

Science Writing Assignments

The following creative processing assignments are not all-inclusive. The assignments have been used with students from upper elementary to Advanced Placement® and IB Classes. The level of writing, illustration and explanation will depend on the skills, background and sophistication of the students in the class. The writing portion of the assignments is a very important component of each assignment. The length of the writing portion should be one paragraph, but can be varied depending on the instructor's directions.

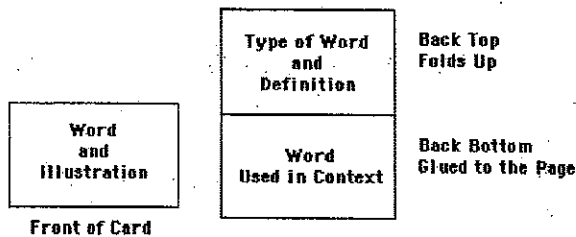
Non-Linguistic Graphic Representation (Illustration)

You are in charge of developing a non-linguistic graphic representation or illustration to allow the world to know about one of the assigned topics, concepts, or equation.

- The centerpiece of the artwork must be a slogan or phrase.
- The surrounding artwork (minimum of four colors) must demonstrate the concept in a real-life situation.
- The artwork must be suitable for all ages and appropriate for viewing in all social situations.
- A two- to three-paragraph explanation of how the artwork represents the topic, concept, or equation must be written underneath the artwork.

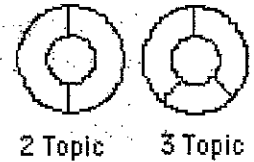
Fold It 1 – Explain One Term (Similar to a Vocabulary Card)

- Fold a piece of paper once.
- Front has the word and an illustration representing the term.
- Back Top has the type of word (noun, verb, etc.) and a definition of the word.
- Back Bottom has the word used in context in a sentence.



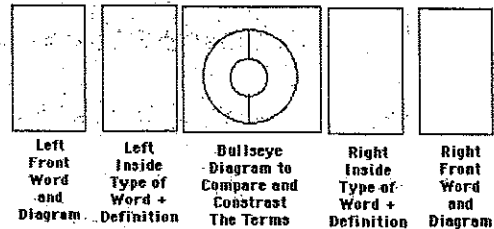
Bull's Eye Comparison

- Compare and contrast two to three topics using a bull's eye diagram.
- Differences between the two topics on outside sections:
- Similarities between the topics in the center bull's eye.
- Diagram with minimum of 4 colors to show how the topics are related.
- A one-paragraph explanation of how the diagram and similarities are related.



Fold It 2 – Compare and Contrast Two Terms

- Tri-fold a piece of paper.
- Outside Left Side—One term and an illustration
- Inside Left Side—Type of word and a definition of the word
- Outside Right Side—One term and an illustration
- Inside Right Side—Type of word and a definition of the word
- Inside Center—A bull's eye diagram to compare and contrast the two terms.
- A one-paragraph explanation of the relationship between the two terms



Fold It 4 – Concept Map

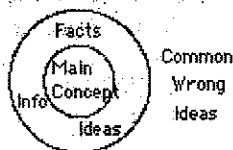
- Tri-fold a piece of paper.
- Cut each flap in half to form two ‘doors.’
- Place a riddle and illustration on each flap.
- Inside each flap, write the answer and the reason for that answer.
- In the central area, construct a concept map with the terms as spokes. Be sure to have the reason connecting the term to the central concept.
- Write a one-paragraph explanation of the concepts described.

Front Four Flaps Inside Flaps and Central Concept Map

Riddle 1	Riddle 2	Answer 1 Why and Definition	Terms As Spokes	Terms As Spokes	Answer 2 Why and Definition
		Central Concept Identified			
Riddle 4	Riddle 3	Answer 4 Why and Definition	Terms As Spokes	Terms As Spokes	Answer 3 Why and Definition

The Ring of Truth

- Create a Ring of Truth for the assigned term or concept.
- Inner Circle—Write the term or concept being reviewed.
- Outer Circle—List specific facts, ideas and information about the term or concept.
- Outer Area—Write down common wrong or incorrect ideas or information the Person On The Street (POTS) might have about the term or concept.
- Underneath the Ring of Truth, use at least two paragraphs to explain why the wrong ideas are incorrect and why people might have these misconceptions.



Cartoon Project

The cartoon does NOT have to be funny. The cartoon should be drawn on a blank sheet of paper with the explanation on the back.

The Front of the Paper

- Single Frame cartoon (like a Far Side® cartoon).
- Four colors minimum (black and white DO NOT COUNT).
- Maximum two lines for a caption (speaking bubbles are okay, but not encouraged).

The Back of the Paper

- The science concept being shown is stated.
- A paragraph explaining why or how the cartoon shows or addresses the stated concept is written.

Fable

A fable is a short story with a moral or point to the story. The characters in a fable are animals.

- The short story is generally two to three paragraphs in length.
- The key concept or vocabulary assigned in class must be used in the fable.
- The key concept or vocabulary terms must be highlighted in the fable.
- The moral or point to the story is added after the last paragraph.
- After the moral or point to the story is stated, there must be an illustration showing the key concept.
- After the illustration there must be an explanation of how the story, moral/point and illustration show the assigned science concept or principle.

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.

- The assigned term or word is written vertically (up and down).
- Words, terms and concepts related to the term are written horizontally (back and forth) off the letter in the vertical term.
- An illustration representing the term or word must follow the acrostic poem.
- A one-paragraph explanation of how the horizontal words and terms and the illustration fit the vertical term or word must follow the illustration.

Limerick

- The form or pattern of limerick writing must be followed:
 - Five lines
 - The last words of the first, second and fifth lines rhyme with each other.
 - The first, second and fifth lines are longer than the third and fourth lines.
 - The last words of the third and fourth lines rhyme with each other.
 - The pattern of sounds follows the pattern:
Da DUM da da DUM da da DUM
- The limerick must be original and not copied from somewhere
- The limerick must be G or PG-13 rated.
- The science topic or concept assigned must be addressed in the limerick
- An illustration about the topic must follow the limerick.
- A one-paragraph explanation of how the limerick and the illustration are related to the topic must be written after the illustration.
- Example:

Types of Energy

Work is measured in joules.

Energy also in joules

They are different types of energy

Like potential and kinetic, gee

Isn't that cool!

Cinquains ("Pine Tree" Poem)

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 distributed in two, four, six, eight, then two syllables.
- Each line is supposed to deal with a specific aspect of the cinquain's topic.
- The first line consists of two syllables in one word (the title).
- The second line consists of four syllables in two words (describes the title).
- The third line consists of six syllables in three words (states an action).
- The fourth line consists of eight syllables in four words (expresses a feeling)
- The last line consists of two syllables in one word (another word for the title).

- An illustration of the concept or topic must be made after the cinquain.
- A minimum of four colors (black and white do not count) must be used in the illustration.
- A one-paragraph explanation of how the cinquain and illustration relate to the assigned topic must be made.
- Example:

Raindrop

Moisture, Falling

Sustain, Nourish, Cleansing

Teardrop, Diamond, Dropping, Earthward

Dewdrop

Haiku

A haiku is a minimalist, contemplative poetry from Japan that emphasizes nature, color, season, contrasts and surprises. Usually it has three lines and 17 syllables distributed in a five, seven and five syllable pattern. It should show a sensation, impression or drama of a specific fact or concept.

- 17 syllables
- Five syllables in the first line
- Seven syllables in the second line
- Five syllables in the third line.
- The haiku must follow the pattern and deal with any aspect of topic covered in class.
- The section must have artwork reflecting the topic—you pick the aspect you wish to emphasize in the haiku and artwork.
- There must be a three- to five-sentence explanation telling how the haiku shows an understanding of the assigned topic.
- Example:

Size and direction

A vector will help you out

Add then head to tail

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

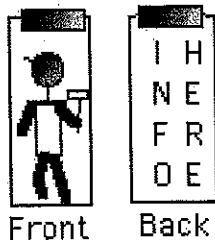
Nursery Rhyme or Song

- Use the cadence of a nursery rhyme or the melody of a children's song to write a rhyme or song about an assigned topic or concept.
- Use the key vocabulary related to the topic or concept.
- The topic or concept must be covered well.
- There must be an illustration (four-color minimum) showing an understanding of the assigned topic or concept.
- Include a one-paragraph explanation after the song and illustration to explain how each covers and demonstrates the assigned topic/concept and vocabulary. Identify the original nursery rhyme or song within the explanation.

People In Your Neighborhood Flip It

Select one of the assigned concepts as a neighborhood." The Flip It will describe the people (MAJOR COMPONENTS) in the neighborhood.

- Front of the Flip-It—not more than 4 cm wide and 10 cm long.
- Front has a colored diagram of a person in appropriate work or leisure clothing.
- Front has the name of the person (the variable must be part of the name) across the bottom of the Flip-It.
- The back has the name of the person across the top and a description of the job or workplace of the person described.
- A one-paragraph explanation must be written on how the job or workplace fits the person's name and how the job or workplace helps the neighborhood to operate and solve problems.



Concept or Equation Bookmark

- Must be no more than 5 cm wide and 20 cm long.
- Front must have a picture or illustration representing the assigned concept (at least four colors)
- Front must have a slogan advertising the concept or equation.
- Back must describe aspects of the concept or the variables in the equation and the correct units for each variable in the equation.
- Back must explain how the front illustration and slogan relate to the concept.

Letter to the Editor

- The letter must be from two to four paragraphs in length.
- The letter must contain information about the assigned topic or vocabulary terms.
- Each use of the assigned topic or vocabulary terms must be highlighted.
- You must state an opinion about the topic and use five specific facts to support the opinion.
- An illustration of the topic must be made after the letter.
- A minimum of four colors (black and white do not count) must be used to make the illustration.
- A one-paragraph explanation of how the letter and illustration are related to the topic must be written.

Box of Colors

As part of a campaign to make science more color-conscious, colored markers are given names describing both the color and a VARIABLE or SCIENCE CONCEPT.

- Four basic colors must be used: blue, red, green and yellow.
- At least two extra colors must be added to the basic four.
- Draw each marker with the name of the color and variable/concept on the label (Example: Displacement Red, Mitochondria Blue, Sedimentary Orange and so on)
- Write a one-paragraph description explaining how the color and the variable/concept make a natural fit.
- 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.

School Newspaper Article

Write a two- to three-paragraph article suitable for the school newspaper about the assigned science concept or topic.

- The article must contain the How, Who, What, When, Why of the concept or topic.
- The article must have at least two interesting facts people can use in daily conversations.
- There must be a graphic or illustration representing the concept.
- There must a caption of two to three sentences explaining how the graphic and information are related to the assigned science topic.

Topic or Concept Short Essay

- Write a strong paragraph essay of six to eight sentences to explain an assigned topic or concept.
- At least 10 vocabulary words related to the topic or concept must be used and underlined.
- The essay cannot include a formal definition of the topic or vocabulary words.
- There must be a graphic or illustration (minimum of four colors) representing the topic or concept.
- The essay must include an explanation of how the graphic or illustration relates to the content of the essay.

Radio Commercial:

Thirty Seconds of Fame and Glory

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

- The one idea or concept considered to be most important should be the main message of the commercial.
- The commercial must use at least five vocabulary terms or phrases from the current unit.
- Each vocabulary term or phrase must be highlighted.
- A description of any sound effects or music that would accompany the commercial may be listed in parenthesis and highlighted inside the body of the commercial.
- An illustration showing a printed advertisement to accompany the radio campaign must be drawn (use at least four colors).
- 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.

Vehicle Name

As part of 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.

- State the model name of the vehicle.
- Explain how the model name of the vehicle fits its abilities.
- Write the advertising slogan to be used to represent and show the vehicle.

- Create a magazine advertisement showing the vehicle and emphasizing its abilities and name.
- Explain in at least two paragraphs how the slogan and magazine advertisement represent the science concept.

Fashion 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.

- Describe one item from the clothing line and how it represents the science concept.
- Make an illustration (minimum of four 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.
- Use at least three paragraphs to describe how the name of the clothing line will help it sell, how the illustration shows the science concept, and how wearing the clothing will 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.

- The name of the toy
- The basic science concept used when playing with the toy?
- The most fun features of the toy
- The age group is the toy designed to reach
- How playing with the toy will help teach science
- An illustration (minimum of 4 colors) of the toy being used by a happy consumer.
- A slogan to use to sell the toy and at least one paragraph to describe the slogan. The slogan must contain an everyday application of the toy to a science concept.

Public Service Announcement (PSA)

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

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

Pet Name

You are the proud owner of a new and unique pet and have honored it with one of the assigned science vocabulary words or concept for a name.

- State the name of the pet.
- Explain how the name of the pet fits its behavior.
- Describe one trick you will have the pet learn to represent and show off its name.
- Make a drawing of the pet showing off the trick that represents its name.
- In one paragraph, describe how the drawing and trick represent the word or concept.

Designing a Magazine Ad

Design a magazine advertisement about an assigned concept or equation.

- Identify the magazine (appropriate for teenagers or young adults) in which the ad would be used.
- The standard header or footer of the magazine must be placed above or below the advertisement.
- The advertisement must be no more than a half page in length and use a minimum of four colors.
- There must be at least one paragraph of claims or selling points about the concept on the advertisement.
- Below the advertisement, use at least three paragraphs to explain why the magazine was

selected, how the artwork illustrates the concept or equation used, and why the claims or selling points help explain the importance of or develop the understanding of the concept or equation.

T-Shirt Art

Design artwork for a t-shirt representing one of the assigned concepts, variable, or terms.

- Front of shirt must have artwork (minimum of four colors) showing the concept, variable or term.
- Back of the shirt must have a one or two line 'cute or clever (but CLEAN)' saying using the concept, variable or term.
- A minimum of one paragraph must be written to describe how the artwork and saying explain the concept, variable or term.

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.

Front Side

- The FRONT of the RIDDLE CARD has the riddle and artwork written on it.
- The riddle should contain one or more clues that may or may not rhyme, but must refer to the answer.
- The artwork should reflect the topic of the riddle with a clue that MIGHT help solve the riddle, and it must be drawn in several colors (besides black or white).

Back Side

- The answer to the riddle is on the back of the card and must be clearly written across the top of the card.
- Below the answer, a two- to three-sentence explanation of HOW the clues and artwork lead to the answer must be given.

Vocabulary Card

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 on 1/16 of a sheet of paper or 1/2 of a 3x5 card.
- Use the vocabulary to review information.
- Students can exchange notebooks with another student and use their vocabulary cards to see if they understand the term and their partner's logic in the explanation.

Front Side (has a cartoon or diagram)

- The diagram or cartoon must have several different colors (other than black or white).
- There should be a minimum of writing and explanations on this side of the card.
- Tape this side facing up in the notebook.

Back Side (Explaining the Words)

This side must contain:

- Word (spelled correctly)
- Link – a word useful in remembering the vocabulary word (the meaning of this word must be known; often related or rhyming with the vocabulary word)
- Three-sentence explanation
- Definition – meaning of word using terms the student understands (one sentence)
- Usage Sentences – two sentences that help delineate the meaning of the vocabulary word. These should be student-generated.

Diamante Poem

A diamante poem follows a very specific format. There are seven lines, and each line must have a specific number and type of words. The topic noun in line 1 is opposite to the ending noun in line 7. When finished, the poem will be in the shape of a diamond!

- Line 1: Topic (**noun 1**)
- Line 2: **Two** describing words (**adjectives for noun 1**)
- Line 3: **Three** action words ("**-ing**" verbs for noun 1)
- Line 4: **Four** words: Two words about the topic and two words opposite to those in line 2
- Line 5: **Three** action words for the ending noun ("**-ing**" verbs for noun 2)
- Line 6: **Two** words to describe the ending **noun 2**
- Line 7: Ending **noun 2** (opposite of Line 1)

Example of a diamante poem about a meteor shower:

Fireball	<i>← noun</i>
Brilliant, beautiful	<i>← 2 adjectives</i>
Falling, lighting, arching	<i>← 3 verbs</i>
Flashing, wondrous, black, nothing	<i>← 4 words</i>
Staring, hoping, missing	<i>← 3 verbs</i>
Deep, quiet	<i>← 2 adjectives</i>
Darkness	<i>← noun</i>

Use the form below when creating your diamante poem.

(noun)

(adjective) (adjective)

(-ing verb) (-ing verb) (-ing verb)

(word describing noun 1) (word describing noun 1) (word describing noun 2) (word describing noun 2)

(-ing verb) (-ing verb) (-ing verb)

(adjective) (adjective)

(noun)