
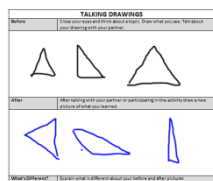
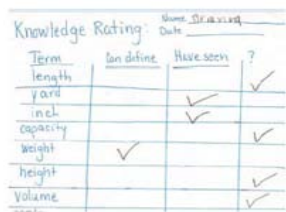
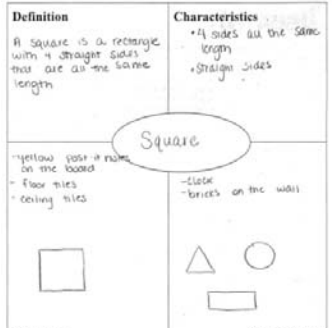



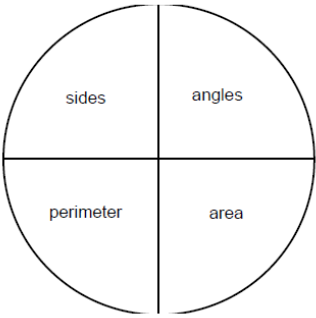
“Reading is key to all learning and the emphasis, time, and importance you allot to literacy, whatever subject you teach, will pay dividends in terms of student self-esteem.”

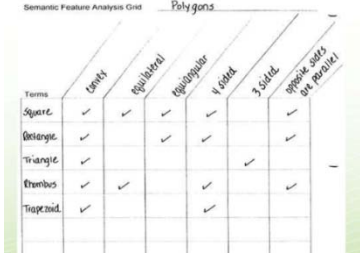
Ellen L. Kronowitz, 2008

<b>Activating Prior Knowledge</b>									
<p>Come up with a connection...</p>  <p>Write a summary to show how these words are related.</p>	<p>The <b>Word Splash</b> is a vocabulary activity that draws upon students' prior knowledge and asks them to make predictions about how essential vocabulary words are related. Prior to reading the text or beginning the mathematics activity, the teacher writes down 8-10 words. Students, working individually or in small groups, write down one to three sentences that explain the relationship. After the activity, students are asked to revisit their statements and revise them as necessary. Providing visual representations of the Word Splash vocabulary will provide students access to the tasks.</p>								
	<p><b>Talking Drawings</b> provide students with the opportunity to activate prior knowledge by creating a visual representation of a concept prior to the lesson. After engaging in learning, students will re-evaluate their prior knowledge by drawing a second depiction of their topic. They will then summarize what they learned by comparing and contrasting the two pictures.</p>								
<p>Anticipation Guide: Percents</p> <p>Directions: Before reading pages 318-319 in your mathematics book, read each statement and write if you agree or disagree with each statement.</p> <table border="1"> <thead> <tr> <th>Before Reading</th> <th>After Reading</th> </tr> </thead> <tbody> <tr> <td>Agree Disagree</td> <td>Decimals are whole numbers. Agree Disagree</td> </tr> <tr> <td>Agree Disagree</td> <td>You can always recognize a decimal number because it always has a decimal point. Agree Disagree</td> </tr> <tr> <td>Agree Disagree</td> <td>Decimals are not related to fractions. Agree Disagree</td> </tr> </tbody> </table>	Before Reading	After Reading	Agree Disagree	Decimals are whole numbers. Agree Disagree	Agree Disagree	You can always recognize a decimal number because it always has a decimal point. Agree Disagree	Agree Disagree	Decimals are not related to fractions. Agree Disagree	<p>Using an <b>Anticipation Guide</b>, will help students make predictions based upon prior knowledge and experience and evaluate those predictions after exposure to new information. By assisting students to think about the key ideas before reading, this strategy can help students make personal connections with the topic so that they can integrate new knowledge with their experiences.</p>
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<b>Building Academic Vocabulary</b>									
	<p><b>Knowledge Rating Scale</b> is a vocabulary activity that allows students to rate their knowledge of target content words. The teacher determines the vocabulary words related to the topic being introduced and has students place them in the chart. Students are then asked to rate their knowledge of the meaning of the word. Adaptations to the Rating Scale can include having students write definitions of the vocabulary word after a unit or chapter, therefore, serving as assessment <i>for learning</i>.</p>								
	<p>A <b>Frayer Model</b> provides students with an opportunity to develop an understanding of concept words (such as the concept of area or the term rectangle). Students are asked to provide a Definition of the word, Essential Characteristics of the word, Examples, and Non-examples. Students are encouraged to represent the key terms using pictures or words. To help activate prior knowledge, it may be helpful to start with the Essential Characteristics cell. Additional verbal and visual word association graphic organizers often include other cells such as identifying root words, related words, or possible sentences, personal connections.</p>								

<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Multiplication</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Product</div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  </div> <div>three-fourths</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <math>3 \div 4</math> </div> <div style="text-align: center;"> <math>\frac{1}{4} + \frac{1}{2}</math> </div> </div>	<p><b>Vocabulary games</b> involve students in active word learning through word play. The <b>Two of a Kind</b> game is modeled after the game of Memory and often focuses on homonyms. You can extend this matching game by having students describe each word when a match is made. It can be modified for mathematics vocabulary by having students match problem-solution, similar words such as product and multiplication, or mathematics words that also have everyday meaning such as volume. In the <b>Vocabulary Go Fish</b> game students construct playing cards with equivalent verbal, symbolic, or picture representations of the same value or concept. Students take turns fishing for these representational pairs. In the <b>Vocabulary Puzzle</b> students use index cards to make puzzle pieces with the key word on one piece and the definition on the other.</p>
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**Comprehension Strategies**


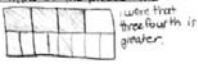
	<p><b>Concept Circles</b> help students study words critically and see how concepts are related. To construct a concept circle, divide a circle into four (or more) sections. In each section write a word or phrase related to the topic. Concept circles may be used in three ways: 1) All of the words in the circle are related and the students must tell how they are related; 2) All of the words in the circle are related except one –referred to as three facts and a fib. The student must identify the unrelated word and explain how the other words are related; 3) One or more of the sections is left blank. Students must fill in the sections with words that are related to the other words and explain why they chose those words.</p>
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	<p>The <b>Semantic Feature Analysis</b> helps students explore and organize the relationship between critical vocabulary and key concepts in a reading selection or unit of study. In this graphic organizer, students determine which characteristics certain vocabulary words possess. Vocabulary words are listed down the left hand column and the features of the topic across the top row of the chart. Students place a "+" sign in the cell if the word aligns with a particular feature of the topic. If the word does not align, they put a "-" in the grid. Students can then use their organizer as a visual to discuss similarities and differences.</p>
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**Summary Strategies**

<p><small>Whole Class: Identify the essential pieces of information (words, facts, numbers, symbols or concepts) that you need to solve the problem. Write these in the space below:</small></p> <p><i>Fei Panke around 1 yard = 10 feet perimeter 3 feet 16 feet yards whole number</i></p> <p><small>Individual: Solve the problem and explain in words, picture and numbers how you got your answer. Use the sequential writing template and your GIST word bank to guide your explanation.</small></p> <p><small>Show your work:</small></p> <p><i>10 20 17 18 19</i>  <math>10 + 16 = 26</math>  <math>26 - 9 = 17</math>  <math>17 \div 2 = 8.5</math>  <math>8.5 \times 2 = 17</math>      18 yards</p> <p><small>Explain how you got your answer:</small></p> <p><i>First... added the 1 sides because that's the perimeter of a rectangle.      Then... got 18 feet of fence.      Next... divided by 2 because 1 yard = 3 feet      Finally... got 17 yards with 1 remainder so I rounded up to 18      I have my answer in lines your answer... 18 yards</i></p> <p><small>This makes sense because (check your work)... The garden is about 20 x 16 meters and 18 yards.  <math>20 \times 2 = 40 + 16 = 56</math> yards</small></p>	<p>The <b>GIST</b> strategy (Generating Interaction between Schemata and Text) that can be used to help students summarize the reading of mathematical text or to gather the essential elements in a given mathematical word problem. The goal of the GIST strategy is for students to list the main points of a passage and then to use this as an outline to write a summary statement in 20 words or less. The GIST strategy can be modified to help students comprehend the meaning of a story problem and support the writing of a proficient constructed response. In this modification, students identify 12 or few key words or procedures that are necessary to solve the selected task. Once these words have been identified, students solve the task and use their GIST list as a word bank to explain in writing how they solved the problem.</p>
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<p><u>Polygonal Poem</u></p> <p>I am a rectangle      I am a square</p> <p>I have a pair of congruent sides      I have all congruent sides</p> <p>I have four right angles      Me too</p> <p>I have four sides      Ditto</p> <p>We have a lot in common but...</p> <p>I am a rectangle      I am a square</p>	<p>Creative writing tasks such as a <b>Poem in Two Voices</b> allows students to demonstrate their understanding of key mathematical concepts in a nontraditional format that has been shown to motivate student learning, enhance student dispositions towards mathematics, and provide a venue for differentiated instruction by giving students a choice in their writing. <b>RAFT</b> is a writing strategy that can be used in all content areas and offers students a choice in their writing assignment. R stands for Role - the person or thing that students will become. A is for Audience - the person or people who will be reading the finished product. F is for Format - the way in which the writing will be done. Examples might include letter, brochure, memo, speech, or advertisement. T stands for Topic - what the writing will discuss. A RAFT allows for differentiated instruction because students get choice in their assignment based on their interest.</p>
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<p><b>CONVINCE ME!</b></p> <p>I know that <u>three fourths is greater than five eighths</u>. This is how I can prove my thinking.</p> <p>First, <u>my promision and</u> I think how to solve what task I can use. To help me I drew two fraction pieces. I try to make them even so it will be true.</p>  <p>Second, I fill in the pieces and find out that <u>three fourths is greater than five eighths</u>. This is because when I filled in the pieces the outcome was that <u>three fourths is greater</u>.</p>  <p>Third, Another method is to take the two fractions <u>parallel to each other</u> and <u>visually you need to multiply 5 and 4</u> which is 20. Then multiply 3 and 3 then check if the right or the left side has the greatest number.</p> <p>Therefore, <u>using these methods</u> you solve many math problems.</p>	<p>By providing students with <b>writing frames</b> they are better able to express their mathematical understanding in words and pictures. Such templates can also include key signal words for different styles of writing.</p> <p><b>Compare &amp; Contrast:</b> on the other hand; similarly; likewise; unlike; but; while; not only; other than; but also</p>	<p><b>Cause &amp; Effect:</b> Since; so that; because; then; therefore; for this reason; consequentially this led to; as a result; if...then; nevertheless</p>	<p><b>Explanation:</b> also; another kind; are made up of; as an example; by observing; characteristics are; consists of; for example; here's how; in addition</p>	<p><b>Sequence:</b> First, then, next, finally, ..</p>
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Graphic Organizers:

<http://www.eduplace.com/graphicorganizer/>

<http://www.teachervision.fen.com/graphic-organizers/printable/6293.html>

Reading and Writing Strategies

<http://www.ohiorc.org/adlit/strategy/>

<http://wvde.state.wv.us/strategybank/>

<http://www.jackson.k12.ky.us/readingstrategies/more/math/index.htm>

<http://www.readingrockets.org/strategies>

Growing the Connection Between Mathematics and Best-Practice Reading and Writing Strategies

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Wisconsin State Reading Association Conference Feb. 4, 2011