is placed on the back of the card.

Fables

A fable is a short story with a moral or point to the story.

1. The short story is generally 2 to 3 paragraphs in length.
2. The key concept or vocabulary assigned in class must be used in the fable.
3. The key concept or vocabulary terms must be HIGHLIGHTED in the fable.
4. The moral or point to the story is added AFTER the last paragraph.
5. After the moral or point to the story is stated, there must be an illustration showing the key concept.
6. After the illustration there must be an explanation of how the story, moral/point and illustration show the assigned science concept or principle.

Haiku Assignment

Haiku is a minimalist, contemplative poetry from Japan that emphasizes nature, color, season, contrast and surprises. It should show a sensation, impression or drama of a specific fact or concept.

Contains a TOTAL of 17 syllables:

1st line: 5 syllables

2nd line: 7 syllables

3rd line: 5 syllables

- a. It must follow the pattern and deal with any aspect of the topic covered in class.
- b. It must have a border and artwork reflecting the topic – you pick the aspect you wish to emphasis in the haiku and artwork.
- c. There must be a short 3 to 5 sentence explanation telling how the Haiku shows an understanding of the assigned topic.

Cartoon Project

The cartoon does NOT have to be funny.

The Front of the Paper

- a. Single Frame cartoon (like a Far side)
- b. 4 colors minimum (black and white do not count)
- c. Maximum 2 lines for a caption (speaking bubbles are okay, but not encouraged).

The Back of the Paper

- a. The science concept being shown is stated.

- b. A paragraph explaining why or how the cartoon shows or addresses the concept stated is written.

DUFAS Problem Solving Method

Diagram made to show the problem

Units and variables listed and labeled

Formula/Equation written and ready to use

Algebra shown with numbers and units

Solution circled and identified

Vocabulary Card Instructions

- The purpose of a vocabulary card is to assist students in learning and understanding terms, phrases or concepts covered in class and necessary for understanding (made of 1/16 of a sheet of paper or 1/2 of a 3x5 card).
- The cartoon or diagrams side is taped facing up.
- Use the vocabulary cards to review information by looking at the diagram and making the connection between the diagrams or pictures and the term.
- Even better, exchange notebooks with another student and use their vocabulary cards to see if you UNDERSTAND the term and your partner's logic in explaining.

Front Side – has a cartoon or diagram

1. The diagram or cartoon must have at least 4 different colors (other than black or white).
2. There should be a minimum of writing and explanations on this side of the vocabulary card.

Back Side – Explaining the Words

1. Word (spelled correctly)
2. Link – a word useful in remembering the word, the meaning should be known; often related or rhyming with the vocabulary word.
3. Definition – meaning of word using terms the student understands (1 of the 3 sentences).
4. Usage sentences – the other 2 sentences helping delineate the meaning of the vocabulary word. These should be student generated.

Acrostic Poem

An acrostic poem, sometimes called a name poem, uses a word for its subject. Then each line of the poem begins with a letter from the subject word. This type of poetry doesn't have to rhyme.

1. The assigned term or word is written vertically (up and down).
2. Words, terms and concepts related to the term are written horizontally (back and forth) off the letter in the vertical term.
3. An illustration representing the term or word must follow the acrostic poem.
4. 3 to 5 sentences explaining how the horizontal words and terms AND the illustration fit the vertical term or word must follow the illustration.

Riddle Cards

The purpose of a riddle card is to assist students in learning and understanding terms, phrases or concepts covered in class and necessary for understanding. The riddle is placed on the front of a card. *The riddle side is taped facing up.* The answer and explanation are placed on the back of the card. The card is then taped on the left hand side of the notebook.

Front Side of the Riddle Card

1. The front of the riddle card has the riddle and artwork written on it.
2. The riddle should contain one or more clues. The clues might or might not rhyme, but must refer to aspects of the answer.
3. The riddle card *MUST* have artwork on the front of the card. The artwork should reflect the topic of the riddle with a clue that *MIGHT* help solve the riddle.
4. The artwork must be in color. At least 4 different colors (besides black or white) must be used.

Back Side of the Riddle Card

1. The back of the card has the answer to the riddle.
2. The answer must be clearly and cleanly written across the top of the card.
3. Below the answer an explanation of *HOW* the clues and artwork lead to the answer must be given.
4. An explanation is usually 2 to 3 sentences in length.

Song or Rap or Rhyming Poem

The poem must use the assigned vocabulary terms or concepts. There must be a title reflecting the major concept of the poem.

1. The song must use the assigned vocabulary or concepts.
2. There must be an illustration (4 color minimum) showing an understanding of the assigned topic and concept.
3. There must be a 2 to 3 paragraph explanation after the song and illustration to explain how each covers and demonstrates the assigned concept and vocabulary.

Limerick Assignment

1. The form or pattern of limerick writing must be followed.
2. The limerick must be original and not copied from somewhere.
3. The limerick must be G or PG rated. Anything else gets you in trouble.
4. The science topic or concept assigned must be addressed in the limerick.
5. An illustration about the topic must follow the limerick.
6. A 3 to 5 sentence explanation of how the limerick and the illustration are related to the topic must be written after the limerick.

The Limerick Pattern

- a. A limerick has FIVE lines.
- b. The last words of the first, second and fifth lines rhyme with each other.
- c. The first, second and fifth lines are longer than the third and fourth lines.
- d. The last words of the third and fourth lines rhyme with each other.
- e. The pattern of sounds follows the pattern:
Da DUM dad a DUM dad a DUM

Limerick Example:

Physics Topic: Heat and Energy (APS website)

The physics test was quite near-o,
And all thought everything was quite clear-o;
“Why study this junk
I’m sure I won’t flunk,”
But then he earned an Absolute Zero

Cinquains

A cinquain is a five-line poem written about a single concept, object or idea. An American poet developed cinquains after examining the Japanese haiku format. The format is a short, unrhymed poem of twenty-two syllables and five lines. The five lines contain 2, 4, 6, 8 and then 2 syllables. Each line is supposed to deal with a specific aspect of the cinquain's topic.

Raindrop
Moisture, Falling
Sustain, Nourish, Cleansing
Teardrop, Diamond, Dropping Earthward
Dewdrop

- **1st line** consists of two syllables/1 word (the title).
 - **2nd line** consists of four syllables/2 words (describes the title).
 - **3rd line** consists of six syllables/3 words (states an action).
 - **4th line** consists of eight syllables/4 words (expresses a feeling).
 - **5th line** consists of two syllables/1 word (another word for the title).
1. The cinquain must be written on the assigned topic.
 2. Follow the format of syllables and words per line.
 3. An illustration of the concept or topic must be made after the cinquain.
 4. A minimum of 4 colors (black and white do not count) must be used in the illustration.
 5. A 3 to 5 sentence EXPLANATION of how the cinquain and illustration relate to the assigned topic must be made.

Equation Bookmark

1. Must be no more than 5cm wide and 20 cm long
2. Front must have a picture or illustration representing the main concept of the chapter (minimum of 4 colors)
3. Front must have the assigned equation
4. Back must have the assigned equation
5. Back must describe each variable in the equation
6. Back must identify the correct units for each variable in the equation
7. Back must explain how the front illustration shows the equation in use.

Vehicle Name

As part of a design team for a new model vehicle, you must select a name for the model. The name must reflect the vehicle's abilities and one of the assigned science concepts.

1. What is the model name of the vehicle?
2. Explain how the model name of the vehicle fits its abilities.
3. Write the advertising slogan to be used to represent and show the vehicle.
4. Create a magazine advertisement showing the vehicle and emphasizing its abilities and name.
5. Explain in at least 2 paragraphs how the slogan and magazine advertisement represent the science concept.

People in Your Neighborhood Flip It

Select one of the assigned concepts as a neighborhood. Now describe the people (MAJOR COMPONENTS) in the neighborhood. Each person has separate Flip It to be taped into the notebook.

1. Front of the Flip It – not more than 4cm wide and 10cm long.
2. Front has a colored diagram of the person in appropriate work or leisure clothing.
3. Front has the name of the person (the variable must be part of the name) across the bottom of the Flip It.
4. The back has the name of the person across the top.
5. The job or workplace fits the person's name is described.
6. How the job helps the neighborhood (the equation) to operate and solve problems.

Newspaper Article

Write a 2 to 3 paragraph long newspaper article suitable for the school newspaper about the assigned science concept or topic.

1. The article must contain the How, Who, What, When, Where, Why about the concept or equation.
2. The article must have at least two interesting facts people could use in common conversations.
3. There must be a graphic or illustration (minimum of 4 colors) representing the concept or equation being applied.
4. There must a caption of 2 to 3 sentences explaining the graphic.

Letter to the Editor

1. The letter must be from 2 to 4 paragraphs in length.
2. The letter must contain the assigned topic or vocabulary terms.
3. Each of the assigned topic or vocabulary terms must be **HIGHLIGHTED**.
4. **YOU** must state an opinion about the topic.
5. At least 5 specific facts must be used to support the opinion.
6. An illustration of the topic must be made after the letter.
7. A minimum of 4 colors (black and white do not count) must be used to make the illustration.
8. A 3 to 5 sentence explanation of how the letter and illustration are related to the topic must be written.

Tattoo or Body Art

You are in charge of developing a tattoo to allow the world to know about one of the assigned topics or equations.

1. The centerpiece of the tattoo must be a slogan or phrase a part of the tattoo to allow the world to know about one of the assigned topics.
2. The surrounding artwork (minimum of 4 colors) must demonstrate the concept in a real-life situation.
3. The artwork must be suitable for all ages and appropriate for viewing in all social situations.
4. 2 to 3 paragraphs explaining how the artwork represents the concept and the best location of the tattoo on the body must be written underneath the tattoo.

Clothing Line

Your love of science and startling fashion sense has you as the owner of a company offering a clothing line named after one of the assigned science concepts.

1. Describe one item from the clothing line and how it represents the science concept.
2. Make an illustration (minimum of 4 colors) of the article of clothing with the logo advertising the science concept. One portion of the logo must use or apply the concept as part of the illustration.
3. Use at least 3 paragraphs to describe how the name of the clothing line will help it sell, how the illustration shows the science concept and how the wearing the clothing would help a student learn the science behind the concept.

Toy Design

Apply your knowledge of fun and science to design the hottest and best-selling toy of the season. The toy must apply one of the assigned science concepts and not cause serious bodily injury as part of normal use. As part of the campaign to promote sales, the following information must be provided.

1. What is the name of the toy?
2. What is the basic science concept used when playing with the toy?
3. What are the most fun features of the toy?
4. What age group is the toy designed to reach?
5. How will playing with the toy help teach science?
6. Make an illustration of the toy being used (minimum of 4 colors) by a happy consumer.
7. Use at least 2 paragraphs to describe the slogan to sell the toy. Part of the slogan must contain an everyday application of the toy's science concept.

Box of Colors

As part of a campaign to make science more color conscious, color markers are given names describing both the color and a variable or science concept.

1. Four basic colors must be used: blue, red, green, and yellow.
2. At least two extra colors must be added to the basic four.
3. Draw each marker with the name of the color and variable/concept on the label (displacement red and so on).
4. Write a 3 to 5 sentence description explaining how the color and the variable/concept make a natural fit.
5. Draw the outside of the box with a slogan to entice people to purchase this mix of colors and science. A warning label must be included across the bottom of the box.

Tee Shirt Art

Design artwork for a tee shirt representing one of the assigned concepts, variables, or terms.

1. Front of shirt must have artwork (minimum of 4 colors) showing the concept, variable or term.
2. Back of the shirt must have a 1 or 2 line 'cute or clever (but clean)' saying using the concept, variable or term.
3. A minimum of 1 paragraph explaining how the artwork and saying get the SCIENCE idea across must be written.

Designing a Magazine Ad

Design a magazine advertisement about the assigned concept or equation.

1. Identify the magazine (appropriate for teenagers or young adults) in which the ad would be used.
2. The standard header or footer of the magazine must be placed above or below the advertisement.
3. The advertisement must be no more than a half page in length and use a minimum of 4 colors.
4. There must be a least one paragraph of claims or selling points about the concept on the advertisement.
5. Below the advertisement, use at least 3 paragraphs to explain why the magazine was selected, how the artwork gets across the concept or equation use and why the claims or selling points help explain the importance or develop the understanding of the concept or equation.

Pet Name

You are the proud owner of a new and unique pet and have honored it with one of the assigned SCIENCE VOCABULARY or CONCEPTS for a name.

1. What is the name of the pet?
2. Explain how the name of the pet fits its behavior.
3. Describe ONE trick you will have the pet learn to represent and show off its name.
4. Make a drawing of the Pet showing off the trick representing its name.
5. Describe how the drawing and trick represents the CONCEPT.

Fall Sporting Event

Design a non-injurious sporting event called "Newtonia" that requires a team of players to work together to win. The sporting event will take place in free fall (no apparent gravity) inside a large air filled bubble. Players are NOT allowed to use any electrical devices or electronic enhancements. The sporting event must apply at least 5 SCIENCE concepts or principles during play.

1. Write the rules or rules to win.
2. Describe and illustrate the uniform or equipment needed to play.
3. Write each of the SCIENCE concepts or principles to be applied during the game and describe how applying each will help a team win the game.

4. Describe any special problems that would have to be solved due to the game being played in free fall (no apparent gravity).

Public Service Announcement (PSA)

Option 1 PSA Radio Announcement:

You are charged with writing a radio public service announcement on one of the assigned concepts.

Option 2 PSA Urinal Advertisement:

A Public Service Message to be posted above urinals or on the walls of bathroom stalls to be read in 30 seconds or less.

1. The PSA must be no longer than 30 seconds when read aloud.
2. The concept must be identified at least twice during the PSA.
3. The PSA must include at least 5 vocabulary terms or phrases from the current unit.
4. Each vocabulary term or phrase must be highlighted.
5. There must be an illustration (minimum 4 colors) reflecting the concept and message.
6. After the reading of the PSA, there must be a one-sentence declaration of the organization responsible for developing the PSA.
7. Write a 2 to 3 paragraph explanation of how and why the PSA would influence people to better understand the main concept.

Radio Commercial – Thirty Seconds of Fame and Glory

Write a 30 second (maximum) radio commercial advertising the assigned concepts or vocabulary terms.

1. The one idea or concept considered to be most important should be the main message of the commercial.
2. The commercial must use at least 5 vocabulary terms or phrases from the current unit.
3. Each vocabulary term or phrase must be highlighted.
4. A description of any sound effects or music that would accompany the commercial may be listed in parentheses and highlighted inside the body of the commercial.
5. An illustration showing a printed advertisement to accompany the radio campaign must be drawn (use at least 4 colors).
6. An explanation of how both the radio commercial and the printed advertisement meet the key points of the assignment must be written. Write at least one paragraph about each type of advertisement.

Concept Mapping

When make a concept map, the main theme or concept is the center bubble of the concept map.

Branching off the center bubble are related concepts or topics.

1. Use at least 4 different colors and 4 different shapes on the concept map.
2. Each color must represent a different thread of ideas or concepts. If a bubble is related to more than one thread of concepts, use all the colors to show this.
3. Each shape of bubble must represent a different thread of ideas or concepts.
4. Include a key identifying what each shape and color represents.
5. An explanation must be written next to the line connecting each set of bubbles.
6. The explanation must explain how or why the set of bubbles are related.

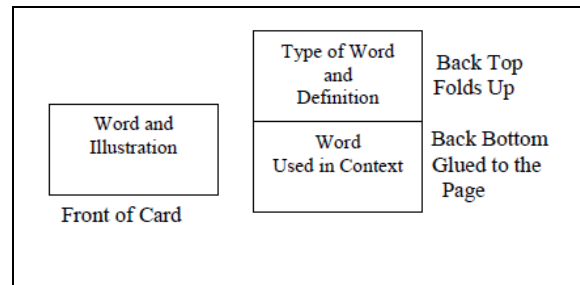
Concept Bookmark

1. Must be no more than 5cm wide and 20cm long.
2. Front must have a picture or illustration that represents the assigned concept (at least 4 colors).

3. Front must have a slogan advertising the concept.
4. Back must have the assigned concept.
5. Back must describe how the slogan and picture relate to the concept.

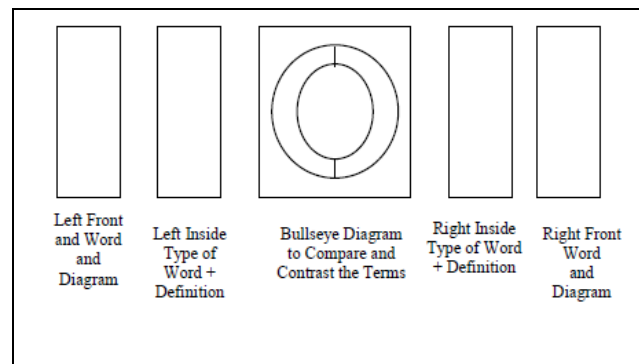
Fold It 1 – Explain One Term (Similar to a Vocabulary Card)

1. Fold a piece of paper ONCE.
2. Front has the TERM and an ILLUSTRATION representing the term.
3. Back Top has the type of word (Noun, Verb, etc.) and a definition of the word.
4. Back Bottom has the word used in context in a sentence.



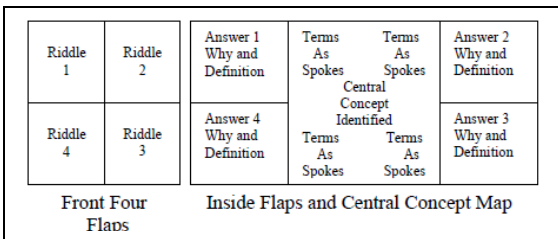
Fold It 2 – Compare and Contrast Two Terms

1. Tri-fold a piece a paper.
2. Left side – One TERM and an ILLUSTRATION
3. Inside Left Side – Type of word and a definition of the word
4. Right side – One TERM and an ILLUSTRATION
5. Inside Right Side – Type of word and a definition of the word
6. Inside Center – A bull's eye diagram to compare and contrast the two terms



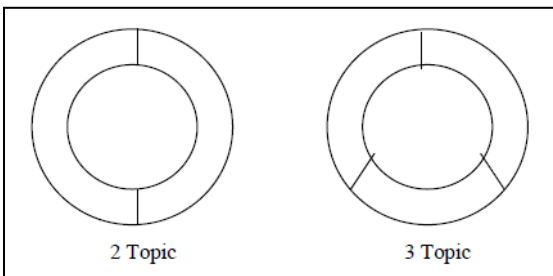
Fold It 3 – Concept Map

1. Tri-fold a piece of paper.
2. Cut each flap in two (to form two ‘doors’).
3. Place a riddle and illustration on each flap.
4. Inside each flap, write the answer and the reason why.
5. In the central area, construct a CONCEPT MAP with the terms as spokes. Be sure to have the reason connecting the term to the central concept.



Bull’s Eye Comparison

1. Compare and contrast two to three topics using a bull’s eye diagram.
2. Differences between the two topics belong on the outside sections. The similarities between the topics belong in the center bull’s eye.
3. A 4 color minimum diagram must show how the topics are related.
4. A 3 – 5 sentence explanation of how the diagram and similarities are related must be written.



The Ring of Truth

Create a Ring of Truth for the assigned TERM or CONCEPT.

1. Inner circle – Write the TERM or CONCEPT being reviewed.
2. Outer circle – List specific facts, ideas, and information about the TERM or CONCEPT.
3. Outer area – Write down common WRONG or INCORRECT ideas or information the Person on the Street might have about the TERM or CONCEPT.
4. Underneath the Ring of Truth, use at least 2 paragraphs to explain why people might have these misconceptions.

