

READING TO LEARN IN MATH

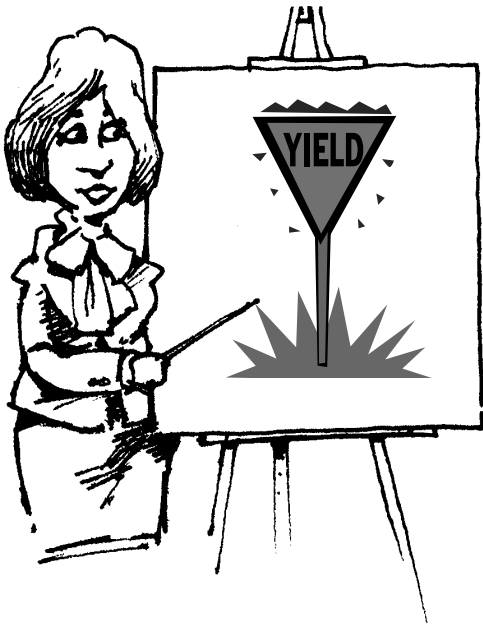
Research-based Strategies to Help Students Access Text and Learn Content



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MARZANO'S HIGH YIELD STRATEGIES



What are Marzano's High Yield Strategies?

High yield strategies are tools used to teach students content that result in high student achievement. Effective and consistent use of these strategies yielded increases significant increases in percentile gains in student achievement (see percentile gains on page 5).

Who is Dr. Robert Marzano?

Dr. Marzano is a scholar at the Mid-Continent Research for Education and Learning Center (MCREL) in Aurora, Colorado; a Associate Professor at Cardinal Stritch University in Milwaukee, Wisconsin; Vice President of Pathfinder Education, Inc.; and President of Marzano and Associates, a private consulting firm in Centennial, Colorado. He has developed programs and practices used by K-12 classrooms that translate current research and theory in cognition to instructional methods. Marzano has authored 21 books and more than 150 articles and chapters on topics such as reading and writing instruction, thinking skills, school effectiveness, restructuring, assessment, cognition, and standards implementation.

READING TO LEARN WITH THE HELP OF MARZANO'S STRATEGIES

Many of the reading to learn strategies involve engaging students in actively finding ways to create meaning from text or accessing information from text. They are themselves, the thinking strategies that Marzano describes as high yield strategies. We can assist teachers at all levels and in all subjects by:

- Asking teachers to utilize Marzano's High Yield strategies for instruction in all subject areas
- Differentiate instruction and resources under the umbrella of these high yield strategies
- Utilizing these strategies to increase opportunities for problem solving and understanding content





MARZANO'S *CLASSROOMS THAT WORK* NINE HIGH YIELD INSTRUCTIONAL CATEGORIES

| INSTRUCTIONAL CATEGORY | SPECIFIC BEHAVIORS |
|--|---|
| IDENTIFYING SIMILARITIES & DIFFERENCES Percentile Gain: 45 | <ul style="list-style-type: none"> • TASKS THAT INVOLVE COMPARE & CONTRAST • TASKS THAT INVOLVE METAPHOR & ANALOGIES |
| SUMMARIZING , NOTETAKING & NOTEMAKING Percentile Gain: 34 | <ul style="list-style-type: none"> • ASKING STs TO GENERATE VERBAL, WRITTEN SUMMARIES • ASKING STs TO TAKE & MAKE NOTES (Modeling and teaching them how to first) • ASKING STs TO REVISE NOTES & CORRECT THEIR OWN ERRORS AND ADD NEW OR MISSING INFORMATION |
| REINFORCING EFFORT & PROVIDING RECOGNITION Percentile Gain: 29 | <ul style="list-style-type: none"> • RECOGNIZING & CELEBRATING PROGRESS TOWARD LEARNING GOALS THROUGHOUT AND AT THE END OF A UNIT (Need to ask students to establish learning goals) • RECOGNIZING & REINFORCING THE IMPORTANCE OF EFFORT |
| HOMEWORK PRACTICE Percentile Gain: 28 | <ul style="list-style-type: none"> • PROVIDING SPECIFIC FEEDBACK ON ALL ASSIGNED HOMEWORK • ASSIGNING HOMEWORK FOR THE PURPOSE OF STUDENTS PRACTICING SKILLS AND PROCEDURES THAT HAVE BEEN THE FOCUS OF INSTRUCTION |
| NONLINGUISTIC REPRESENTATIONS Percentile Gain: 27 | <ul style="list-style-type: none"> • ASKING STs TO GENERATE MENTAL IMAGES REPRESENTING CONTENT • DRAW PICTURES OR PICTOGRAPH REPRESENTING CONTENT • CONSTRUCT GRAPHIC ORGANIZERS REPRESENTING CONTENT • ACT OUT CONTENT • MAKE PHYSICAL MODELS OF CONTENT • MAKE REVISIONS IN THEIR MENTAL IMAGES, PICTURES, PICTOGRAPHS, GRAPHIC ORGANIZERS, AND PHYSICAL MODELS |
| COOPERATIVE LEARNING Percentile Gain: 23 | <ul style="list-style-type: none"> • ORGANIZING STUDENTS IN COOPERATIVE GROUPS WHEN APPROPRIATE BY: ABILITY AND/OR READINESS, AND/OR LEARNING STYLES, AND/OR INTERESTS |
| SETTING OBJECTIVES & PROVIDING FEEDBACK Percentile Gain: 23 | <ul style="list-style-type: none"> • SETTING SPECIFIC LEARNING GOALS AT THE BEGINNING OF A UNIT • ASKING STs TO SET THEIR OWN LEARNING GOALS AND KEEP TRACK OF THEIR PROGRESS • PROVIDING FEEDBACK ON LEARNING GOALS THROUGHOUT UNIT • PROVIDE SUMMATIVE FEEDBACK AT THE END OF A UNIT • ASK STUDENTS TO ASSESS THEMSELVES AT THE END OF UNIT INCLUDING THEIR EFFORT |
| GENERATING AND TESTING HYPOTHESES Percentile Gain: 23 | <ul style="list-style-type: none"> • ENGAGING STs IN PROJECTS THAT INVOLVE GENERATING AND TESTING HYPOTHESES THROUGH: PROBLEM SOLVING, DECISION MAKING, INVESTIGATIONS, EXPERIMENTAL INQUIRY, SYSTEMS ANALYSIS TASKS & CREATING / INVENTING TASKS |
| QUESTIONS, CUES & ADVANCE ORGANIZERS Percentile Gain: 22 | <ul style="list-style-type: none"> • PRIOR TO PRESENTING NEW CONTENT, ASKING QUESTIONS THAT HELP STs RECALL PRIOR KNOWLEDGE, PROVIDE STs with DIRECT LINKS TO WHAT THEY HAVE STUDIED PREVIOUSLY • PROVIDE WAYS TO ORGANIZE & THINK ABOUT THE CONTENT |

To see how a high school was able to incorporate these high yield strategies and examine what they looked like across all subject areas, read: [Improving Adolescent Literacy: Strategies That Work](#), by Douglas Fisher



COGNITIVE COMPLEXITY LEVELS

WHAT IS COGNITIVE COMPLEXITY? WHY IS IT IMPORTANT?

- A valid way of classifying test items based on the cognitive demand inherent in the test item (developed by Norman Webb).
- FCAT items will be classified in three levels: low, moderate, and high.
- The same cognitive classification system used for the NAEP (National Assessment of Educational Progress).
- Knowing the cognitive demand of the FCAT in reading and math can help teachers and schools align the written, taught and tested curriculum and provide opportunities for students to receive instruction, guidance and practice in performing tasks that cut across these cognitive demands.
- Provides teachers with a framework for aligning and balancing the cognitive levels when preparing classroom assessments.

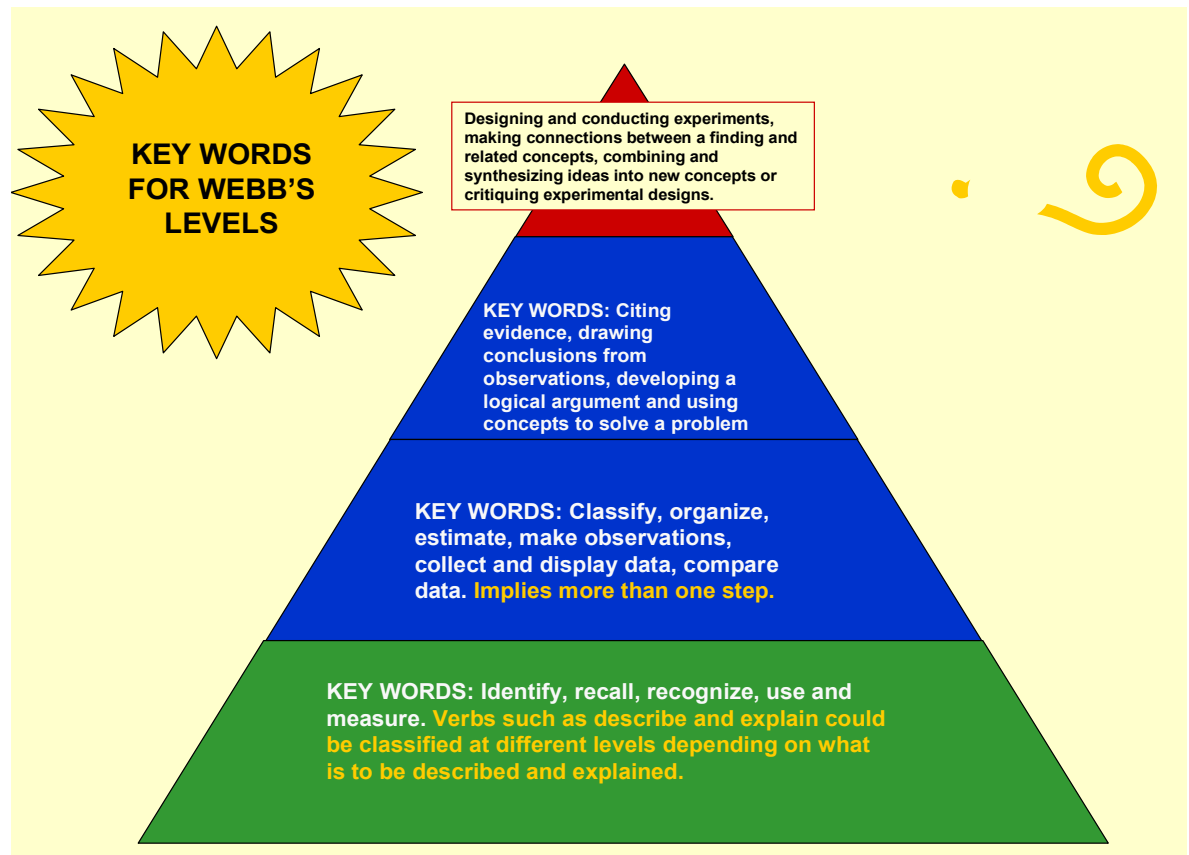
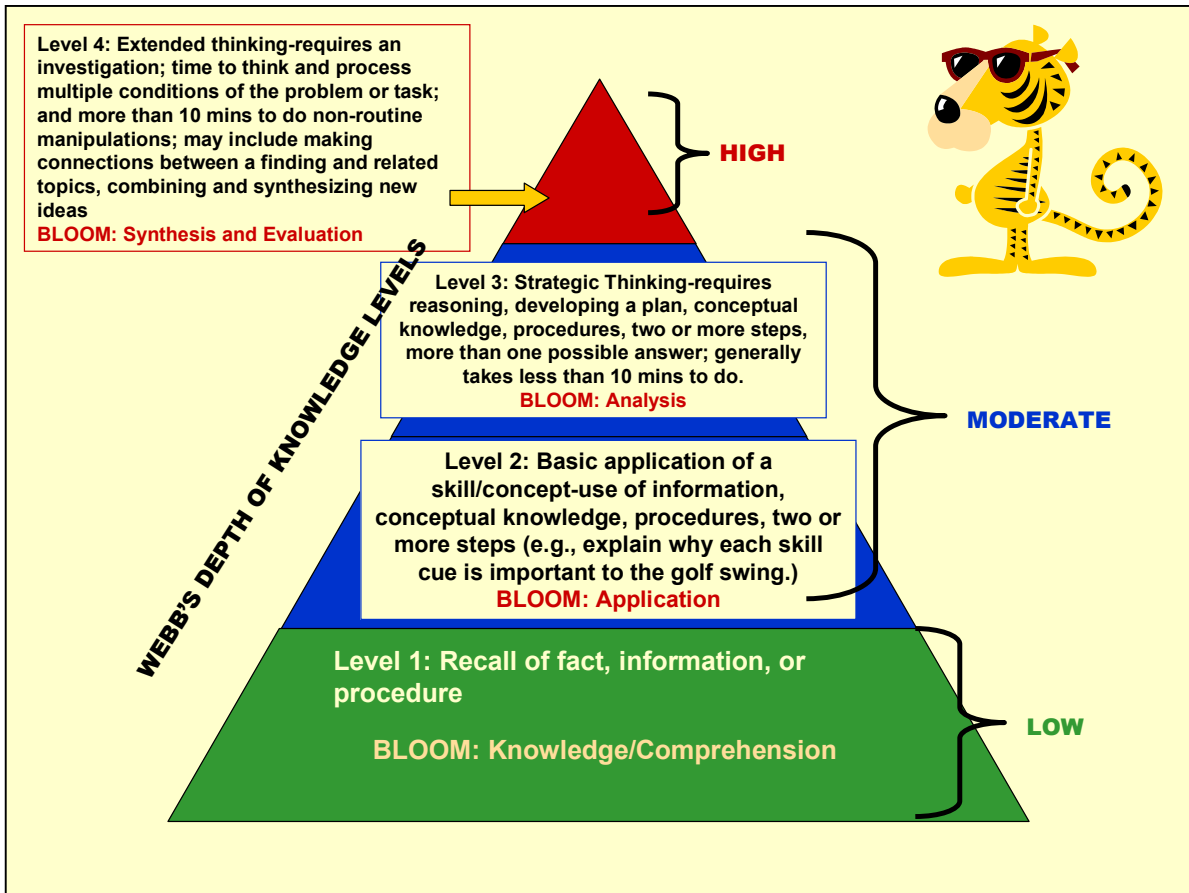
FCAT MATH DEPTH OF KNOWLEDGE LEVELS (COGNITIVE COMPLEXITY)

| Grade(s) | Low | Moderate | High |
|----------|-------|----------|-------|
| 3-4 | 25-35 | 50-70 | 5-15 |
| 5* | 10-20 | 50-70 | 20-30 |
| 6-7 | 10-20 | 60-80 | 10-20 |
| 8* | 10-20 | 50-70 | 20-30 |
| 9 | 10-20 | 60-80 | 10-20 |
| 10* | 10-20 | 50-70 | 20-30 |

HOW IS DEPTH OF KNOWLEDGE DIFFERENT THAN BLOOM?

- **Bloom's Taxonomy:** Required assumptions about students' instructional backgrounds and their individual approaches to a problem (*How students think.*)
- **Webb's Depth of Knowledge:** Classified by the cognitive demand inherent in the test items, not on assumptions about the student's approach to the item (*How students are required to think to understand skills and concepts within the content area.*)





ORGANIZING YOUR SCHOOL TO READ TO LEARN

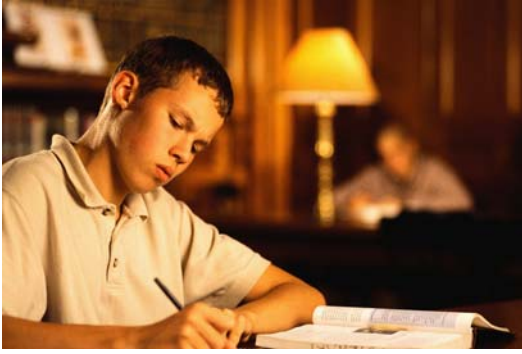
The following tool will assist schools in aligning their efforts to improve reading to learn. This tool represents elements of successful schools that have improved their reading achievement and research-based best practices in reading.

ORGANIZING YOUR SCHOOL TO READ TO LEARN / OROPALLO © 2005

| CONSIDERATIONS | NOTE TO TEACHERS | NOTE TO COMMITTEES |
|---|--|--|
| Consistency of use is a critical element in identifying strategies to use across the curriculum. | Although the school will identify strategies to utilize across content areas for consistency, teachers can teach and use additional strategies. Just be sure to teach and use the school-selected strategy until student owns and understands the strategy. | School-level, department level, grade level meetings can be a place to reinforce the use of the identified strategies and discuss the implementation and selection of these strategies. |
| LESS IS MORE! There are countless numbers of tools and strategies out there. Narrowing the focus by what the strategy teaches will be much more effective. Let data and purpose guide your selection. Students should have choices so that strategies reach diverse learners. | Strategies are tools for students to use, own, and make critical decisions on how to use. Focus on a few key strategies and then assist students in owning them. Students should be able to self select based upon the task, problem or type of text they are reading if they have had repeated exposure to using these tools. | Content area teachers can assist the school in selecting strategies that lend themselves to how their subject is organized and represented: cause & effect, compare & contrast, logical reasoning, abstract concepts, etc. Selecting key tools to assist students in learning these skills will be valuable. |
| Start with what the students need to know and be able to do: Standards, benchmarks, essential content knowledge, etc. | Planning with the end in mind will help teachers select tools that best fit with daily instruction. Teachers should focus in on the amount and type of text and what the ESSENTIAL LEARNING from this text should be. | Committees should discuss the concept of ESSENTIAL LEARNING for each subject/course being taught and the increments of essential knowledge along the way. Textbooks often have more than what is needed to capture the students understanding of the standards. Helping chunk text for critical information will help maximize instructional time. |
| Accountability for implementation of these strategies across the subjects and in each classroom should occur through support, walk-throughs and observations. They should also appear as part of the performance evaluation's reading focus (IDPDS), and student AIPs and IEPs. | If we know these practices work throughout the subject areas for understanding content and supporting reading to learn, we have a responsibility to use these tools and teach them to our students so that they become automatic. Schools should find ways to support teachers in using these strategies (reading coaches, professional development opportunities, peer mentoring, etc.) | Finding ways to support teachers in the use of these strategies can happen during school wide committees. Committees can assist in planning stages for using these strategies, creating focus lessons for teaching strategies, and providing a forum for discussion of the use and practice of these strategies. |

| CATEGORIES OF RESEARCH BASED STRATEGIES FOR READING TO LEARN | EXAMPLES (SCHOOLS WILL SELECT THEIR OWN BASED ON DATA & PREFERENCE) |
|--|---|
| ANTICIPATORY ACTIVITIES: Practices that elicit curiosity, provoke questions, access recall of newly learned information, activating students' prior/ background knowledge about a subject, topic, or concept. | <ul style="list-style-type: none"> • KWL • Anticipation Guides • I Used to Think, But Now I Know • Reciprocal teaching |
| THINK ALOUDS & SHARED READING: <u>Think aloud:</u> A deliberate selection of text in which the teacher reads publicly to the class or more small group (usually to emphasize a concept or as a model for learning). Text may or may not be visible to the students. <u>Shared reading:</u> Like the read aloud, a deliberate selection of text in which the teacher reads publicly to the class or small group but <u>negotiates</u> meaning, vocabulary, skill to be learned in an interactive process with the students. In shared reading, text should be visible to the students. | <ul style="list-style-type: none"> • Modeling writer's craft with literature • Teaching rules of notice of a textbook: headings, captions, etc. • Teaching voice or tone through read aloud • Teaching visual text such as: graphs, tables, illustrations, maps • Using context to decode vocabulary • Getting unstuck strategies • Subject area organization / representation focus lessons |
| QUESTIONING & RECIPROCAL TEACHING: Effective questioning involves bridging levels of critical thinking for teachers to monitor and guide student understanding in reading, writing, listening, and reflecting, and for students to self monitor their understanding of text and language which is unfamiliar. | <ul style="list-style-type: none"> • Blooms Taxonomy for generating effective questions • Reciprocal teaching • QAR • QtA • Stump the Teacher |
| NOTE TAKING & NOTEMAKING: <u>Note taking:</u> Taking and using notes effectively from lecture or class discussion. <u>Note making:</u> Recording notes from text sources to make sense, clarify, and better understand what is read. | <ul style="list-style-type: none"> • Cornell notes • Double entry journals • Q/A journals |
| GRAPHIC ORGANIZERS: Visual display tools for promoting, extending, prompting students for understanding concepts, relationships, rules in and across subject areas. | <ul style="list-style-type: none"> • Concept Maps • Thinking maps • Tree diagrams and Flow charts |
| VOCABULARY INSTRUCTION: Strategies that focus on the study of words through in-depth decoding and application and repeated exposure. NOT ROTE MEMORIZATION. | <ul style="list-style-type: none"> • Word maps • Linear Arrays • Vocabulary Cartoons |
| WRITING TO LEARN: Writing can assist students in processing, reflecting and uses three different kinds of knowledge: declarative, procedural & conditional (Fisher & Frey, 2004) | <ul style="list-style-type: none"> • Learning logs • Quick writes • Response journals |





TEACHING HOW TO READ A MATHEMATICS TEXT

Teachers can better utilize the text as a resource if they teach their students some of these strategies for reading a math textbook:

- **Teach students to read slowly.** A math text is not like literacy fiction and it is important for students to not skim over critical information such as steps to a procedure.
- **Model how to recognize most of the text counts.** Math texts do not often include repetitive information like other subject texts. Almost every word will count since there are fewer words and text included.
- **Model with students how to check for understanding before reading on.** Because math texts do not often repeat important information, it will be critical to teach students not to read on until they understand what they have read, sentence-by-sentence.
- **Teach students how to read diagrams, tables and illustrations.** It will be critical to show students how to read these types of visual text often found in mathematics texts. Point out that these should **NOT BE SKIMMED OR IGNORED.**
- **Have students write to learn.** Guide students in writing as they read by:
 - Working out proofs, derivations and sample problems
 - Making notes to yourself on post-its and place it right in the text
 - Capture key recall words and vocabulary on post-its or bookmarks with either definitions in their own words or reference to why these terms are important
 - Use math journals to capture questions, explanations of how to solve problems and illustrations that can be used to remember key terms, a process or procedure
- **Have students create review cards with formulas, properties, & facts.**
- **Show students how to use other resources such as the internet or other math texts for gathering information.**
- **Read the chapter BEFORE and AFTER class.**
- **Encourage repeated reading of texts.**

RULES OF NOTICE

Sample Textbook Page

SYMBOLS

March is **National Peanut Month**. In the United States, 90% of the peanuts are grown in nine states. The table below shows the pounds of peanuts produced in those states in 2003. Source:

<http://www.aboutpeanuts.com/every.html#anchor241393>

HEADINGS

| State | Pounds Produced in 2003 |
|----------------|-------------------------|
| Alabama | 508,750,000 |
| Florida | 345,000,000 |
| Georgia | 1,863,000,000 |
| New Mexico | 45,900,000 |
| North Carolina | 320,000,000 |
| Oklahoma | 98,000,000 |
| South Carolina | 57,800,000 |
| Texas | 810,000,000 |
| Virginia | 95,700,000 |



PICTURE WALKS

ACADEMIC VOCABULARY

TABLES, GRAPHS, ILLUSTRATIONS

a. What was the total number of pounds of peanuts produced in these nine states in 2003?

b. What was the total number of pounds of peanuts produced in the United States in 2003?

SAMPLE PAGE: GLENCOE WEEKLY PRACTICE PAGE



STEP ONE: The teacher will give a description, explanation, or example of the new term.

- Provide learners information about the term.
- Determine what the learner already knows about the term.
- Ask learners to share what they already know as a means of monitoring misconceptions.
- Ask learners to share what they already know to use this knowledge as a foundation for more learning.
- Utilize examples, descriptions, but **not definitions**. **Definitions** are not a recommended method for vocabulary instruction as they do not provide learners an informal, natural way to learn new vocabulary.
- Instruct learning of proper noun terms through identifying characteristics of the proper noun.

STEP TWO: The teacher will ask the learner to give a description, explanation, or example of the new term in his/her own words.

- Remind learners to not copy, but use their own words.
- Monitor students to determine if any confusion exists.
- Provide more descriptions, explanations, or examples if necessary.
- Request that students record these in their Academic Notebook Worksheet. These notebooks can travel with the learner as he/she moves through each grade level and become a compilation of vocabulary terms mastered.

STEP THREE: The teacher will ask the learner to draw a picture, symbol, or locate a graphic to represent the new term.

- Provides learners a nonlinguistic method of vocabulary mastery.
- Share examples of other learners' drawings or allow students to work in teams to help those who complain that cannot draw.
- Teach the concept of speed drawing for those who labor too long over their work.
- Ask learner to share their work.
- Use graphics from magazines or the Internet.
- Illustrating terms through symbols, drawing the actual term, illustrating with a cartoon, or drawing an example of the term should be encouraged.

STEP FOUR: The learner will participate in activities that provide more knowledge of the words in their vocabulary notebooks (For notebook and academic notebook worksheet go to: <http://www.jc-schools.net/tutorials/vocab/notebook.htm>)

- Remind learners to not copy, but use their own words.
- Distribute the Academic Notebook Worksheet to assist learners in organizing their vocabulary terms.
- Encourage learners to identify prefixes, suffixes, antonyms, synonyms, related words for the vocabulary term as "new info" on the Academic Notebook Worksheet.
- If English is a second language to the learner, provide an opportunity to translate the word into their native language

STEP FIVE: The learner will discuss the term with other learners.

Pair-Share Strategy:

- THINK: Allow think time for learners to review their own descriptions and images of the terms.
- PAIR: Put learners in pairs to discuss their descriptions, images, and any new info related to the terms.
- SHARE: Provide opportunity for groups to share aloud and discuss conceptions and misconceptions.
- Monitor as learners help each other identify and clear up confusion about new terms.

STEP SIX: The learner will participate in games that provide more reinforcement of the new term.

A variety of games are available at this website (<http://www.jc-schools.net/tutorials/vocab/notebook.htm>) PowerPoint Games, Word Game Boards, Excel Games, WORDO, Twister, Fly Swat.

- Walk around the room and check their work when learners are working on their Academic Notebook Worksheet.
- Check the notebooks to evaluate accuracy.
- Listen for misconceptions when learners are playing games/activities.
- Provide an opportunity for learners to work together.

Always model the pronunciation of new words. Help students make connections to words already introduced.

Vocabulary

MATH

PREFIXES & MATHEMATICS

| NUMBER PREFIXES | | |
|------------------------|-----------|--|
| Uni/mono | one | unit, unicycle, monopoly, unify, unique |
| bi/di/du | two | binomial, binary, bisect, dioxide, dual |
| tri | three | tricycle, triangle, trillion, triple, triathlete, triplet |
| quad/tetra | four | quadratic, quadrant, quarter, quadruple, tetrahedron |
| pent/quint | five | pentagon, pentathlon, quintet, quintuplet |
| hex | six | hexagon, hexameter |
| hept/sept | seven | heptagon, heptameter, September, septuagenarian |
| oct | eight | octet, octopus, October, octane, octagon, octave |
| non/nove | nine | nonagenarian, November, nonagon |
| dec/dec | ten | December, decimal, decade, decibel, decathlon, decimeter |
| cent/hect | 100 | century, cent, centimeter, centennial, hectare |
| milli/kilo | 1000 | million, millimeter, kilometer, kilogram, kilowatt |
| myriad | 10,000 | myriad |
| SIZE & AMOUNT PREFIXES | | |
| micro | small | microscopic, microfilm, microphone, microscopic, microcosm |
| macro | large | macroscope, macrobiotic, macrocosm |
| magni | great | magnify, magnificent, magnum, magnitude |
| mega | huge | megalith, megalomania, megaton |
| equi | equal | equal, equator, equation, equidistant, equity |
| hyper | excessive | hyperbole, hyperactive, hyperextension, hypercritical |
| omni | all | omnivorous, omnipotent, omnipresence, omnibus |
| pene | almost | peninsula, penultimate, penumbra |
| poly | many | polygon, polyester, polyglot, polysyllabic |
| super | greater | superior, Superman, supernova, superpower, supernatural |
| ultra | beyond | ultramodern, ultrasonic, ultraviolet |

OROPALLO CONSULTING (2005)

TEACHING CONTENT VOCABULARY

Students learn vocabulary through repeated exposure to words. Instruction needs to be a process of letting students figure out meaning within the context of your subject. Always start with asking students to explain what is going on in the text as they are uncovering meaning of the word. Have students represent the words in a variety of ways: visually, antonyms/synonyms, identify where they have heard it before or parts of the word before. Use strategies like word walls, vocabulary trees, vocabulary bookmarks, word maps, etc.

Beck, McKeown, & Kucan (2002)

LATIN ROOTS

| | | |
|------------|-----------|-------------------------------|
| annu-enni | year | annual, biennial, centennial |
| cede/ceed | go | recede, antecede, succeed |
| flex/flect | bend | flexible, reflex |
| form | shape | form, formation, transform |
| mult | many | multiply, multitude, multiple |
| var | different | vary, variable, variety |

GREEK ROOTS



| | | |
|-------|-----------|--|
| gon | angle | pentagon, hexagon, polygon, octagon |
| gram | written | diagram, grammar, epigram, telegram |
| graph | write | graphic, pictograph, photograph, telegraph |
| meter | measuring | thermometer, barometer, odometer |
| | device | |

Help students learn these word parts and keep adding to this list. Remember, students retain vocabulary through REPEATED EXPOSURE!



VOCABULARY STRATEGIES

K.I.M. = KEY IDEA WORD, INFORMATION, MEMORY CLUE

| K KEY IDEA | I IMPORTANT INFORMATION & RELATIONSHIPS | M MEMORY CLUE |
|---------------|---|---|
| drought | Little or no rain over a period of time. Like in the Midwest this summer. |  |
| coup | Takeover of government by military. Like what happened in Cuba. |  |

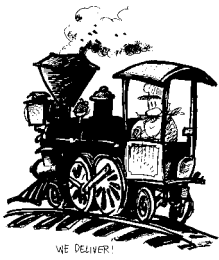
USING ANALOGIES

VACCA & VACCA (1996)

STEPS TO WORD ANALOGIES:

1. Prepare students for creating word analogies by a detailed discussion of the reasoning process in making analogies and modeling both examples and non-examples.
2. Guide students in group activities to identify relationships between word pairs, then extend this relationship to another pair.
3. Create word analogy activities (individual, paired, small groups) to practice this complex task.
4. When students have become familiar with creating analogies, choose essential vocabulary from text or content and / or academic vocabulary and use this strategy as one of the ways for students to understand word meanings.

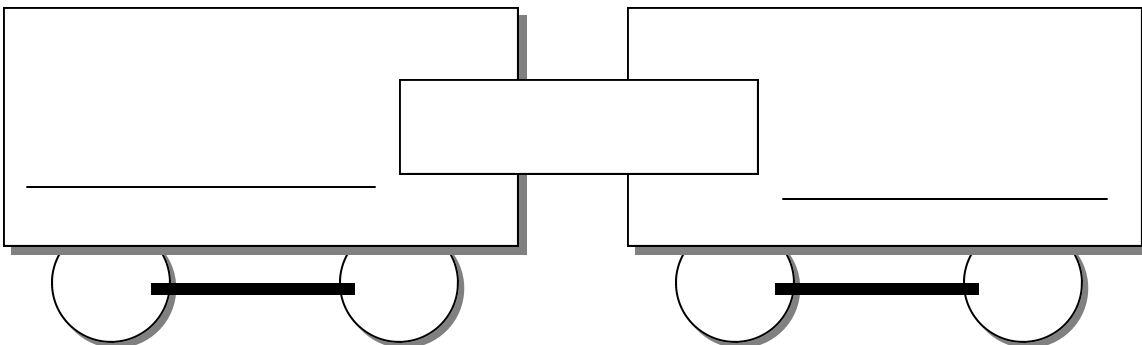
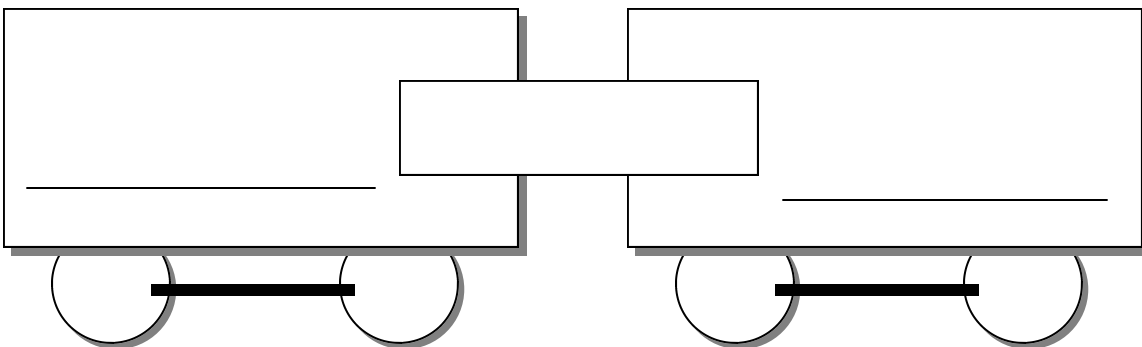
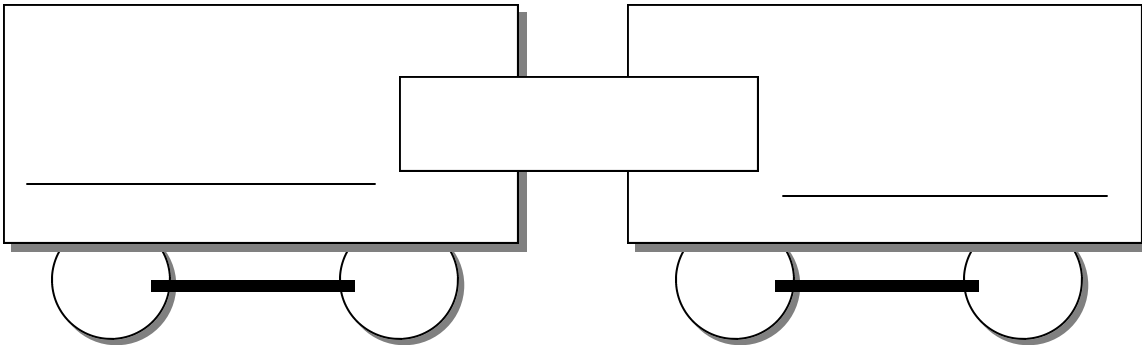
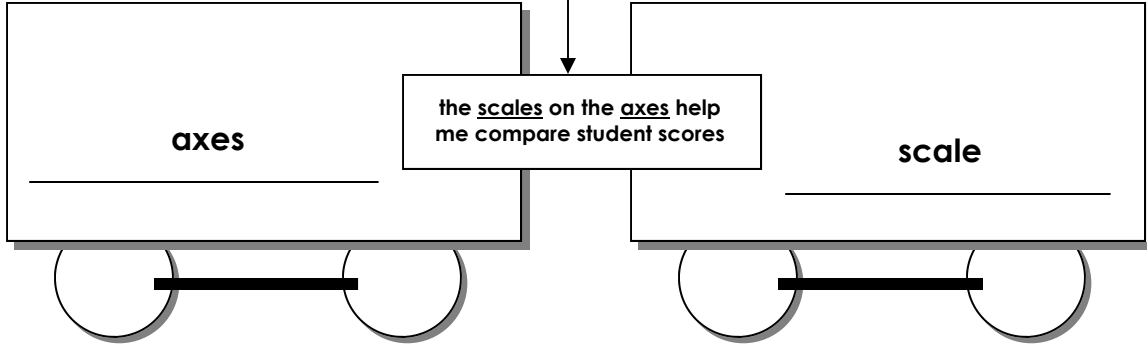
| TYPE | EXAMPLE |
|---------------------|---|
| Part to whole | battery: flashlight; hard drive: computer |
| Cause & Effect | fatigue: yawning; itching: scratching |
| Person to Situation | mother: home; teacher: school |
| Synonym | obese: fat; slender; thin |
| Antonym | poverty: wealth; sickness: health |
| Geography | Chicago: Illinois; Denver: Colorado |
| Measurement | pound: kilogram; quart: liter |
| Time | March: spring; December: winter |



TRAIN TO KNOW-WHERE©

Using this week's vocabulary words, "connect" two rail cars with words that might belong together and show how they relate in the car connection. Below is an example:

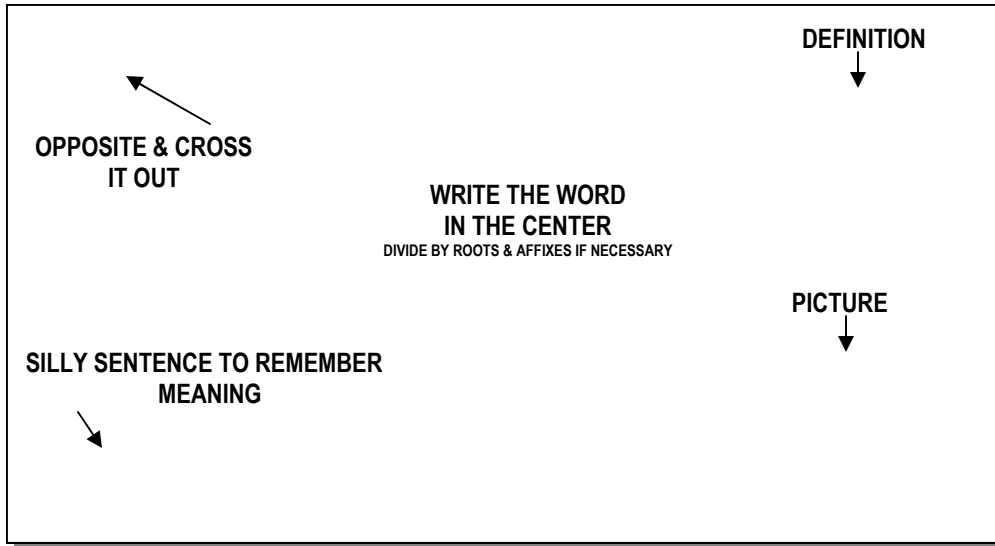
This should show how these words relate.





WORD FRAMES

WORD FRAMES are a way to learn and manage new vocabulary by creating your own personal flashcards. Here is how to create your word frames:



EXAMPLE

ROOTS, AFFIXES

~~Look Backwards~~

PREDICTION

— speak —

(Noun)

look forward,
foretelling

Dictator Napoleon looked ahead by gazing in a crystal ball.

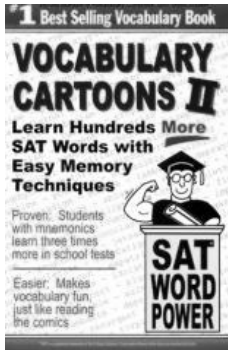
Here is an example of a WORD FRAME CARD that you can use as a model for your own.

Use your WORD FRAME CARDS to collect, learn and practice learning important words for class.

MY NOTES FOR USING WORD FRAME CARDS:



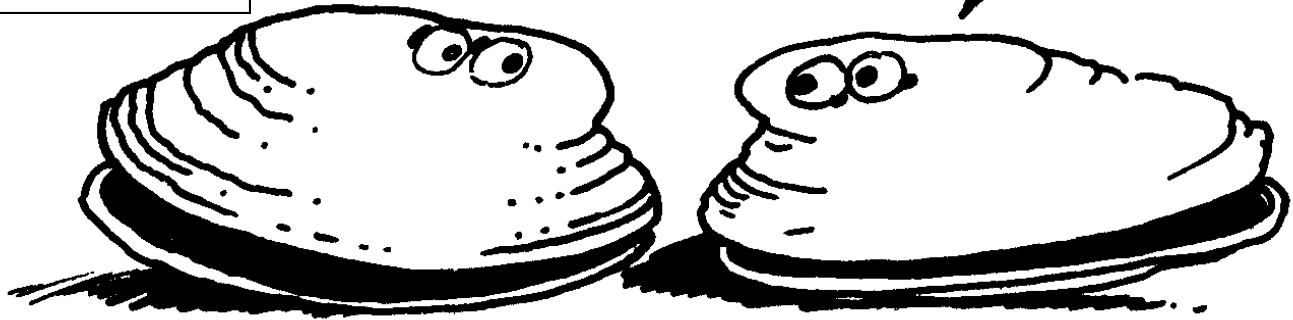
Creating Math Vocabulary-Toons



VOCABULARY CARTOONS: THIS BOOK SERIES CAN BE FOUND AT AMAZON.COM

Don't you think it would be pretty gross to find a clam who was VERBOSE?

After all, the expression "clam up" came from us!

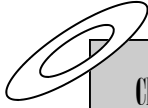


OBTUSE

The obtuse angle of the hands on the clock tells me that I am very, very late!



I GET IT !!! TEXT TOOLS



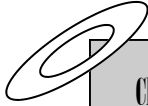
CHALLENGE ME CARDS!

Students jot down words they come across in class or in reading and record their meaning (s) on a card. Students are then asked to also look in their every day world and see if they can find that word again. It could be from another class or from their day to day routines. When they have practiced their challenge cards, they invite people/ classmates to challenge them. They need to collect their signatures on the back. Cards are held together by a binder ring.

| | | | |
|-----------------------|------------------------|-----------------------|------------------------|
| CHALLENGE WORD | I Found it again here! | CHALLENGE WORD | I Found it again here! |
| CHALLENGE WORD | I Found it again here! | CHALLENGE WORD | I Found it again here! |



I GET IT !!! TEXT TOOLS



CHALLENGE ME CARDS!

We know that repeated exposure to vocabulary is the best way to learn words. Embarking on vocabulary as word study will also enhance vocabulary attainment. Adapt vocabulary instruction to include visual representations, synonym and antonym work, word hunts, word walls, and word sorts.

| | |
|--|--|
| <p>CHALLENGE ME!</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> | <p>CHALLENGE ME!</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>CHALLENGE ME!</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> | <p>CHALLENGE ME!</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |



Ticket Out The Door

Today I learned that matter has three states: solids, liquids, and gasses. It can change through physical and chemical changes.

Predict what you will learn today
about converting fractions to decimals



SAMPLE QUESTIONS OR TASKS FOR:

Ticket Out The Door

- Use two vocabulary words from the chapter in a sentence.
- Describe where in the real world we might use this chapter's knowledge of mathematics.
- What did you learn today that you couldn't do yesterday? If you still do not understand what we did today, what questions do you have?

THE CRYSTAL BALL

- Predict what the next step in the process of solving the problem will be.
- Predict what you think this graph/table is about?
- Predict what the headings and subheadings will tell us about the main idea of this chapter.
- Predict what mathematical principles we will need to know to perform the tasks in this chapter.
- Predict what steps are your greatest challenge in solving this problem.



Ticket Out The Door

Ticket Out The Door



MY WEEKLY VOCABULARY TRACKING SHEET

NAME _____

- ✓+** I understand even more about the word I have been taught.
- ✓** I understand the word and am not confused about how it is used.
- ✓-** I am not sure I understand the word, but have heard it before and may be able to guess at the meaning.
- X** I do not know this word at all.

| DATE | MY NEW WORD | HOW MUCH DO YOU KNOW ABOUT THIS WORD? COLOR IN YOUR RATING | | | | MY EFFORT | | |
|------|-------------|---|---|----|---|-----------|---|---|
| | | ✓+ | ✓ | ✓- | X | 1 | 2 | 3 |
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EFFORT SCALE: 1 — I tried my best to know this word; 2 — I tried a little to know this word; 3 — I did not try at all to know this word.