

EFFECTIVE TEACHING STRATEGIES

**Material Packet
October, 2008**



**CONNECTICUT ACCOUNTABILITY
FOR LEARNING INITIATIVE**

Effective Teaching Strategies Agenda

Introduction:

Classroom Strategies That Work! along with *The Art and Science of Teaching*, both by Bob Marzano, provide the basis for examining effective teaching strategies.

Planning to Use Effective Teaching Strategies

How do I

- Effectively organize a lesson
- Meet the needs of my students

Positive Learning Environment Focused on Learning

What will I do to?

- Establish and communicate learning goals
- Provide feedback
- Recognize and celebrate student success?
- Promote effort

Interact With New Knowledge

What will I do to?

- Activate prior knowledge
 - Cues
 - Advanced Organizers
- Incorporating note taking and summarizing
- Integrate non-linguistic representations
- Provide opportunities for nonfiction writing
- Use questioning skills

Deepen and Enhance Understanding of New Knowledge

What will I do to?

- Make effective use of homework and incorporate practice
- Examine similarities and differences
 - Comparisons
 - Classification
 - Metaphors
 - Analogies

Lesson Plan _____

Time _____

Teacher(s) _____

Dates _____

Subject(s) _____

Standard(s)

Indicators/objectives

Prior knowledge/Connections

Vocabulary

Assessment – Essential Question: _____

-*Informal*

-*Formal*

-*Formative*

-*Summative*

Materials

Technology

Instructional Strategies

Learning Procedures

Intervention

Grouping Strategies

Enrichment

Reflection

Unit _____
 Teacher(s) _____

Dates _____
 Subject(s) _____

<p>Standard(s)</p>	<p>Reflection</p>
<p>Objectives/Goals:</p>	<p>Grouping Strategies</p>
<p>Feedback/Assessment Plans:</p>	<p>Technology/Interdisciplinary connections</p>
<p>Big Idea:</p>	<p><i>Bloom's Taxonomy</i></p> <p>___ REMEMBER (list, describe, retrieve, identify) ___ UNDERSTAND (interpret, classify, compare) ___ APPLY (use, implement) ___ ANALYZE (organize, deconstruct, compare) ___ EVALUATE (judge, hypothesize, critique) ___ CREATE (design, invent, construct)</p>
<p>Essential Questions:</p>	<p>Procedures/Strategies employed:</p> <p>___ Establish Objectives ___ Hypotheses: Generating & Testing ___ Summarizing ___ Note taking ___ Learning Environment: Effort ___ Advance Organizers ___ Cueing ___ Comparing ___ Metaphors ___ Classifying ___ Analogies ___ Non-fiction Writing ___ Questioning ___ Practice ___ Homework ___ Providing Feedback ___ Nonlinguistic Representation</p>
<p>Instructional Activities</p>	<p>Intervention/Modifications (in class support, reteaching, tutoring, afterschool program, centers)</p>

READING STRATEGIES FOR THE CONTENT AREAS
DURING-READING STRATEGIES

ANOTHER KIND OF OUTLINE

Directions: Select three BIG ideas or concepts from the reading assignment. Summarize those and enter them in the "BIG Idea" column. In the "Details" column, enter supporting information about the BIG idea.

BIG Idea	Details

READING STRATEGIES FOR THE CONTENT AREAS
DURING-READING STRATEGIES

ANOTHER KIND OF OUTLINE

Directions: Select three BIG ideas or concepts from the reading assignment. Summarize those and enter them in the "BIG Idea" column. In the "Details" column, enter supporting information about the BIG idea.

BIG Idea	Details
Classification of criminal conduct	<p>Crimes against:</p> <ul style="list-style-type: none"> • a person • property • the government • public peace and order • real estate • consumers • decency
Elements of every crime	<p>Crime against society:</p> <ul style="list-style-type: none"> • a duty to do (or not do) a certain thing • an act or omission in violation of that duty • criminal intent
Defenses in criminal charges	<ul style="list-style-type: none"> • Procedural defense—problems based on procedures of obtaining evidence, arrest, questioning, or punishment • Substantive defense—disprove, justify, or excuse the alleged crime • Try to discredit state's facts "when they didn't do it"
Types of crimes	<p>Felony—serious Examples: forgery, murder, rape, kidnapping</p> <p>Misdemeanor—less serious Examples: speeding, DWI</p> <p>Infraction—only fined Examples: parking ticket, littering</p>

EXPANDING MY MIND

Subject: _____ Print/Text: _____ Pages: _____

I already know . . .	My friends and classmates shared with me . . .	And I learned when I read about it . . .	And then when we talked about it, I learned even more . . .

Reflection: What connections did you make as you added information to each column? _____

EXPANDING MY MIND

Subject: Malcolm X—the first 20 years Print/Text: teacher's Pages: www.brothermalcolm.net

I already know . . .	My friends and classmates shared with me . . .	And I learned when I read about it . . .	And then when we talked about it, I learned even more . . .
<ul style="list-style-type: none"> • Malcolm X is a famous African American • A movie was made about his life. • "Malcolm X" was not his real name. • I know he would be about the age of my grandpa if he were alive today. 	<ul style="list-style-type: none"> • Malcolm X was from the Midwest—born in Omaha and lived in Milwaukee, Wisconsin, and Michigan as a boy. • His life as a kid wasn't all fun or like our lives. • His dad made a lot of speeches—he was a Baptist preacher. • Malcolm Little was his real name. 	<ul style="list-style-type: none"> • His home burned down when he was little. • His dad died—when Malcolm was in kindergarten—he was run over—some say he was murdered by a white supremacist group. • His mom was committed to a mental hospital when he was in junior high—was there 26 years. • He knew as a boy he wanted to be lawyer—his teacher told him that wasn't realistic. He even said, "That's no realistic goal for a nigger." • He was in a juvenile home for a while and then lived with lots of foster parents. 	<ul style="list-style-type: none"> • I can't imagine having all those things happen to me. • He had all kinds of jobs—soda jerk, shoe shiner, dishwasher, waiter—even worked for the railroad. • He lived in Harlem as well as Michigan as a teenager. • He was known as "Big Red" in New York—and even worked as an entertainer in a New York night club—his stage name was Jack Carlton. • He thought his dad liked him the best of all the kids because he had the lightest complexion—and his mom disliked him for the same reason.

Reflection: What connections did you make as you added information to each column? It seems like what happened in his early life—as a boy and a teenager—probably influenced his beliefs and his actions as an adult. It will be great to read the book in class and see how his childhood connects with the rest of his life. (P.S.—it helped to talk about his early life. Time was really different then.)

John Q. Student Biology 101 April 1, 2000	
Phylum	Arthropods
subphylum	Chelicerata
Chelicerata	2 parts: → prosoma (first pair of appendages are for feeding) ↘ opisthoma
examples	scorpions, spiders, mites, ticks
Prosoma & Opisthoma	sensory, feeding, and locomotor tagma
Chelicerae	<ul style="list-style-type: none"> • pincerlike or chelate • used for feeding • first pair of appendages
Pedipalps	<ul style="list-style-type: none"> • second pair of appendages • used for sensory purposes
	feeding locomotion reproduction
Phylum arthropods is made up of subphylum chelicerata. Subphylum chelicerata is characterized by two parts called prosoma and opisthoma. The prosoma and cephalothorax are sensory, feeding, and locomotor tagma. The chelicerae is the first appendage and refers to the pincerlike	
The pedipalps are the 2nd pair of appendages, and they are used for sensory purposes: feeding, locomotion, and reproduction.	

Learning Toolbox - Home
Note Taking

READING STRATEGIES FOR THE CONTENT AREAS
DURING-READING STRATEGIES

NOTE TAKING USING BOTH SIDES OF THE BRAIN

Topic: _____

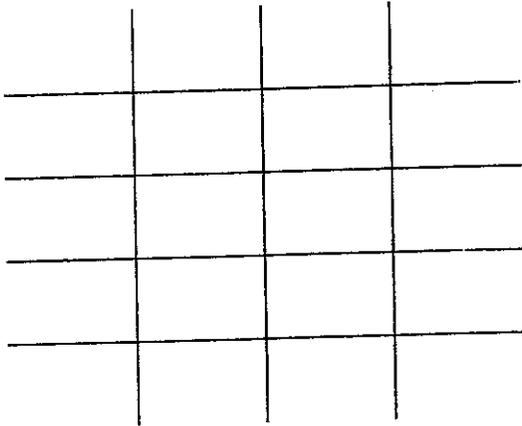
Words and Phrases

Visuals and Pictures

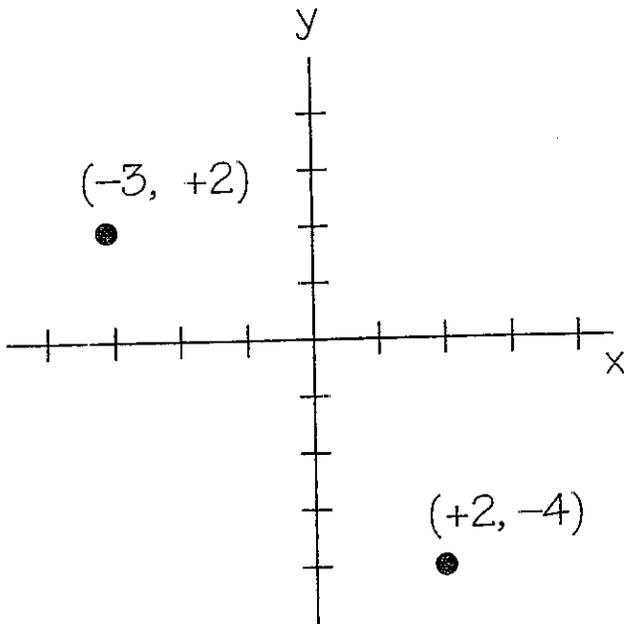
Summary

NOTES

In Pictures



Geometry + Algebra =
Plane Coordinate Geometry



In Words

Grid system

- used on maps
 - quadrants/sections
- developed by French mathematicians René Descartes and Pierre de Fermat—17th century
- example of plane coordinate geometry
 - geometry & algebra
 - geometry—points, lines, polygons
 - algebra—use algebraic equations to describe

Descartes

- 90° angle
- x axis
- y axis
- determine location as an ordered pair
 - 1st number = x
 - 2nd number = y

RECIPROCAL TEACHING—SUMMARIZE, QUESTION, CLARIFY, PREDICT

Reading Assignment: _____

Directions: You're the teacher! During reading and after you complete your reading assignment: (1) summarize your learning, (2) identify at least two questions that still need to be answered, (3) identify two or three terms or ideas that need to be made clearer, and (4) make one or two predictions about where further reading will take you

Summarize:

Question:

Clarify:

Predict:

RECIPROCAL TEACHING—SUMMARIZE, QUESTION, CLARIFY, PREDICT

Reading Assignment: Science—pp. 186–192—Minerals

Directions: You're the teacher! During reading and after you complete your reading assignment: (1) summarize your learning, (2) identify at least two questions that still need to be answered, (3) identify two or three terms or ideas that need to be made clearer, and (4) make one or two predictions about where further reading will take you.

Summarize:

All rocks are made up of minerals, the building block of rocks. You can actually see some minerals in rocks, but others are so small you cannot.

- Silicates—quartz, feldspar, mica
- Carbonates—limestone, aragonite
- Oxides—hematite
- Sulfides—pyrite

Question:

What is the chemical composition of silicates? Of carbonates? What does the "specific gravity" of a mineral really mean?

Clarify:

It would help my understanding of minerals if I understood the "language of minerals"—terms like cleavage, density, and transparency.

Predict:

I think we will do class activities about characteristics of minerals, so further reading in that area would help me understand them.

Teacher Prepared Notes (Strategy for ELL Learners)

Notes	Graphic	Questions
I. Teacher organizes and adds notes:		
II.		

Name _____ Date _____ Lesson _____

Essential Question(s):

--	--

Summarize ► Synthesize ► Generalize:

Why is it important for me to remember this information? How will I remember this information?

Models and Examples

Name _____ Date _____ Lesson _____

Essential Question(s):

1. What are the three key reasons the United States entered WWII?
2. What was the economic situation in the United States just before it entered WWII, and what effect did the war have on the economy?
3. Based on the reading selection, who is becoming a very important political figure as events unfold?
4. List four central European countries and describe their feelings about war at their front door.

Key Vocabulary for today's lesson:

Axis
 Allied
 League of Nations
 United Nations
 Pearl Harbor
 Eisenhower
 supply/demand
 manufacturing

Allied Powers

Axis Powers

Summarize ► Synthesize ► Generalize:

Certain countries aligned themselves within a framework of isolationism philosophy.
 Alliances made at the beginning of the war predicted the outcome of WWII.
 Ordinary Italian and French citizens had much in common.
 The Holocaust has become the all-encompassing WWII vision for many people.
 Europe would be very different today had Hitler never come to power.

Why is it important for me to remember this information? How will I remember this information?

It is important for me to remember the countries in the T-chart so that as I continue to study about WWII, I can immediately associate the country with its politics and view of the war and world.

Note Taking Template: Focus on Metacognition

Question	Predict
Clarify	Summarize/Synthesize
Visualize	Connect

Note Taking Sample: Focus on Metacognition

Example from Grade 4–5, Hatchet by Gary Paulson

Question <ul style="list-style-type: none">• Why did Brian (Hatchet) feel apprehensive about visiting his father?• What would I have done if I had been in the same situation as Brian?• Why does divorce hurt so much?• What will Brian do to survive his ordeal?	Predict <ul style="list-style-type: none">• Brian will decide to swim out to the airplane to get the supplies he so desperately needs.• Brian's father will send search parties out to look for Brian.• The hatchet will somehow help Brian survive.
Clarify <ul style="list-style-type: none">• Brian is angry with his mother because he doesn't understand her betrayal.• The Canadian wilderness is as remote as remote can be.	Summarize/Synthesize <ul style="list-style-type: none">• Brian tried unsuccessfully to stay warm the first several days in the wilderness.• A moment of anger and frustration can be a breakthrough, defining moment.
Visualize <ul style="list-style-type: none">• The airplane Brian took off in is so very small.• The Canadian wilderness is a sea of trees and lakes sprinkled with bears and other hazards.	Connect <ul style="list-style-type: none">• The warmth Brian felt with that first fire must have felt like the large fire at scout camp. The feeling was glorious!• When Brian was at his lowest, he still did not give up hope.

Feedback: True or False Crazy Eights!

- ___1. Feedback is information about how we did in light of a goal.
- ___2. Feedback should be corrective in nature
- ___3. Telling a student that his answer is “right” or “wrong” is better than no feedback at all.
- ___4. “I liked the way that you started all your sentences with a capital letter,” is a viable example of teacher feedback.
- ___5. Feedback after a test is best when given about 24 hours later.
- ___6. When is it best to give a test? One day after the learning situation.
- ___7. Feedback frequently involves giving a grade or comment.
- ___8. Feedback is most effective when it comes directly from the teacher.

Elements of Educative Assessment System

1. Standards

a. specs b. model or exemplars c. clear criteria

2. Feedback

a. facts b. impact c. relationship to goal

3. Elements of evaluation

a. judgments about facts and impacts b. praise/comment about performance in light of expectations

4. Elements of guidance

a. Advice about what to do in light of feedback b. redirection about current practice

Bob Marzano looks at these action steps in answering the question, “What will I do to establish and communicate learning goals, track student progress, and celebrate success?”

- 1. Make a distinction between learning goals and learning activities or assignments*
- 2. Write a rubric or scale for each learning goal.*
- 3. Have students identify their own goals.*
- 4. Assess students using a formative approach*
- 5. Have students chart their own progress on each goal.*
- 6. Recognize and celebrate growth.*

FIGURE 4.5
Guidelines for Effective Praise

Effective Praise	Ineffective Praise
<ol style="list-style-type: none"> 1 Is delivered contingently 2 Specifies the particulars of the accomplishment 3 Shows spontaneity, variety, and other signs of credibility; suggests clear attention to the students' accomplishments 4 Rewards attainment of specified performance criteria (which can include effort criteria) 5 Provides information to students about their competence or the value of their accomplishments 6 Orients students toward better appreciation of their own task-related behavior and thinking about problem solving 7 Uses students own prior accomplishments as the context for describing present accomplishments 8 Is given in recognition of noteworthy effort or success at difficult (for <i>this student</i>) tasks 9 Attributes success to effort and ability, implying that similar successes can be expected in the future 10 Fosters endogenous attributions (students believe that they expend effort on the task because they enjoy the task and/or want to develop task-relevant skills) 11 Focuses students' attention on their own task-relevant behavior. 12 Fosters appreciation of, and desirable attributions about, task-relevant behavior after the process is completed 	<ol style="list-style-type: none"> 1 Is delivered randomly or unsystematically. 2 Is restricted to global positive reactions. 3 Shows a bland uniformity that suggests a conditional response made with minimal attention 4 Rewards mere participation without consideration of performance, processes, or outcomes 5 Provides no information at all or gives students no information about their status 6 Orients students toward comparing themselves with others and thinking about competing 7 Uses the accomplishments of peers as the context for describing students present accomplishments 8 Is given without regard to the effort expended or the meaning of the accomplishment. 9 Attributes success to ability alone or to external factors such as luck or low task difficulty. 10 Fosters exogenous attributions (students believe that they expend effort on the task for external reasons — to please the teacher, win a competition or reward etc.) 11 Focuses students attention on the teacher as an external authority who is manipulating them 12 Intrudes into the ongoing process distracting attention from task-relevant behavior.
<p>Source: Brophy, J. (1981) Teacher praise: A functional analysis. <i>Review of Educational Research</i>, 51 5–32. Adapted by permission</p>	

dard of performance. The meta-analyses by Wiersma (1992) and by Cameron and Pierce (1994) both provide strong support for the generalization that reward works fairly well when it is based on the attainment of some performance standards. In fact, nine separate studies in the Wiersma meta-analyses, considered as a group, indicate that the average effect size for reward

used in this way is .38. Findings similar to these led Cameron and Pierce to note:

Rewards can have a negative impact on intrinsic motivation when they are offered to people for engaging in a task without considering any standard of performance. In a classroom, this might occur if a teacher promised students tangible rewards simply for doing an activity. [However], this would not occur if the teacher used the same re-

Case Study. Grade 8 Science	Practices Promoting Effort
<p>Cali Clouet teaches science at a middle school; she has designed her curriculum to emphasize inquiry learning, hands on activities and writing. Since the start of the year, she has been working with her eighth graders on research investigations relating to water quality. They use the area's watershed--lakes, rivers, streams for field testing their hypotheses.</p> <p>Early each year, Cali engages the class in setting clear expectations for achievement and effort. She teaches "effort" by sharing student and personal examples. The class creates a rubric to document student effort along with their achievement on various assignments. At regular intervals throughout the year, students graph their achievement--effort results. They develop conclusions and share their findings.</p> <p>On the classroom wall, Cali has inspirational posters. She frequently refers to them and reads: <i>I can do science because I work hard at it.</i> Cali "bans" failure talk in her classroom. For example, "I can't" becomes "I haven't yet....."</p> <p>The school is getting ready for a science fair. This event will give the students a chance to share their research projects with an audience of parents, younger students, and the community. Being able to communicate scientific understandings and discoveries is an indicator of underlying scientific concepts. For students who hope to go on to compete in a regional science fair, the school fair will provide a dress rehearsal and chance to practice their presentations and answer questions.</p>	

In her science classes, Cali frequently shares stories about scientists who have overcome roadblocks and setbacks on their way to discoveries. The teacher also maintains a Web site highlighting previous classes so that current students can see former students telling their stories of how they managed to develop and complete their assignments.

The teacher has worked with the principal to convince the PTO to help fund the event, including certificates for students whose projects meet standards of quality—which include a well designed hypothesis and accurate data collection methods.

As part of a community mentoring program, local scientists working in forestry, water quality, or other fields have helped to answer student questions—either through classroom visits or e-mail. These real scientists will attend the fair and ask questions of the exhibitors.

Adapted from Focus on Effectiveness, at www.netc.org

Effort Rubric - General

- 4 I worked on the task until it was complete. I pushed myself to continue working on the task even when difficulties arose or a solution was not immediately evident. I viewed difficulties that arose as an opportunity to strengthen my understanding
- 3 I worked on the task until it was completed. I pushed myself to continue working on the task even when difficulties arose or a solution was not immediately evident.
- 2 I put some effort into the task, but I stopped when difficulties arose.
- 1 I put very little effort into the task.

Sample Effort Rubric for a Math Assignment

- 4 I worked on my math assignment until it was complete. I pushed myself on the assignment even when a problem was difficult or I could not figure out how to solve it immediately. I used these difficult problems to help me better understand the problems and how to solve them.
- 3 I worked on my math assignment until it was complete. I pushed myself on the assignment even when a problem was difficult or I could not figure out how to solve it immediately.
- 2 I put some effort into my math assignment, but I stopped working on it when a problem was difficult or I couldn't figure it out.
- 1 I put very little effort into my math assignment.

Assignment	Effort Rating	Achievement Rating
Problems 1-20 page 214	3	3

Return to Independent Study Project

Project Effort Rubric for _____ Class _____ Project ID _____

My Score **Personal Product Quality**

- 5. My product(s) for this evaluation is/are of Top Quality for me.
- 4. My product(s) for this evaluation is/are of Very Good Quality for me.
- 3. My product(s) for this evaluation is/are of Good Quality for me.
- 2. My product(s) for this evaluation is/are of Fair Quality for me.
- 1. My product(s) for this evaluation is/are of Unacceptable Quality for me.

My Score **How Much I Challenged My Abilities**

- 5. I greatly challenged my limits and lifted my skills to a new level.
- 4. I pushed my limits and extended my skills quite a bit.
- 3. I pushed my limits some and extended my skills some.
- 2. I worked within my limits and extended my skills a little.
- 1. I worked completely within my limits and showed no growth in my skills.

My Score **Learner Rating**

- 5. I learned by being self-directed, asking and/or pursuing my own questions, and went beyond the task requirements.
- 4. I learned independently, frequently asking questions of teacher/peers and seeking out resources, and met all the task requirements.
- 3. I learned partly on my own, occasionally asking questions of teachers/peers and seeking out resources, and met most task requirements.
- 2. I learned mostly when I was being assisted, rarely asking questions of teachers/peers or seeking out resources, and met few of the task requirements.
- 1. I learned only when assisted, never asking questions of teachers/peers or seeking out resources, and met few of the task requirements.

My Score **Preparedness to Learn**

- 5. I was consistently on task and had necessary materials for this class, and I displayed an exemplary attitude.
- 4. I was consistently on task and had necessary materials for class, and I displayed a cooperative, hard working attitude.
- 3. I usually was on task and had necessary materials for class, and I displayed a generally cooperative but not very hard working attitude.
- 2. I was rarely on task and seldom had necessary materials for class, and I displayed an uncooperative attitude.
- 1. I was not on task and did not have the necessary materials for class, and I displayed a negative attitude.

My Score **Acceptance of Responsibility**

- 5. I did all of my work and handed it in on time; I showed excellent self-management of my behavior.
- 4. I did all of my work on time and handed most of it in on time; I showed good self-management of my behavior.
- 3. I did most of my work on time and handed most of it in on time; I showed fair self-management of my behavior.
- 2. I did some of my work on time, and handed some of it in on time; I showed poor self-management of my behavior.
- 1. I did none of my work on time, and I did not self-manage my time and behavior.

My Average **Comments:**

[Back to Top](#)



Student Responsibility & Effort Rubric

<p>Level 5</p>	<p>Demonstrates all Level 4 characteristics Models appropriate behaviour and recognizes expectations Gives maximal effort (motivated and participates fully). Sets challenging goals and sustains strong commitment to them.</p>
<p>Level 4</p>	<p>Presents no disruptions and interruptions Supports and encourages others with positive comments and actions. Accepts complete responsibility for own effort, ability and actions. Stays on-task and participates fully Demonstrates co-operation, respect and leadership Demonstrates consistent effort.</p>
<p>Level 3</p>	<p>Presents minimal disruptions or interruptions. Keeps self from using negative comments and body language. Demonstrates some responsibility for own effort, ability and actions. Stays on-task and often participates. Shares time, materials or ideas. Demonstrates effort when prompted.</p>
<p>Level 2</p>	<p>Presents some disruptions and interruptions in class. Is aware of others feelings, but ignores them. Makes numerous excuses for own effort, ability and actions. Must be reminded to stay on-task and rarely participates. Shares time, materials or ideas when encouraged. Demonstrates minimal effort.</p>
<p>Level 1</p>	<p>Acts out in a disruptive manner, which is harmful to self and others. Uses negative comments and/or body language. Does not take responsibility for own actions/work. Is often off-task, unprepared, and/or does not participate. Does not share time, materials or ideas with others. Demonstrates no effort (unmotivated and does not participate).</p>

Effort Rubric for Elementary Progress Report

Unsatisfactory (1)	Limited (2)	Satisfactory (3)	Exceptional (4)
I rarely have appropriate books or materials ready.	I sometimes need help or reminders to have appropriate books or materials ready.	I usually have appropriate books and materials ready without help or reminders.	I consistently have appropriate books and materials ready.
I rarely complete my work and turn it in on time.	I sometimes remember to hand in my completed work, but I need a lot of reminding.	I usually remember to hand in my completed work with few reminders.	I consistently complete my work and remember to hand it in on time with no reminders.
I am often distracted and I distract others which prevent learning.	Sometimes I am distracted and distract others which prevents learning.	If I allow myself to be distracted, I get myself back on track with little reminding. I seldom distract others.	I don't need reminders to stay on task. I allow others to do their work by concentrating on completing mine.
After the teacher gives directions, I need a lot of support to begin working.	After the teacher gives directions, I sometimes need prompting to begin working.	After the teacher gives directions, I usually am able to begin work without reminders.	After the teacher gives directions, I consistently use different strategies to figure out things I don't understand and am able to begin work immediately.
I rarely remember to check my work.	Sometimes I review my work for quality, thoroughness and effective thinking.	I usually review my work for quality, thoroughness and effective thinking.	I consistently review my work to check for quality, thoroughness and effective thinking.
I often get frustrated right away and give up or I don't try to do the activity at all.	I need lots of encouragement and help so I don't get frustrated and give up.	I occasionally become frustrated when attempting a task, but I still try to do the task.	I accept challenges even if I'm frustrated. I keep on trying until I succeed.
I rarely participate or ask questions during activities or assignments.	I need encouragement to participate in class activities and assignments.	I usually participate during class activities and assignments and will ask questions with few or no reminders.	I consistently participate during class or assignments and I ask questions when I need to.
I seldom look for opportunities to extend my learning.	I sometimes look for opportunities to extend my learning.	I usually look for opportunities to extend my learning.	I consistently look for opportunities to extend my learning.

Table 1

CONTRACT FOR INCREASING COMMITMENT

1. What can you do to be more successful at school?

2. What is your plan for making more of an effort to be more successful?

3. What obstacles or difficulties might keep you from making your plan a success?

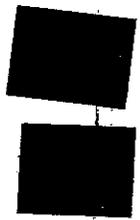
4. What are some ways you can stay away from these obstacles or overcome them if they occur?

5. How can I or other people at school help you be successful with your plan?

6. What are some fair consequences that you should face if your plan does not work?

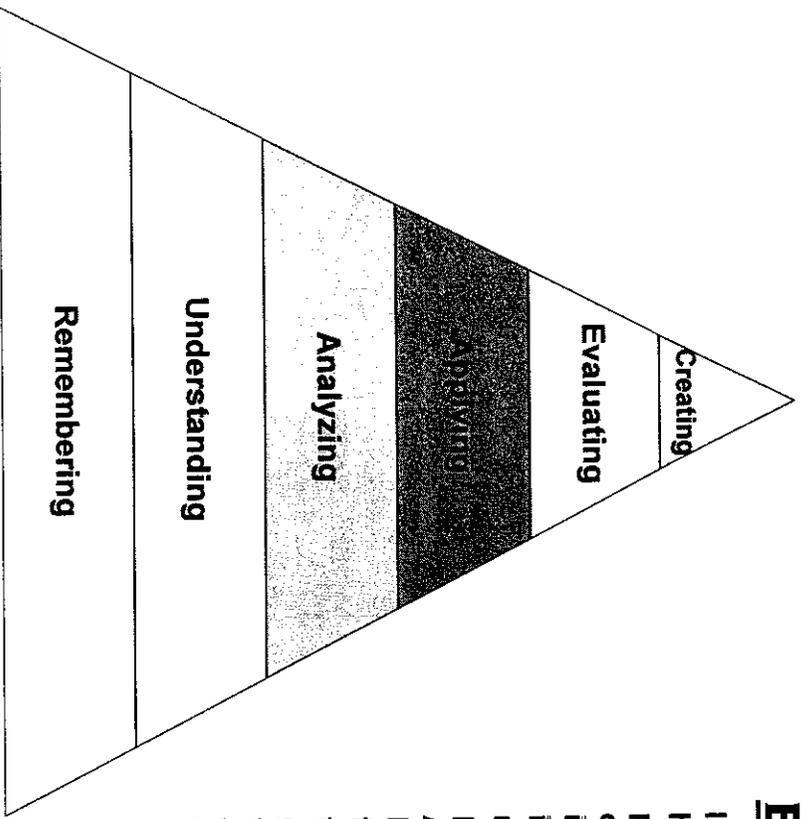
(student's signature)

(teacher's signature)

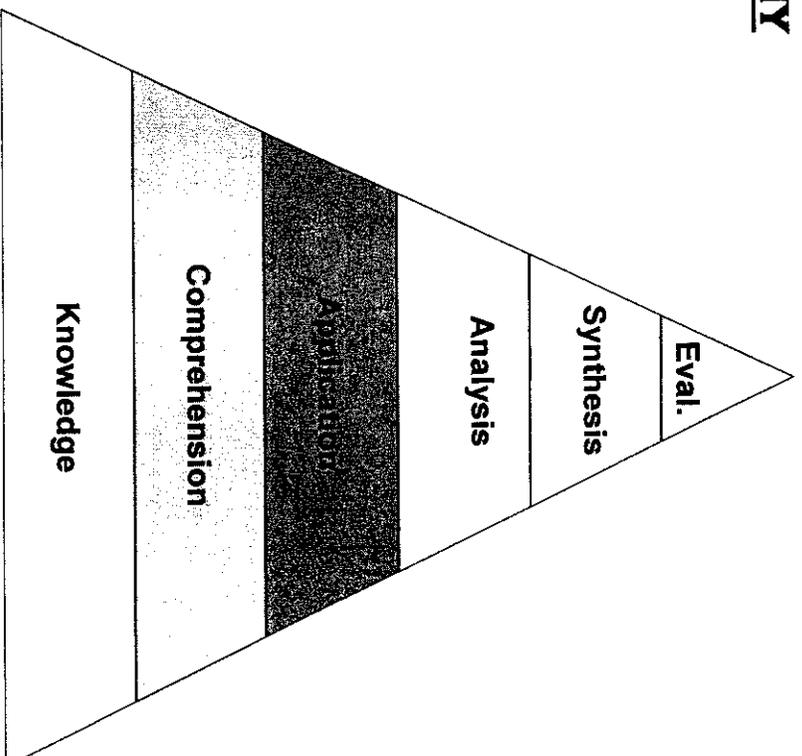


BLOOM'S TAXONOMY

In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. During the 1990's a new group of cognitive psychologists, lead by Lorin Anderson (a former student of Bloom's), updated the taxonomy reflecting relevance to 21st century work. The graphic is a representation of the NEW verb age associated with the long familiar Bloom's Taxonomy. Note the change from Nouns to Verb Forms to describe the different levels of the taxonomy.



New Version



Old Version

<p>Remembering: can the student recall or remember the information?</p>	<p>Define, duplicate, list, memorize, recall, repeat, reproduce state.</p>
<p>Understanding: can the student explain ideas or concepts?</p>	<p>Classify, describe, discuss, explain, identify, locate, recognize, report, select, translate, paraphrase.</p>
<p>Applying: can the student use the information in a new way?</p>	<p>Choose, demonstrate, dramatize, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write.</p>
<p>Analyzing: can the student distinguish between the different parts?</p>	<p>Appraise, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question test.</p>
<p>Evaluating: can the student justify a stand or decision?</p>	<p>Appraise, argue, defend, judge, select, support, value, evaluate.</p>
<p>Creating: can the student create new product or point of view?</p>	<p>Assemble, construct, create, design, develop, formulate, write.</p>

Student Data Sheet

EASTCONN/LEARN

Student Name	Reading Level	Interest (Based student survey)	Learning Preferences (Preferred learning style)	Prior Knowledge (Base on lesson)	Other Information
Rose	DRA 40 4 th grade level	Work with father; soccer, TV, cooking, guitar, reality shows.	Practical		From Puerto Rico. Lives w/Grandmother. Lacks English speaking fluency, fluent Spanish speaker. Quiet, hard to engage
Jay	DRA 40+ Above grade level	Video games, TV, Soccer, Tennis, loves pizza, computers	Analytic		Intelligent, parents well educated Always finishes work early Above average CMT; quiet.
Chen (male)	DRA 40 Grade level	Sports, music, video games, drawing,	Creative		Single parent, limited English Discipline issues, often tardy, home alone
Ruth	DRA40+ Above grade level	Reading, horses, writing stories, likes to go shopping, clothes	Creative		Excellent student, manages time well, family from Dominican Republic
Jen	DRA 28 Low 3 rd grade level	ANIM, Raven Simone, shopping with mother, TV,	Practical		Discouraged at low scores, always tries hard, IQ 82;
Elmer	DRA 40 Grade level	Plays sports, knows teams and averages, skateboarding,	Analytic		Single mom, oldest of 3, rare visits from father; disengaged from school; hangs with older boys
Mary	DRA 38 Below grade level	Shopping, dance class, TV, Hip-hop	Creative		New Student, works hard but is often "lost" in class, ADD but tries to maintain focus in class
John	DRA 40 Grade Level	Skateboarding, IMing, Videogames,	Analytic		Asks for help, Is a peer tutor, Shows mastery through oral responses
Lorraine	DRA 40 Grade level	Reading, science, clubs, cards	Practical		Very articulate, participates, involved in after school activities
Jackson	DRA 40+ when focused	Skateboarding, TV, hangs out in malls, few friends	Practical		Middleclass, intact family, acts out, has difficulty focusing, pushy. Tests low; limited interest.
Madison	DRA 38	Music, math, ballet, one friend,	Analytic		Intact family; has traveled. Average student. Some attendance issues.
Cody	DRA 40	Science and art; wants to be a magician; fantasy reading and games	Creative		Lots of humor, entertains,

HANDOUT 14

Robert Sternberg is a noted psychologist and researcher at Yale University who developed his theory of triarchic intelligence in the late 1980s. Sternberg's work fits into a long line of work in psychology (including the work of Howard Gardner) reminding us that intelligence is multifaceted and changes over time depending on a person's experiences

On the basis of his knowledge of psychology and observation of his students, Sternberg proposed three intelligence preferences which vary among people:

Analytic Intelligence ("school smarts")—People with strengths in this area tend to do very well with school tasks such as making meaning of text material, organizing information, seeing cause and effect, taking notes, and memorizing information.

Practical Intelligence ("street smarts")—People with strengths in this area learn well when they see how things work in the world and how ideas and skills help solve problems. They learn better by using ideas rather than just learning ideas. They need to solve problems in a meaningful context.

Creative Intelligence ("imagination smarts")—People with strengths in this area tend to come at ideas and problems in fresh and surprising ways. They prefer to experiment with ideas rather than work like everyone else. They "think outside the box."

All people who are functional have and use all three intelligences but vary in particular preferences and combinations of preferences. The preferences are shaped by brain wiring, culture, gender, and experiences. It makes sense to help people develop their intelligence strengths while also providing opportunities to expand their nonpreferred areas.

School is highly analytical and therefore favors one of the three intelligence preferences. Conversely, school often works to the disadvantage of students with strong practical and creative preferences.

Sternberg's work is very well researched with students from primary grades through college. He finds important achievement gains for students when teachers

- Support them in exploring ideas and skills in preferred intelligence areas.
- Allow them to express learning in preferred intelligence areas.
- Consistently teach in all three modes, allowing students both to work in preferred areas and gain confidence in nonpreferred areas.

Sternberg's Intelligence Preferences

Handout 14—Continued

Students tend to show achievement gains from learning in preferred modes even when the measures of their achievement (for example, standardized tests) are not in their preferred modes.

Sternberg's work is teacher-friendly in the classroom because there are only three intelligences to plan for and all three fit logically into all subjects.

Teachers who are responsive to learner needs should find Sternberg's ideas very useful for understanding and addressing students' learning profiles. *Learning profile* means "how we learn best or most efficiently." Learning profile is shaped by learning style, culture, gender, and intelligence preference. These four categories often intersect and overlap.

Robert Sternberg is a prolific writer with many articles on this theory and research that supports it. His initial book on the theory, *The Triarchic Mind: A New Theory of Human Intelligence*, was published in 1988 by Viking Press.

Student Interest Survey

Name _____

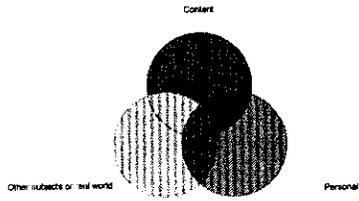
Please answer these questions to the best of your ability. You may skip answers you find to be uncomfortable.

1. What is your favorite book from childhood?
2. What is the farthest point you've traveled away from home?
3. What is a recent movie you enjoyed, and what did you like about it?
- √ 4. What is your favorite place to be and why?
5. What is your favorite food?
6. What is your favorite kind of music?
- √ 7. What is your favorite sport?
- √ 8. To what organizations / teams / clubs do you belong?
9. Name someone you admire and tell why.
- √ 10. What are two common activities you do after getting home from school.
11. What is a responsibility you have?
12. What wish do you have for someone else?
13. What do you want to do for a career?
14. What is something about which you daydream?
15. What is something about which you are curious?
16. What would the title of a book about your life be?
17. If you could go back two years ago, what advice would you give yourself?
18. Describe yourself as a friend.
19. Describe your best friend.

From Rick Wormeli

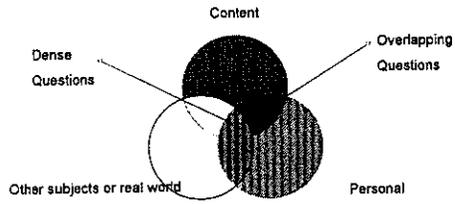
Grouping		
	Traditional Groups	Cooperative Groups
Accountability		
Social Skills		
Processing		
Formation of Group		
Size		

Promoting Rigor and Relevance



Christianberry and Kelly 1983

Promoting Rigor and Relevance



Rigorous Questions

- Let's build one together using the Middle School Social Studies standards in your materials The focus is the Civil War

Questioning Circle Examples, Taken from *Quality Questioning*, Walsh and Sattes, 2005

Example 1. A third grade language arts teacher reads the story, “Orphan Train Quartet, A Family Apart” by Joan Lowery Nixon. In the story, the six siblings live with their widowed mother in the slums of New York City in 1856. The mother makes the ultimate sacrifice of love and sends them west on the orphan train for a better life.

1. Single Domain Questions

The Subject. What is the problem the characters are trying to solve?
Personal Knowledge: Have you ever wanted something that didn't belong to you?
Other Subjects: What is a slum?

2. Overlap Questions

Subject/Personal Knowledge: Use a Venn Diagram to compare and contrast your life with the Kelly children's lives. Write at least three ways your lives are similar and three ways your lives are alike.

Personal Knowledge/Other Subjects: Have you ever taken something that didn't belong to you? If so, what was the consequence?

Other Subjects/The Subject: In the mid to late 1800's, what happened to children who were “copper stealers”?

3. Dense Questions

The Subject/Personal Knowledge/Other: Would it ever be right to take something that is not yours, as Mike did when he took the item that had been stolen from the train passengers? If so, when? If not, why not?

Example 2. Middle school environmental science unit. The purpose of this lesson is to introduce an environmental science unit. The initial assignment was to read *The Lorax* by Dr. Seuss.

Single Domain Questions

The Subject. What problems occurred in the Lorax's world after the Once-ler arrived?
Personal Knowledge? Under what circumstances would you support legislation to preserve and protect the environment at the expense of human needs?
Other subjects: How does the loss of trees affect the environment, particularly the animals and birds?

Overlapping Questions:

The Subject Personal Knowledge: If you had the only Truffula seed given to you, what would you do?
Personal Knowledge/Other Subjects: How do you balance your need for the many things made from wood and the need to maintain forests?
The Subject/Other Subjects: How does the fate of the Truffula Village relate to current predictions about Earth's environment?

Dense Questions.

The Subject/Personal Knowledge/Other: “Sustainable development” is defined as meeting the needs of the present without reducing the ability of people to meet their needs in the future. Many human activities, like the Once-ler's business, are planned for the short term (perhaps a few years). Why is the practice of sustainable development desirable?

Civil War: Questioning Practice
Content Standards 2, 3, and 4 (Social Studies)

Educational experiences in Grades 5 – 8 will assure that students

- a. Demonstrate an indepth understanding of the major events and trends.....
- b. Explain reasons for conflict and the ways conflicts have been resolved.
- c. Describe and analyze, using historical data and understandings, the options which are available to parties involved in contemporary conflicts or decisionmaking.

Big Idea: Conflict stems from causes that are common to nations, groups, and people.

Directions:

Using the information above, let's create a set of questions.

Single Domain Questions:

Subject:

Personal:

Other subjects/real world:

Overlapping Questions

Subject-Personal:

Personal – Other:

Subject—Other subjects/real world

Dense Question:

Subject-Personal-Other subjects/real world

Use in Behavioral Objectives

1	2	3	4	5	6
<u>Knowledge</u>	<u>Comprehension</u>	<u>Application</u>	<u>Analysis</u>	<u>Synthesis</u>	<u>Evaluation</u>
Recall	Compare	Apply	Analyze	Write	What is
Tell	Conclude	Test	Categorize	Think of a way	Choose
When	Contrast	Consider	Describe	Create	Evaluate
What	Demonstrate	Build	Classify	Propose	Decide
How	Differentiate	Plan	Compare	Put together	Judge
When	Predict	Choose	Discriminate	Suggest	Check the
Write	Reorder	How would	Distinguish	How develop	Consider
Which	Which	Construct	Recognize	Make up	Indicate
List	Distinguish	Solve	Support your	What	Select
Show	Extend	Show work	Indicate the	Conclusion	Which would you
Indicate	Rearrange	Tell us	Relate	Formulate	consider
Distinguish	Fill in	Demonstrate	Explain	Synthesis	Defend
Reorganize	Hypothesize	Translate	Assumptions	Derive	Check
Define	Give example	Interpret	What do you	Devise	Appraise
Memorize	Relate-report	Employ	Differentiate	Plan	Measure
Repeat	Explain	Sketch	Appraise	Compose	Rte
Name	Extrapolate	Use	Calculate	Organize	Value
Relate	Rephrase	Dramatize	Experiment	Manage	Assess
Identify	Illustrate	Practice	Test	Arrange	Revise
Inquire	Infer	Illustrate	Contrast	Assemble	Score
Recognize	Tell	Operate	Criticize	Collect	Estimate
Record	Inform	Schedule	Solve	Prepare	
	Restate	Shop	Diagram	Construct	
	Discuss		Debate	Design	
	Describe		Inventory	Set up	
	Recognize		Examine		
	Identify		Question		
	Express				
	Review				

Homework and practice are instructional techniques that are well known to teachers. Both provide students with opportunities to deepen their understanding and skills relative to content that has been initially presented to them.

Research and Theory on Homework

It is no exaggeration to say that homework is a staple of U.S. education. By the time students reach the middle grades, homework has become a part of their lives. The reason commonly cited for homework makes good sense: It extends learning opportunities beyond the confines of the school day. This might be necessary because "schooling occupies only about 13 percent of the waking hours of the first 18 years of life," which is less than the amount of time students spend watching television (Fraser, Walberg, Welch, & Hattie, 1987, p. 234).

We have found four generalizations that can guide teachers in the use of homework.

1. The amount of homework assigned to students should be different from elementary to middle school to high school.

Given the findings in recent years that homework does positively influence the achievement of elementary students and the 1989 (a and b) endorsement by Cooper, even though his synthesis of the research at that time did not show a relationship between elementary school homework and achievement, it is safe to conclude that students in grades from, at least 2nd and beyond, should be asked to do *some* homework.

This said, it is also important to realize that students at lower grade levels should be given far less homework than students at higher grade levels. The critical question is how much homework is the *right amount* of homework. Unfortunately, there is no clear answer on this point.

Finally, even though there is certainly a practical (and ethical) limit to the amount of homework that should be assigned to students at the high school level, the more homework students do, the better their achievement. Specifically, Keith's data indicate that for about every 30 minutes of "additional" homework a student does per night, his or her overall grade point average (GPS) increases about half a point.

2. Parent involvement in homework should be kept to a minimum.

While it is certainly legitimate to inform parents of the homework assigned to their children, it does not seem advisable to have parents help their children with homework. Specifically, many studies show minimal and even somewhat negative effects when parents are asked to help students with homework (see Balli, 1998; Balli, Demo, & Wedman, 1998; Balli, Wedman, & Demo, 1997; Perkins & Milgram, 1996). Parents should be careful not to solve content problems for students.

3. The purpose of homework should be identified and articulated.

Not all homework is the same. That is, homework can be assigned for different purposes, and depending on the purpose, the form of homework and the feedback provided students will differ. Two common purposes for homework are (1) practice and (2) preparation or elaboration (see Foyle, 1985; Foyle & Bailey, 1988; Foyle, Lyman, Tompkins, Perne, & Foyle, 1990). When homework is assigned for the purpose of practice, it should be structured around content with which students have a high degree of familiarity. Practicing a skill with which a student is unfamiliar is not only inefficient, but might also serve to habituate errors or misconceptions.

A second general purpose for homework is to prepare students for new content or to have them elaborate on content that has been introduced. For example, a teacher might assign homework to have students begin thinking about the concept of the cell prior to systematically studying it in class.

4. If homework is assigned, it should be commented on.

One set of studies (see Walberg, 1999) found that the effects of homework vary greatly, depending on the feedback a teacher provides.

When homework is graded, the effect size increases. Homework on which the teacher provides written comments for students has an effect size of .83, representing a percentile gain of 30 points.

Classroom Practice

1. Establish and communicate a homework policy.

Students and their parents need to understand the purposes of homework, the amount of homework that will be assigned, consequences for not completing the homework, and a description of the types of parental involvement that are acceptable. Each of the generalizations in this chapter should be considered when establishing a policy that will be feasible and defensible. Establishing, communicating, and then adhering to clear policies also will increase the likelihood that homework will enhance student achievement.

2. Design homework assignments that clearly articulate the purpose and outcome.

One purpose for homework is to provide time for students to practice what they have learned in class. A second is to prepare for new information or elaborate on information that has been introduced. Sometimes students do not distinguish between these two purposes. It is important to clearly identify the purpose of a homework assignment and communicate that purpose.

3. Vary the approaches to providing feedback.

Providing feedback on homework serves to enhance student achievement.

Research and Theory Practice

Practice is necessary for learning knowledge of any type. We have drawn two generalizations from the research on practice:

1. Mastering a skill requires a fair amount of focused practice.

Research in cognitive psychology has demonstrated that skill learning commonly takes on a specific form. It's not until students have practiced upwards of about 24 times that they reach 80-percent competency. Learning new content, then, does not happen quickly. It requires practice spread out over time. The results of such practice will be increments in learning that start out rather large but gradually get smaller and smaller as students fine tune their knowledge and skill. It is only after a great deal of practice that students can perform a skill with speed and accuracy.

2. While practicing, students should adapt and shape what they have learned.

One finding from the research on practice that has strong classroom implications is that students must adapt or "shape" skills as they are learning them. In fact, one can think of skill learning as involving a "shaping phase." It is during this shaping phase that learners attend to their conceptual understanding of a skill. When students lack conceptual understanding of skills, they are liable to use procedures in shallow and ineffective ways (see Clement, Lockhead, & Mink, 1979; Davis, R. B., 1984; Mathematical Science Education Board, 1990; Romberg & Carpenter, 1986).

The shaping phase is not the time to press students to perform a skill with significant speed. Unfortunately, Healy (1990) reports that educators in the United States tend to prematurely engage students in a heavy practice schedule and rush them through multiple examples. In contrast, as Healy reports, Japanese educators attend to the needs of the shaping process by slowly walking through only a few examples.

Classroom Practice

The first generalization regarding "practice" notes that skills should be learned to the level that students can perform them quickly and accurately.

The idea of "focused practice" is particularly important when students are practicing a complex, multistep skill or process, such as the research process, scientific inquiry, or the writing process. If for example, there is some aspect of the process that is particularly troublesome for students, they might need to be given assignments that help them focus on their practice on that one aspect. This type of practice is referred to as focused because the learner still engages in the overall skill or process, but targets one particular aspect to attend to.

While planning curriculum, many teachers identify the skills and processes students must learn and then try to decide how much instructional and homework time will be dedicated to each skill or process. Teachers typically set time aside for modeling the skill or process, for providing guided practice with the steps of the skill or process, and then for assigning independent practice sessions. It is also important, however, that students *understand* how a skill or process works. It is during curriculum planning that a teacher must make a commitment to increasing students' understanding of skills and processes and then identifying activities to accomplish this instructional goal.

Homework and practice are ways of extending the school day and providing students with opportunities to refine and extend their knowledge. Teachers can use both of these practices as powerful instructional tools.

washingtonpost.com

As Homework Grows, So Do Arguments Against It

By Valerie Strauss
Washington Post Staff Writer
Tuesday, September 12, 2006; A04

The nation's best-known researcher on homework has taken a new look at the subject, and here is what Duke University professor Harris Cooper has to say:

Elementary school students get no academic benefit from homework -- except reading and some basic skills practice -- and yet schools require more than ever.

High school students studying until dawn probably are wasting their time because there is no academic benefit after two hours a night; for middle-schoolers, 1 1/2 hours.

And what's perhaps more important, he said, is that most teachers get little or no training on how to create homework assignments that advance learning.

The controversy over homework that has raged for more than a century in U.S. education is reheating with new research by educators and authors about homework's purpose and design.

No one has gone as far as the American Child Health Association did in the 1930s, when it pinned homework and child labor as leading killers of children who contracted tuberculosis and heart disease. But the arguments seem to get louder with each new school year: There is too much homework or too little; assignments are too boring or overreaching; parents are too involved or negligent.

"What should homework be?" asked veteran educator Dorothy Rich, founder of the nonprofit Home and School Institute. "In the biggest parameter, it ought to help kids make better sense of the world. Too often, it just doesn't."

In the nation's classrooms, teachers say they work hard to conform to school board policies and parent demands that do not always match what they think is the best thing for children.

Yet teachers themselves don't uniformly agree on something as basic as the purpose of homework (reviewing vs. learning new concepts), much less design or amount or even whether it should be graded. And the result can be inconsistency in assignments and confusion for students.

That is part of the reason some educators and authors are making new cases for the elimination of homework entirely, including in the new book "The Homework Myth," by Alfie Kohn.

Kohn points to family conflict, stress and Cooper's research as reasons for giving kids other things to do to develop their minds and bodies after school besides homework.

Advertisement

The Orange Savings Account

3.00% APY

ING DIRECT

Save your money®

Open Now Member FDIC

"I am always fascinated when research says one thing and we are all rushing in the other direction," Kohn said.

"It is striking that we have no evidence that there is any academic benefit in elementary school homework," he said. "Then people fall back on the self-discipline argument and how it helps students learn study skills. But that is an urban myth, except that people apply it in the suburbs, too."

In 1989, Cooper, now a professor of psychology and director of Duke's Program in Education, published an analysis of dozens of studies on the link between homework and academic achievement.

His conclusions: The research base showed no correlation between academic achievement and homework -- besides reading -- in elementary school, a small benefit in middle school and more for high school.

This spring, he co-authored another paper in the Review of Educational Research after reviewing various newer studies done on homework from 1987 to 2003, and he offered a few additions to his conclusions.

This time, he said, there was some evidence that, in grades 2 through 5, students do better on unit tests when they do short homework assignments on basic skills that relate directly to the test.

And, he said, it appears that more than two hours of high school homework, and more than 1 1/2 hours of middle school homework, have no academic benefit and may produce negative results.

Other educators, such as Linda Darling-Hammond, a Stanford University education professor and researcher, say that many of the studies Cooper evaluated were not tightly controlled and not authoritative but that his conclusions make sense.

Darling-Hammond said Cooper also is correct in pointing out that many teachers lack the skills to design homework assignments that help kids learn and don't turn them off to learning.

Today, schools of education provide varying levels of training in the art of designing homework assignments that are more than busywork, usually imbedded in courses about curriculum. Many, however, offer none, and teachers say they wish the schools had.

"One isn't born knowing how to make sensible lesson plans and homework assignments," said Karen Zabrowski, a seventh-grade reading teacher at Chippewa Falls Middle School in Wisconsin.

But teacher knowledge is often trumped by school system policies, created by school boards whose members are often not educators, teachers have said.

Timothy Naughton said he learned about homework at Fordham University in the 1990s. "We agreed it wasn't the best practice for younger students, but we knew everybody was going to make us give it anyway, so we talked about how to reconcile the two positions," said Naughton, who has taught in various elementary grades and is a kindergarten teacher in East Stroudsburg, Pa. He gives no homework but suggests that parents read and practice basic skills with their kids.

Kohn said that if he were education czar, kids would not be assigned homework but would wind up learning anyway. That's what happened at the private Kino School in Tucson, where traditional homework was banned but kids designed their own after-school projects because they wanted to keep

learning.

Cooper said that eliminating homework makes no more sense than "piling it on" and that the answer is somewhere in between.

Georgia Leigh, 16, an 11th-grader at Bethesda-Chevy Chase High School, tends to support the middle ground. It was not until 10th grade, she said, that homework was more than busywork. What changed then, she said, was that she began to be assigned more reading.

"I feel like I'm learning more when I'm reading than when I'm filling out math sheets," she said. "If homework were eliminated? I'd read anyway."

© 2006 The Washington Post Company

Ads by Google

Math Intervention

A skill-based, manipulative-rich, math intervention curriculum
www.camelotlearning.com

Homework

Get Help Everyday, All Subjects Expert Tutors, Try it Now Free
www.TutorVista.com/Home-Work-Help

Teach Elementary School

University of Phoenix Night Distance, And Part Time!
Phoenix.edu

46

Homework:



What Does the Research Say?

Homework is one of the sacred cows of education (Conrath, 1992). According to Shultz (1995), students view it as a monster, and it is the bane of all parents. With the school year in full swing, children are being assigned homework, and parents are coping or facilitating its completion as best they can.

Parents often have questions about why homework is assigned, how beneficial it is, and how they may best help their child complete homework. A recent study reported on five major themes of parents' thinking about homework: (1) concern about their child's unique characteristics as balanced with school demands (2) questions about the appropriate level of independent work assigned to their child, (3) concerns about how they can best structure homework activities, (4) concerns about how involved they should be in helping their child complete homework, and (5) reflections on what it means to them when they are or are not successful at being able to help their children complete assignments (Hoover-Dempsey, Bassler, & Burow, 1995).

Corno (1996) reports five widespread misconceptions about homework:

The best teachers give homework regularly. Actually, the best teachers vary homework assignments according to the task at hand, and many teachers view homework policies that state it must be assigned on a regular basis as undermining their curricular goals and personal teaching style.

More homework is better than less. The amount of work assigned has not been proven to be a reliable indicator of increased academic performance.

Parents want their children to have homework. Parents want their children to do well in school, but that desire cannot be interpreted to mean that they want their children to have homework if it is not going to improve their academic achievement.

Homework supports what students learn in school. Teachers give different reasons for why they assign homework, and many homework assignments do not serve to help students reorganize and extend their learning.

Homework fosters discipline and personal responsibility. There is little evidence to support this widely held idea. Corno (1996, p. 28) says that this finding is only "one small piece of the bigger pie" and that parents foster these characteristics in larger, broader ways than through "doing homework."

In a review of research on homework, Cooper (1994) notes that homework can lead to greater parental involvement in school, but it can also result in increased differences between high and low achievers. In their study of academic achievement of eighth-grade students, Bruce and Singh (1996) found that homework improved, not only the student's grades, but also their scores on standardized tests. Cooper (1994) lists the benefits researchers attribute to homework:

Immediate effects on achievement and learning, including:

- (1) better retention of factual knowledge,
- (2) increased understanding,
- (3) better critical thinking concept formation, (4) better information processing, and
- (5) curriculum enrichment.

Long-term academic effects, including:

- (1) learning encouraged during leisure time,
- (2) improved attitude toward school, and
- (3) better study habits and skills

Nonacademic long-term effects, including:

- (1) greater self-direction,
- (2) greater self-discipline,
- (3) better time organization,

- (4) more inquisitiveness, and
- (5) more independent problem solving.

Cooper (1994) also lists these negative effects, as reported by researchers:

Satiation, which leads to loss of interest in academic material and physical and emotional fatigue.

Denial of access to leisure time and community activities, as evidenced by parental interference, pressure to compete and perform well, and confusion on instructional techniques.

Cheating through copying from other students or through having a tutor provide help beyond tutoring.

Looking at achievement on standardized tests and grades, the research studies that compare the achievement of students who receive homework with those who do not receive homework indicate that homework effects varied according to grade level:

Students in high school who receive homework outperform those who do not receive homework by 69%. Time spent on homework outside of school had greater effects than time spent studying at school. Achievement effects increased according to the amount of time spent on homework.

Students in junior high who receive homework outperform those who do not receive homework by 35%. Homework was more effective than in-school supervised study. Achievement effects increased as time spent on homework increased to two hours, but more than two hours spent on homework did not increase achievement.

Students in elementary school who receive homework perform no differently than those who do not. In-school supervised study had a greater impact on achievement than homework, and achievement did not increase if they spent more time on homework. Cooper cautions that this finding does not mean that elementary school students should not receive homework; rather parents should not expect homework to affect achievement. At this level, homework is important because it promotes good study habits and positive attitudes toward school, and because homework makes it clear to the student that learning can also take place outside of the school environment.

Clearly, homework is a complex issue that brings together the child, parent, and teacher in planned and unplanned ways, with positive and negative outcomes. Homework is widely written about in newspaper columns for parents, and a plethora of books are available on the subject. Indeed, a search of one of the largest online bookstores, using the word "homework," resulted in 71 titles related to homework. Some were children's books (such as *The Berenstain Bears and the Homework Hassle*), but the majority were "how to" books written for parents.

Perhaps parents with concerns about homework can consider doing more than reading "how to" books. They can set up an appointment to talk with the teacher to discuss school policies. By getting involved, perhaps by forming parent/teacher committees to look at the reasons teachers assign homework and school policies for homework, parents can help schools develop more helpful and useful policies.

Source

<http://library.adoption.com/Education/Homework/article/3290/1.html>

EDUCATION WEEK

September 6, 2006

The Truth About Homework

Needless Assignments Persist Because of Widespread Misconceptions About Learning

By Alfie Kohn

Para leer este artículo en Español, haga clic [aquí](#).

There's something perversely fascinating about educational policies that are clearly at odds with the available data. Huge schools are still being built even though we know that students tend to fare better in smaller places that lend themselves to the creation of democratic caring communities. Many children who are failed by the academic status quo are forced to repeat a grade even though research shows that this is just about the worst course of action for them. Homework continues to be assigned – in ever greater quantities – despite the absence of evidence that it's necessary or even helpful in most cases.

The dimensions of that last disparity weren't clear to me until I began sifting through the research for a new book. To begin with, I discovered that decades of investigation have failed to turn up any evidence that homework is beneficial for students in elementary school. Even if you regard standardized test results as a useful measure, homework (some versus none, or more versus less) isn't even *correlated* with higher scores at these ages. The only effect that does show up is more negative attitudes on the part of students who get more assignments.

In high school, some studies do find a correlation between homework and test scores (or grades), but it's usually fairly small and it has a tendency to disappear when more sophisticated statistical controls are applied. Moreover, there's no evidence that higher achievement is *due to* the homework even when an association does appear. It isn't hard to think of other explanations for why successful students might be in classrooms where more homework is assigned – or why they might spend more time on it than their peers do.

The results of national and international exams raise further doubts. One of many examples is an analysis of 1994 and 1999 Trends in Mathematics and Science Study (TIMSS) data from 50 countries. Researchers David Baker and Gerald Letendre were scarcely able to conceal their surprise when they published their results last year: “Not only did we fail to find any positive relationships,” but “the overall correlations between national average student achievement and national averages in [amount of homework assigned] are all *negative*.”

Finally, there isn't a shred of evidence to support the widely accepted assumption that homework yields nonacademic benefits for students of any age. The idea that homework

teaches good work habits or develops positive character traits (such as self-discipline and independence) could be described as an urban myth except for the fact that it's taken seriously in suburban and rural areas, too.

In short, regardless of one's criteria, there is no reason to think that most students would be at any sort of disadvantage if homework were sharply reduced or even eliminated. Nevertheless, the overwhelming majority of American schools – elementary and secondary, public and private – continue to require their students to work a second shift by bringing academic assignments home. Not only is this requirement accepted uncritically, but the amount of homework is growing, particularly in the early grades. A large, long-term national survey found that the proportion of six- to-eight-year-old children who reported having homework on a given day had climbed from 34 percent in 1981 to 58 percent in 1997 – and the weekly time spent studying at home more than doubled.

Sandra Hofferth of the University of Maryland, one of the authors of that study, has just released an update based on 2002 data. Now the proportion of young children who had homework on a specific day jumped to 64 percent, and the amount of time they spent on it climbed by another third. The irony here is painful because with younger children the evidence to justify homework isn't merely dubious – it's nonexistent.

*

So why do we do something where the cons (stress, frustration, family conflict, loss of time for other activities, a possible diminution of interest in learning) so clearly outweigh the pros? Possible reasons include a lack of respect for research, a lack of respect for children (implicit in a determination to keep them busy after school), a reluctance to question existing practices, and the top-down pressures to teach more stuff faster in order to pump up test scores so we can chant “We’re number one!”

All these explanations are plausible, but I think there's also something else responsible for our continuing to feed children this latter-day cod-liver oil. Because many of us believe it's just common sense that homework would provide academic benefits, we tend to shrug off the failure to find any such benefits. In turn, our belief that homework *ought* to help is based on some fundamental misunderstandings about learning.

Consider the assumption that homework should be beneficial just because it gives students more time to master a topic or skill. (Plenty of pundits rely on this premise when they call for extending the school day or year. Indeed, homework can be seen as a way of prolonging the school day on the cheap.) Unfortunately, this reasoning turns out to be woefully simplistic. Back “when experimental psychologists mainly studied words and nonsense syllables, it was thought that learning inevitably depended upon time,” reading researcher Richard C. Anderson and his colleagues explain. But “subsequent research suggests that this belief is false.”

The statement “People need time to learn things” is true, of course, but it doesn't tell us much of practical value. On the other hand, the assertion “More time usually leads to better learning” is considerably more interesting. It's also demonstrably untrue, however, because there are enough cases where more time *doesn't* lead to better learning.

In fact, more hours are least likely to produce better outcomes when understanding or creativity is involved. Anderson and his associates found that when children are taught to

read by focusing on the *meaning* of the text (rather than primarily on phonetic skills), their learning does “not depend on amount of instructional time.” In math, too, as another group of researchers discovered, time on task is directly correlated to achievement only if both the activity and the outcome measure are focused on rote recall as opposed to problem solving.

Carole Ames of Michigan State University points out that it isn’t “quantitative changes in behavior” – such as requiring students to spend more hours in front of books or worksheets – that help children learn better. Rather, it’s “qualitative changes in the ways students view themselves in relation to the task, engage in the process of learning, and then respond to the learning activities and situation.” In turn, these attitudes and responses emerge from the way teachers think about learning and, as a result, how they organize their classrooms. Assigning homework is unlikely to have a positive effect on any of these variables. We might say that education is less about how much the teacher covers than about what students can be helped to *discover* – and more time won’t help to bring about that shift.

Alongside an overemphasis on time is the widely held belief that homework “reinforces” the skills that students have learned – or, rather, have been taught -- in class. But what exactly does this mean? It wouldn’t make sense to say “Keep practicing until you understand” because practicing doesn’t create understanding – just as giving kids a deadline doesn’t teach time-management skills. What might make sense is to say “Keep practicing until what you’re doing becomes automatic.” But what kinds of proficiencies lend themselves to this sort of improvement?

The answer is behavioral responses. Expertise in tennis requires lots of practice; it’s hard to improve your swing without spending a lot of time on the court. But to cite an example like that to justify homework is an example of what philosophers call begging the question. It assumes precisely what has to be proved, which is that intellectual pursuits are like tennis.

The assumption that they are analogous derives from behaviorism, which is the source of the verb “reinforce” as well as the basis of an attenuated view of learning. In the 1920s and ‘30s, when John B. Watson was formulating his theory that would come to dominate education, a much less famous researcher named William Brownell was challenging the drill-and-practice approach to mathematics that had already taken root. “If one is to be successful in quantitative thinking, one needs a fund of meanings, not a myriad of ‘automatic responses,’” he wrote. “Drill does not develop meanings. Repetition does not lead to understandings.” In fact, if “arithmetic becomes meaningful, it becomes so *in spite of* drill.”

Brownell’s insights have been enriched by a long line of research demonstrating that the behaviorist model is, if you’ll excuse the expression, deeply superficial. People spend their lives actively constructing theories about how the world works, and then reconstructing them in light of new evidence. Lots of practice can help some students get better at remembering an answer, but not to get better at – or even accustomed to -- thinking. And even when they do acquire an academic skill through practice, the *way* they acquire it should give us pause. As psychologist Ellen Langer has shown, “When we drill ourselves in a certain skill so that it becomes second nature,” we may come to perform that skill “mindlessly,” locking us into patterns and procedures that are less than ideal.

But even if practice is sometimes useful, we’re not entitled to conclude that homework of this type works for most students. It isn’t of any use for those who don’t understand what they’re doing. Such homework makes them feel stupid; gets them accustomed to doing things the wrong way (because what’s really “reinforced” are mistaken assumptions); and

teaches them to conceal what they don't know. At the same time, other students in the same class already have the skill down cold, so further practice for them is a waste of time. You've got some kids, then, who don't need the practice and others who can't use it.

Furthermore, even if practice was helpful for most students, that doesn't mean they need to do it at home. In my research I found a number of superb teachers (at different grade levels and with diverse instructional styles) who rarely, if ever, found it necessary to assign homework. Some not only didn't feel a *need* to make students read, write, or do math at home; they *preferred* to have students do these things during class where it was possible to observe, guide, and discuss.

Finally, any theoretical benefit of practice homework must be weighed against the effect it has on students' *interest* in learning. If slogging through worksheets dampens one's desire to read or think, surely that wouldn't be worth an incremental improvement in skills. And when an activity feels like drudgery, the quality of learning tends to suffer, too. That so many children regard homework as something to finish as quickly as possible – or even as a significant source of stress -- helps to explain why it appears not to offer any academic advantage even for those who obediently sit down and complete the tasks they've been assigned. All that research showing little value to homework may not be so surprising after all.

Supporters of homework rarely look at things from the student's point of view, though; instead, kids are regarded as inert objects to be acted on: Make them practice and they'll get better. My argument isn't just that this viewpoint is disrespectful, or that it's a residue of an outdated stimulus-response psychology. I'm also suggesting it's counterproductive. Children cannot be made to acquire skills. They aren't vending machines such that we put in more homework and get out more learning.

But just such misconceptions are pervasive in all sorts of neighborhoods, and they're held by parents, teachers, and researchers alike. It's these beliefs that make it so hard even to question the policy of assigning regular homework. We can be shown the paucity of supporting evidence and it won't have any impact if we're wedded to folk wisdom ("practice makes perfect"; more time equals better results).

On the other hand, the more we learn about learning, the more willing we may be to challenge the idea that homework has to be part of schooling.

Copyright © 2006 by Alfie Kohn. This article may be downloaded, reproduced, and distributed without permission as long as each copy includes this notice along with citation information (i.e., name of the periodical in which it originally appeared, date of publication, and author's name). Permission must be obtained in order to reprint this article in a published work or in order to offer it for sale in any form. Please write to the address indicated on the [Contact Us](#) page

www.alfiekohn.org – © Alfie Kohn

Name: _____

Date: _____

RAFT

Roles / Audiences

ad agencies	ecologists	politicians	historical figures
athletes	editors	movie stars	TV characters
cartoonist	historians	older/younger students	poets
characters in stories/novels	homesteaders	radio announcer	
	lawyers	animals	

Format

advertisement	editorial	news story	riddle
apology	epitaph	obituary	sermon
application	eulogy	pamphlet	ship's log
cartoon	graffiti	petition	slide show script
bumper sticker	interview	photo essay	slogan
commercial	invitation	poetry	telegram
complaint	joke	poster	travelogue
confession	journal or diary	radio play	TV script
conversations and dialogues	legal brief	recommendation	video
dramatic monologue	letter to the editor	resume	wanted poster
	marriage proposal	review	warning
			will

Verbs

admonish	demand	grumble	resign
accuse	deny	guide	reward
advise	disagree	harass	satirize
apologize	discourage	honor	scare
attack	emphasize	identify	sell
beg	evaluate	inquire	shock
blame	encourage	interpret	tattle
boast	entertain	justify	taunt
clarify	excite	laud	teach
complain	excuse	notify	tease
condemn	explain	pacify	testify
confide	flatter	proclaim	urge
congratulate	flaunt	pester	warn
convince	forbid	plead	welcome
dazzle	foretell	prod	woo
defend	formulate	protest	yield

Student Work: Sample RAFT

From: Santa, Havens, and Valdes. Project CRISS. 2004. p. 188

R. Point

A. Teacher

F. Letter

T. Convince your teacher that you have an important function

Dear Ms. Havens,

I am Pete the point. I am a point of an endless number of points in space. I want to ask you if you will teach your students about us points and how every single geometric figure is made of us. It is very important to me because it seems that many people think of a point as a small part of geometry since it is so little. Though we are little, we are one of the most important factors of our world of geometry. Without me and all other points there would be no other one solid mar. In reality a line is an endless set of points going in opposite directions. A sphere is a figure with all points at an equal distance from a center point like me.

So please tell your students all about us points. It troubles me when many think of us as unimportant specks in space. Please spread the reality of our importance to the students you teach. My partners and I would greatly appreciate it. Thanks you

*A Point,
Pete*

Bee Life Stages. Excerpted from www.uni.uiuc.edu

Typical of the most advanced insects, bees exhibit complete development or complete metamorphosis. This means that the young and the adults look very different and the diet of the young and the adults typically differ, preventing the parents from competing with their offspring for resources. The life stages are egg, larva, pupa and adult. Development from egg to new worker typically takes two to three weeks.

Egg. The eggs are described as having an appearance similar to sausage-shaped poppy seeds. Each egg has a small opening at the broad end of the egg, the micropyle, that allows for passage of sperm. Hatching takes place three days after egg laying.

Larva. The larval stage lasts eight to nine days. Upon hatching, the larva is almost microscopic, resembling a small, white, curved, segmented worm lacking legs and eyes. For the first two days, all larvae are fed a diet of royal jelly. Beginning the third day, worker larvae are fed honey, pollen and water, while the larvae destined to become queens continue to receive royal jelly throughout their larval lives. Regardless of whether the larva is male or female, it molts five times during its larval stage.

Care of the larvae is constant. Each larva receives an estimated 10,000 meals during this stage. Larval weight increases $5\frac{1}{2}$ x time in the first day, 1500 times in six days.

Pupa. The pupal stage is a stage of massive reorganization of tissues. Organs undergo a complete reorganization while body changes from the wormlike larval body shape to the adult body shape with three distinct body regions. Pupation periods vary; queens require up to 7.5 days; drones require 14.5 days while workers require 12 days.

Adult. Adult bees are either workers (sterile females), queens (fertile females), or drones (fertile males.) A typical honey bee colony consists of 50,000 sterile workers, 500 – 1000 drones, and one queen, the only fertile female in the colony and the mother of the entire population.

Workers provide virtually all of the efforts required to maintain function within a hive. During the latter part of the life, each will travel up to two miles in search of pollen, nectar and water. Each worker typically goes on ten food gathering journeys each day, each lasting approximately one hour. Each worker lives for about a month prior to wearing out.

Immediately after emerging from its pupal cocoon, the worker bee immediately goes to work. During the first four days of its adult life, each worker is cleaned and fed by the other bees while its body hardens and it begins to produce substances in various glands. Activities during the next 17 days include cleaning, feeding larvae, manipulating wax, processing honey, guard duty and air-conditioning the hive by fanning.

On day 21, the worker leaves the hive and works for another 20 days, bringing in pollen, nectar, and water before taking its final flight from the hive and dying.

Pollen, a plant protein source for the young, provides vitamins and minerals for the young. Pollen is collected in pollen baskets on the workers' rear legs. Nectar, obtained from flowers, provides a pure carbohydrate source for all stages. Each worker fills her honey sac within her digestive system, increasing her weight by up to one half. Upon arrival at the hive, the worker regurgitates the contents of the honey sac to the younger workers within the hive. These younger workers receive the nectar which is processed by enzymes and tipped into storage cells where it ripens for five days. At this point, the substance becomes honey, and the cell containing it is capped for storage. Nectar from 5 million flowers is required to produce a single pint of honey. Water, the final substance brought into the hive, is essential for hydrating all individuals within a hive and cooling it throughout the year. Approximately 5 gallons are required to hydrate and cool the colony each year.

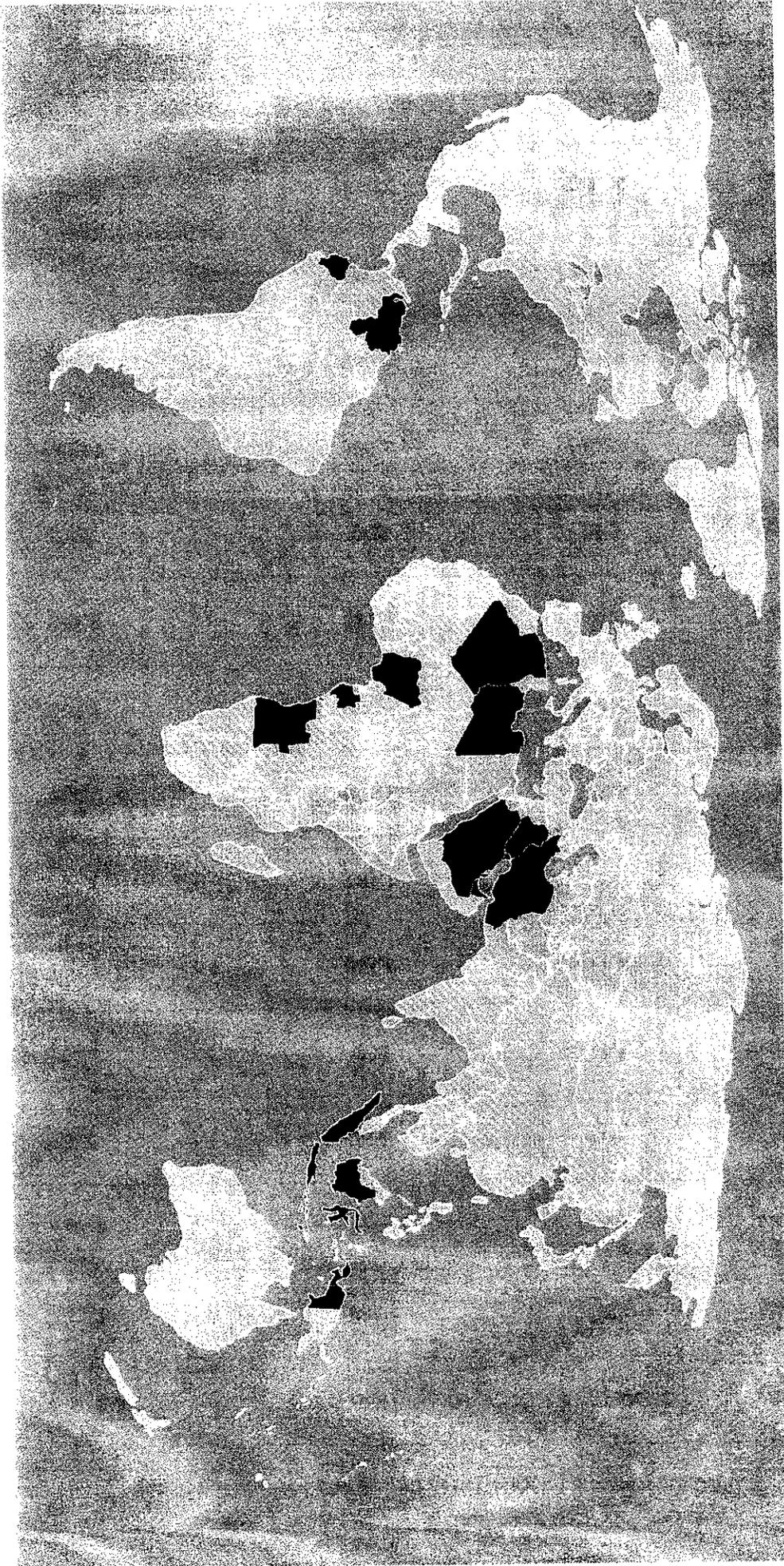
Queens can be distinguished from workers by their longer tapered abdomens and greater size. Queens have the longest lifespan of all the bees. Their major role centers around egg laying to insure that the vast number of individuals required to maintain a hive. Colonies will make a new queen if the original is ailing or infertile. This is done by producing a special wax cell around 7-8 fertilized eggs. Eggs and larvae are slathered with royal jelly (a vitamin rich hormonal goo made by workers) for a two-week period, after which a new queen emerges. The first new queen to emerge stings all her sisters within the specialized wax cell and may kill the original queen (her mother). Two to 15 days after emergence from her pupal cocoon and cell, the young queen flies off, mating with as many drones as possible over a several day period. She will store sperm from these matings for the duration of her life—never to mate again. She returns to the hive and begins laying up to 1500 eggs per day. After two to four years, the queen uses up all of her stored sperm and begins producing unfertilized eggs--which gives rise to drones.

Drones are the male bees within a colony. Drones can be distinguished from workers and queens by their large size, rectangular abdomens, large conspicuous eyes, and noisy flight. All drones lack a sting.

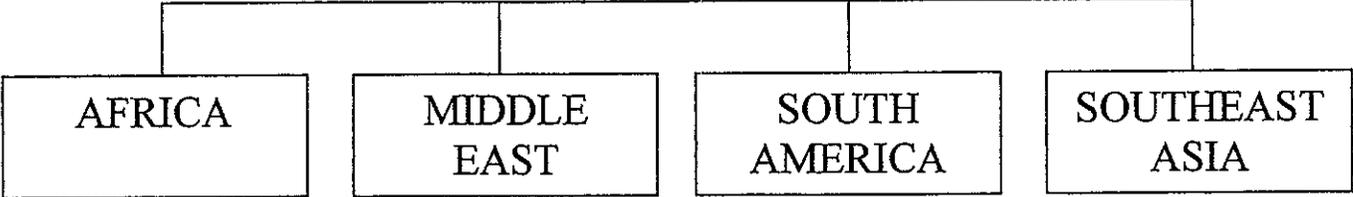
Drones result from unfertilized eggs. Drones are capable of extracting honey but prefer to be fed by workers. Drones can't fly well, don't gather food, don't clean and do not care for young. A group of drones follows each virgin queen on her early flights. Several males will mate with each virgin queen while flying, dying immediately after mating since reproductive organs and the end of the abdomen break off, temporarily plugging the end of the queen's reproductive tract. Assuming all goes well, drones live for about 50 days. If there is a fertile female in residence, the workers may withhold food from the drones or gnaw off the drone's wings and legs. By fall, all the male and male larvae are evicted from each colony.

Physical Education Matrix

	Baseball	Soccer	Tennis	Basketball	Football
# on Team					
Equipment needed					
Time for game					
Scoring System					
Season					

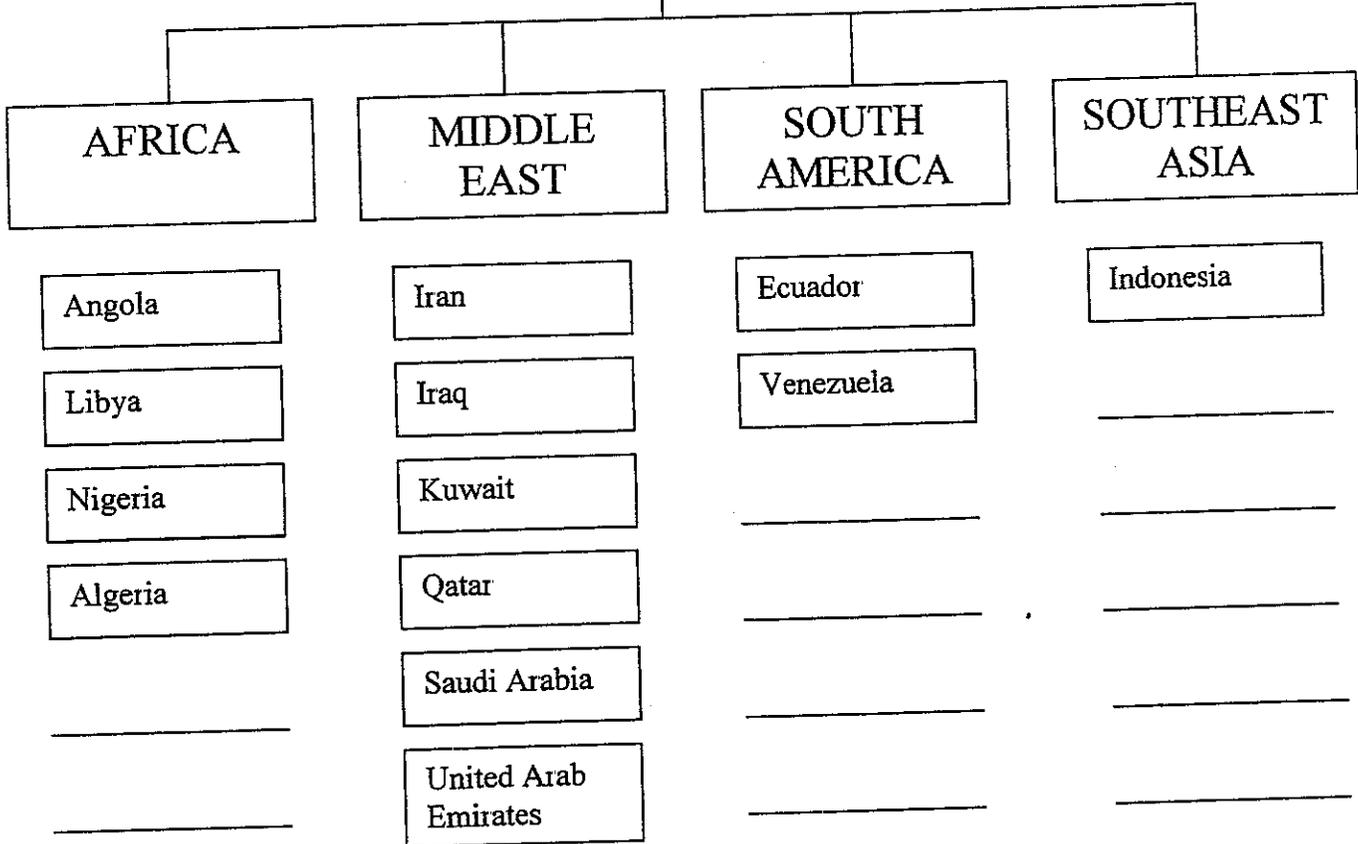


OPEC NATIONS



_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

OPEC NATIONS



OPEC NATIONS

**OVER 3500
THOUSAND
BARRELS/DAY**

**OVER 2000
THOUSAND
BARRELS/DAY**

**OVER 1000
THOUSAND
BARRELS/DAY**

**UNDER 1000
THOUSAND
BARRELS/DAY**

OPEC Quotas and Production in thousands of barrels per day ^[19]

Country	Quota (7/1/05)	Production (1/07)	Capacity
Algeria	894	1,360	1,430
Angola	1,900	1,700	1,700
Ecuador	520	500	500
Indonesia	1,451	860	860
Iran	4,110	3,700	3,750
Iraq		1,481	
Kuwait	2,247	2,500	2,600
Libya	1,500	1,650	1,700
Nigeria	2,306	2,250	2,250
Qatar	726	810	850
Saudi Arabia	10,099	8,800	10,500
United Arab Emirates	2,444	2,500	2,600
Venezuela	3,225	2,340	2,450
Total	31,422	30,451	32,230

- **What are two pieces of advice that your group can give to the next President of the United States?**

1.

2.

Common Analogy Forms

Category	Sample Analogy
Synonyms	End: terminate as
Antonyms	Artificial: real as
Worker and Tool Used	Photographer: camera as
Tool/Object Used on	Scissors: cloth as
Worker/Object Created	Author: book as
Cause and Effect	Negligence: accident as
Effect and Cause	Tsunami: earthquake as
Material Used/End Product	Lumber: house as
Function of a Tool	Shovel: dig as
Part to Whole	Stem: plant as
Whole to Part	Salad: lettuce as
Person/What s/he looks for	Mineralogist; ore as
Person/What s/he avoids	Student: failure as
Masculine/Feminine	Host; hostess as
Age	Infant; adolescent as
Person/Characteristic	Louis: friendly as
Symbol/What it Stands for	Rose: love as
Mathematical Relationship	Seven: forty-nine as
Measurement	Mile: distance as
Classification/Type	Dog: Border Collie as
Degree of Intensity	Cold: pneumonia as

Identify three concepts, vocabulary words, or other content from your curriculum. Create analogies that you can use in your classroom.

Type	Content	Example of Analogy
Mathematical	Fractions	1: 4 as $\frac{1}{4}$ is to _____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Adapted from www.ocde.k12.ct.

EFFECTIVE TEACHING STRATEGIES

**Supplementary Materials
October, 2008**



**CONNECTICUT ACCOUNTABILITY
FOR LEARNING INITIATIVE**

Connecticut Accountability for Learning Initiative: Training Standards

For the purpose of these Standards, training is defined as the delivery of CALL basic training modules.

Training Stage	Facilitator	District/School Leadership	Participants
Planning	1. Be familiar with the District/School Improvement Plan, Cambridge Report, CMT/CAPT data, and TAST reports	1. Provide Facilitator with District/School Improvement Plan, Cambridge Report, CMT/CAPT data, and TAST reports	1. Be familiar with the District/School Improvement Plan, Cambridge Report, CMT/CAPT data, and TAST reports
	2. Communicate room requirements, necessary materials, and technology needs to district/school point person	2. Communicate target participants and their level of prior knowledge/experience to the Facilitator	2. Review training materials in preparation for professional development, if applicable
	3. Contact district/school point person to review purpose of training, intended outcomes, and implementation expectations	3. Identify a point person for the training session	3. Understand purpose of training, intended outcomes, and implementation expectations
	4. Be professional and responsive to adult learning needs and styles	4. Communicate the purpose of training, intended outcomes, and implementation expectations to participants	
	5. Prepare learning agenda, including time frames and outcomes	5. Allocate resources to support training (e.g., time, space, coverage, published training materials, etc.)	
Delivery	1. Establish group norms	1. Provide resources to support training (e.g., time, space, coverage, published materials, etc.)	1. Come prepared with requested materials/data, if applicable
	2. Articulate purpose of training, intended outcomes, and implementation expectations	2. Ensure an environment that is conducive to learning; free from distractions and interruptions	2. Follow agreed upon norms
	3. Establish a common language and make connections between and amongst CALL modules and district/school improvement efforts		
	4. Request and provide continuous feedback to identify and respond to learner needs	3. Communicate with Facilitator during the training to identify any needs, answer questions, etc.	3. Actively participate in training
	5. Engage participants as active learners, questioners, and problem solvers	4. Be visible to communicate importance	4. Reflect and plan to implement new learning
	6. Establish ongoing relationships with point person and participants	5. Participate in training, as appropriate	
	7. Provide opportunities to reflect and plan for implementation		
	8. Model strategies and provide opportunities for guided practice		
	9. Collect sign-in sheets (available on TAST site)		

Connecticut Accountability for Learning Initiative: Training Standards

Training Stage	Facilitator	District/School Leadership	Participants
Follow Up	1. Request completed evaluations from participants	1. Debrief with Facilitator	1. Provide feedback to Facilitator
	2. Provide feedback to participants	2. Debrief with participants	2. Provide feedback to leadership
	3. Debrief with leadership on training, progress of participants, and implications for building capacity	3. Review TAST report	3. Evaluate effectiveness of training and identify future needs
	4. Complete TAST Report within one week of training	4. Revise professional development plan based on feedback, if needed	4. Revise instructional practice based on documented student learning
	5. Submit CALL sign-in sheets to EASTCONN within one week of training		5. Align lesson objectives with Standards and Grade Level Expectations
	6. Debrief with RESC/SERC Director of Staff Development		6. Integrate new learning as evidenced in lesson planning and instruction

Commendations:

Recommendations:

Next Steps:



Sample Unit : Space



Remembering

Cut out space pictures from a magazine. Make a display or a collage. List space words (Alphabet Key). List the names of the planets in our universe. List all the things an astronaut would need for a space journey.

Understanding

Make your desk into a spaceship. Make an astronaut for a puppet play. Use it to tell what an astronaut does. Make a model of the planets in our solar system.

Applying

Keep a diary of your space adventure (5 days). What sort of instruments would you need to make space music? Make a list of questions you would like to ask an astronaut.

Analysing

Make an application form for a person applying for the job of an astronaut. Compare Galileo's telescope to a modern telescope. Distinguish between the Russian and American space programs.

Evaluating

Compare the benefits of living on Earth and the moon. You can take three people with you to the moon. Choose and give reasons. Choose a planet you would like to live on- explain why.

Creating

Write a newspaper report for the following headline: "Spaceship out of control". Use the SCAMPER strategy to design a new space suit. Create a game called "Space Snap". Prepare a menu for your spaceship crew. Design an advertising program for trips to the moon.