

Ongoing Strategies

Science Vocabulary Development

Science vocabulary should be introduced during the lessons as it naturally comes up in the course of the investigation and in the making meaning conference after the lesson. This provides students with an experience to link the new words to experiences as well as a meaningful opportunity to use them in context.

Once the words have been introduced, they should be placed in a visible word bank by the teacher for the students to refer to during future lessons.

Word Bank/Realia- Create a Word Bank that incorporates the use of the word, its meaning and a picture or actual representative of the word. Review these words and meaning throughout the unit. Play the “**Mystery Word Game**” by covering a word and giving the students clues to discover the word. Play “**Mystery Meaning Game**” by covering a meaning and giving the students clues to discover the word’s meaning.



Kit Inventory

Students should participate in Kit Inventory before beginning this unit. Kit Inventory prepares students for the unit by discussing and naming the materials in the kit.

To do Kit Inventory, the teacher will hide an item from the kit, such as a hand lens. A student will view the item and answer three questions:

- 1) What color is it?
- 2) Where have you seen it before **OR** What does it remind you of?
- 3) How do you think we will use it in science?

The class will have three chances to guess what the material is before the teacher reveals it. After the item is revealed, the teacher will put it in a plastic bag, label it, and hang it on a bulletin board or wall in the classroom. This is called a Realia wall. Students will use the Realia wall for the duration of the unit to identify and spell the name of the materials in the kit.

Six Steps to Effective Vocabulary Instruction

*From Building Background Knowledge for Academic Achievement
by Robert Marzano*

Step 1: The teacher provides a description, explanation, or example of the new term. For science, doing the investigation first, explaining the term in the whole class discussion of the investigation, and adding it to the word wall is most effective.

Step 2: Students restate the explanation of the new term in their own words. In science, the students should restate the definition in their own word by writing it in their science notebook thereby constructing their own explanation based on what the teacher has presented.

Step 3: Students create a nonlinguistic representation of the term. Immediately after students have generated their own description of the term, students create a graphic organizer, picture, or pictograph to connect the term to their experience.

Step 4: Students periodically do activities that help them add to their knowledge of vocabulary terms.

Students need multiple exposures to the terms including some of the following: Comparing terms, classifying terms, generating metaphors using terms, generating analogies using terms, revising initial descriptions or nonlinguistic representations of terms, and using understanding of roots and affixes to deepen knowledge of terms

After these activities, it is critical for students to go back to their notebooks and record new insights.

Step 5: Periodically students are asked to discuss the terms with one another. Organize students into groups and have them discuss the terms in their notebooks. Prompts like, have each student tell their favorite word, are helpful.

Step 6: Periodically students are involved in games that allow them to play with the terms.

EOG Review Strategies

Clarifying Routine- Students use the “Clarifying Table” for understanding key vocabulary or terms. Students can work as a team or in pairs and review for homework independently. The table can be reduced to fit more words on one page or to make into a booklet for review.

A. Term

gravity

B. Core Idea

Force of attraction between two objects. (You and earth, that’s what is keeping you down.)

C. Use t to describe...
 Example of...

D. Clarifiers

E. Knowledge Connections

Laws of motion

what goes up must come down

Earth and the moon

weight = mass + gravity

on earth we are heavy

Newton’s laws

on moon we are weightless

Physics

a ball goes up and comes down

F Don’t confuse with...
 Not an example of...

Being lightweight

G. Example Sentence

An apple falls from the apple tree based on gravity.

Example of a Clarifying Table


Ⓢ Term		
Ⓢ Core Idea		
Ⓢ <input type="checkbox"/> Use it to describe... <input type="checkbox"/> Example of...	Ⓢ Clarifiers	Ⓢ Knowledge connections
Ⓢ <input type="checkbox"/> Don't confuse it with... <input type="checkbox"/> Not an example of...		
Ⓢ Example sentence		

Study Cards- Students use index cards to make flash cards for study using the “Frayer Model” for vocabulary development.

Directions: The learner will write the vocabulary word on side one (the lined side) of the index card.

The learner will divide the back side of the index card (the blank side) into two parts. On one part they will write the definition for the vocabulary word. On the other part they will draw a picture and write a sentence that makes a connection to the word. The picture can be related to a personal experience or an inspiration from print or media sources.

Example:

apple	Firm round fruit with central core	 <p>I know that that Newton’s got his idea for gravity from an apple falling on his head.</p>
--------------	---------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Vocabulary Concept Webs- Students can create vocabulary webs to associate the words with synonyms and antonyms.

Vocabulary Concentration- Learners can use their vocabulary words to create a board with card slots. Learners can write the words on the card slots and have the definitions on the cards.

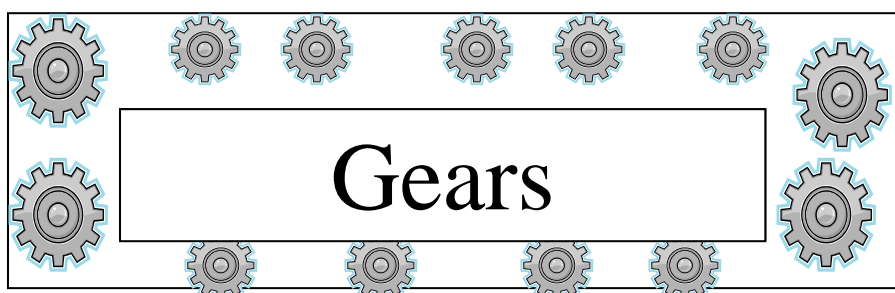
Creative Movement- Learners work independently, with a partner, or in a group to create a pantomime or visual representation using their bodies to portray the vocabulary word and its meaning.

List-Group-Label- Learners can use the vocabulary cards to group words based on categories that make sense to them. Have them label the categories they create.

Pictionary Learners can play” with these words in teams. One person from each group can draw their illustration on the board while their group members try to guess what the word within two minutes.

Bingo Learners can play http://www.bingocardprinter.com/bingo_blank.php Give each student a blank bingo card and have them write one vocabulary word in each space. Use the definitions as bingo clues for each word.

Symbolic Borders- Students use index cards, copy paper, or construction paper to draw 3 or more symbols around a one-inch border that represents the



Learners can use the vocabulary words by making a chart follows the format for the study cards.

Landforms

Word	Visual Representation	Definition	Personal Association or Characteristic
model			
boundary			
cartographer			
map			
structure			

Landforms

Word	Visual Representation	Definition	Personal Association or Characteristic
scale			
symbol			
key			
Earth scientist			
landform			

Vocabulary Cluster

Synonyms

Antonyms

Blank rectangular box for synonyms.

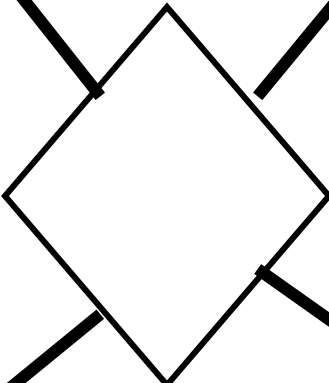
Blank oval box for antonyms.

Blank rectangular box for synonyms.

Blank oval box for antonyms.

Blank rectangular box for synonyms.

Blank oval box for antonyms.



Person	Thing	Animal