

Teaching Content to All: Promoting Content Mastery in Subject Area Courses

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University of Kansas
Center for Research on Learning

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Baltimore, MD
April 7, 2005

Teacher(s): KU-CRL Staff	The Course Organizer	Student:
Time: 8:30 - 4:45 (6 sessions)		Course Dates: April 7, 2005

This Course: Radical Reform for Secondary Schools: Or, Where do We Find Success for Students with Disabilities?

is about how practitioners can develop a school-wide approach to improving adolescent literacy.

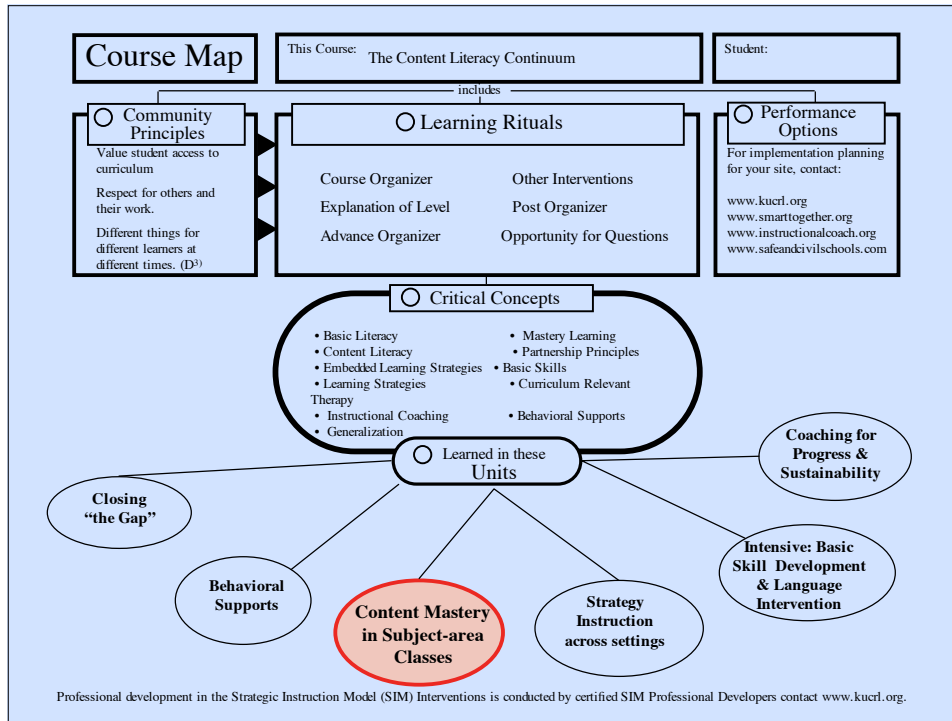
Course Questions:

1. What are the goals of the Content Literacy Continuum?
2. How do SIM and other programs fit into the Content Literacy Continuum?
3. How is a comprehensive behavioral support system like Safe and Civil Schools central to effective implementation of the Content Literacy Continuum?
4. How do professionals providing services across the levels work together to assist students?
5. How can teachers ensure mastery of critical core curriculum for students with a wide range of literacy levels?
6. How do content teachers teach and provide sufficient practice in selected learning strategies as part of core curriculum courses?
7. How do you ensure more intensive Learning Strategy instruction for those students who need it?
8. How can the needs of students who are reading and writing below a 4th grade level be addressed by secondary schools?

COURSE CONTEXT

- Diverse Learners
- Adolescent Literacy
- IDEA:
 - Access to curriculum
 - Outcomes
- NCLB:
 - Achieving AYP
 - Scientifically Based Research

9. What are the types of services that need to be provided by a speech-language pathologist crucial to the success of a school-wide literacy approach?
Professional development in the Strategic Instruction Model (SIM) interventions is conducted by certified SIM Professional Developers contact www.kucri.org.

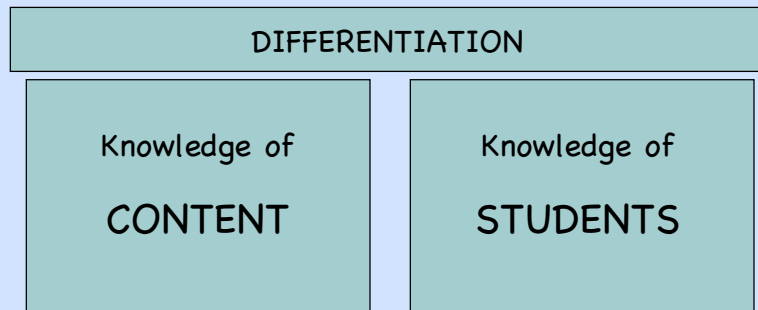


Our Critical Questions

5. How can teachers ensure mastery of critical core curriculum for students with a wide range of literacy levels?
6. How do content teachers teach and provide sufficient practice in selected learning strategies as part of core curriculum courses?

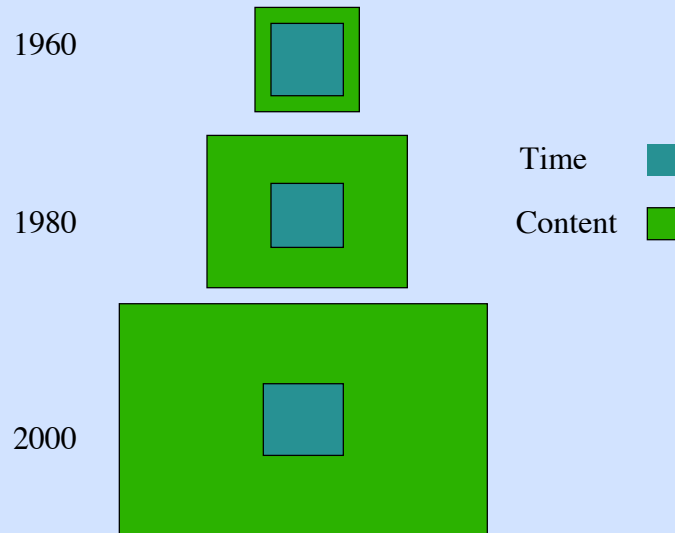


Foundation of Differentiation



- Word attack and recognition skills plateau at about the 3rd to 5th grade levels for some
>>> Direct, systematic, intensive instruction in phonics works
- Comprehension plateaus at about the 5th to 6th grade levels for many
>>> Direct, systematic, intensive instruction in learning strategies works
- Attention to vocabulary and background knowledge is needed
>>> Progress, transfer, and maintenance significantly increases when instruction is provided across settings
- Students must be able to use literacy to solve problems and meet demands across settings if they are to become motivated to develop literacy skills

Information Explosion/ Instructional Time Dilemma



A Continuum of Literacy Instruction

- Level 1:** **Enhance content instruction** (mastery of critical content for *all* regardless of literacy levels)
- Level 2:** **Embedded strategy instruction** (routinely weave strategies within *and* across classes using large group instructional methods)
- Level 3:** **Intensive strategy instruction** (mastery of specific strategies using 8-stage instructional sequence; individual Strategic Tutoring)
- Level 4:** **Intensive basic skill instruction** (mastery of entry level literacy skills at the 4th grade level)
- Level 5:** **Therapeutic intervention** (mastery of language underpinnings of curriculum content and learning strategies)

Content Enhancement Routines

(Creating “learner-friendly” classrooms)

- A way of teaching academically diverse classes in which
 - The integrity of the content is maintained
 - Critical content is selected and transformed
 - Content is taught in an active partnership with students

Content Enhancement Teaching Routines

Planning & Leading Learning

Course Organizer
Unit Organizer
Lesson Organizer

Exploring Text, Topics, & Details

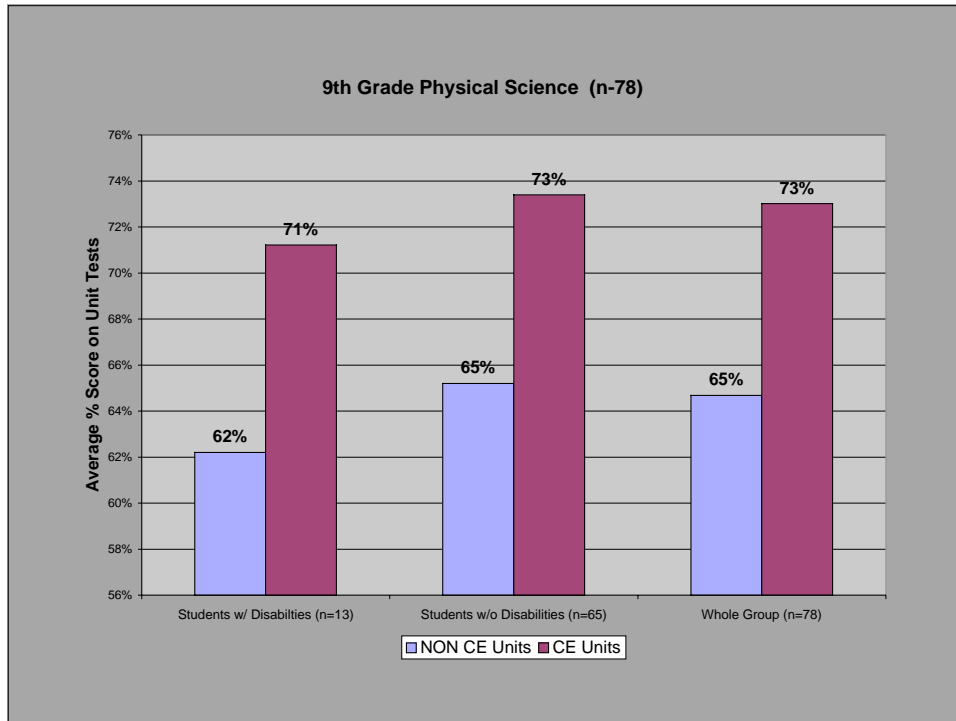
Framing Routine
Survey Routine
Clarifying Routine

Teaching Concepts

Concept Mastery Routine
Concept Anchoring Routine
Concept Comparison Routine

Increasing Performance

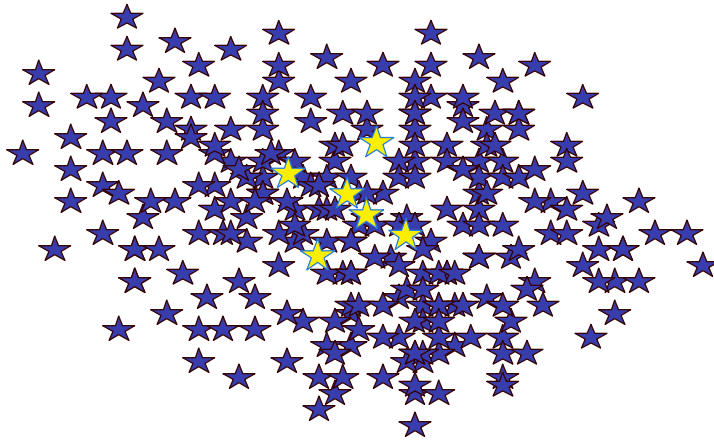
Quality Assignment Routine
Question Exploration Routine
Recall Enhancement Routine
Order Routine



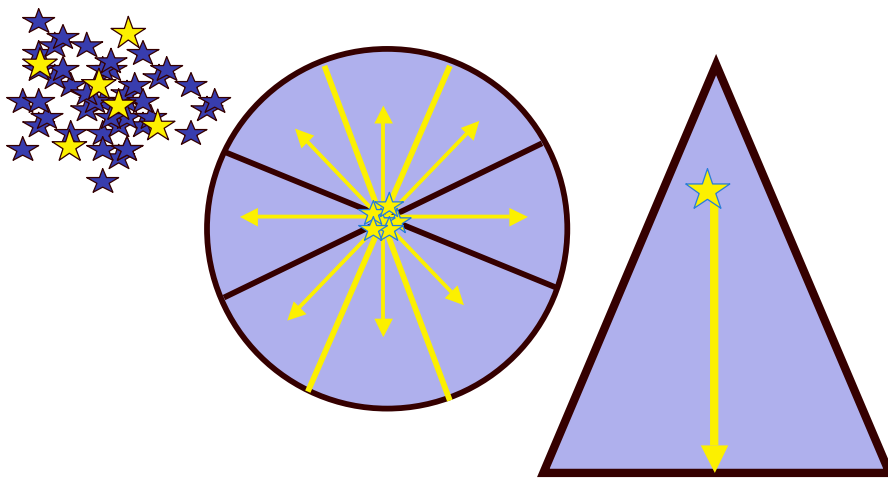
“If it weren’t for students impeding our progress in our race to the end of the term, we could certainly be sure of covering the material. The question, however, is not whether we as teachers can get to the end of the text or the end of the term, but whether students are with us on that journey.”

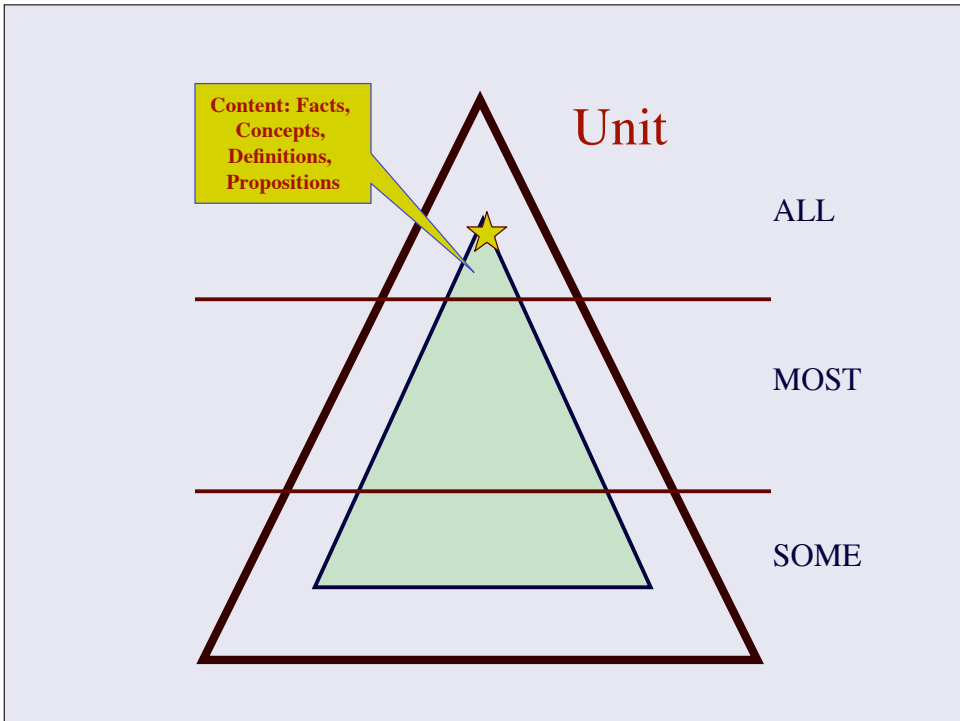
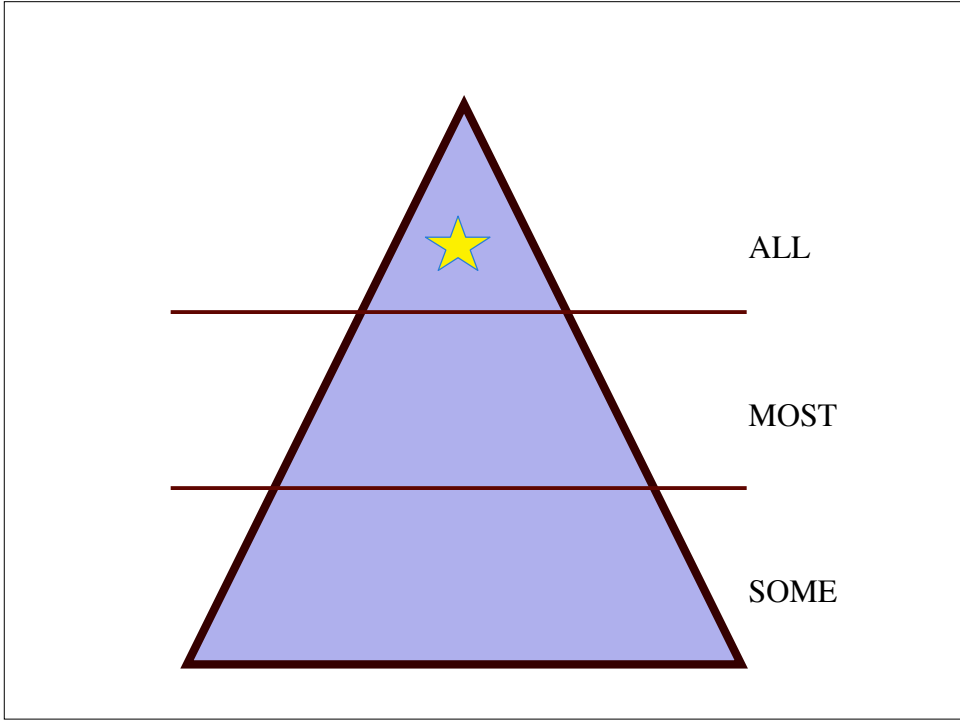
Pat Cross
 Director of the Classroom Research Project
 University of California, Berkeley

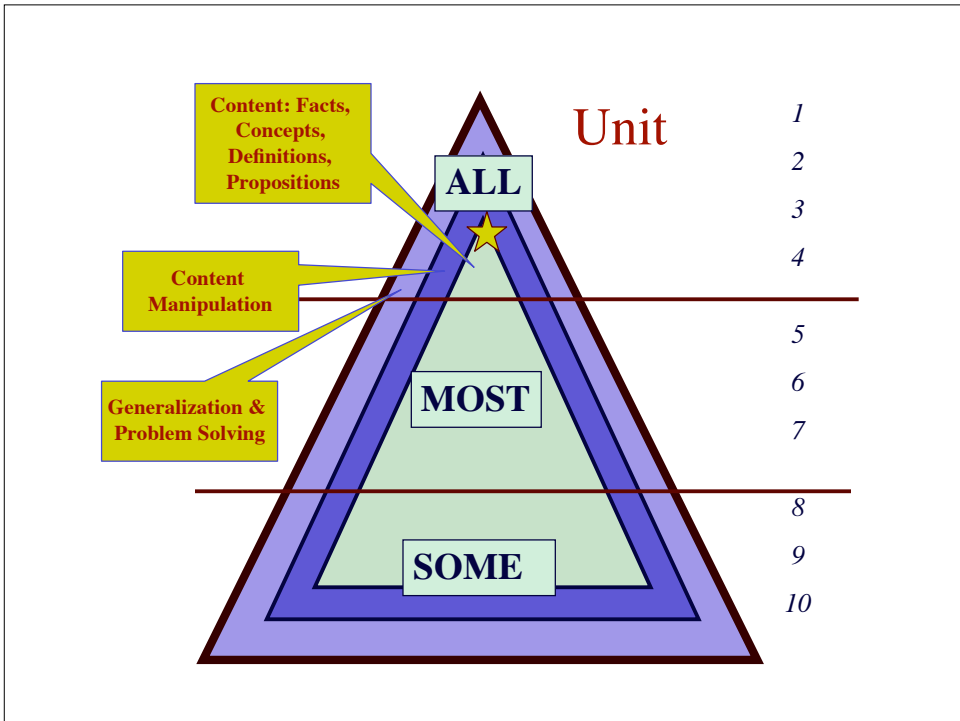
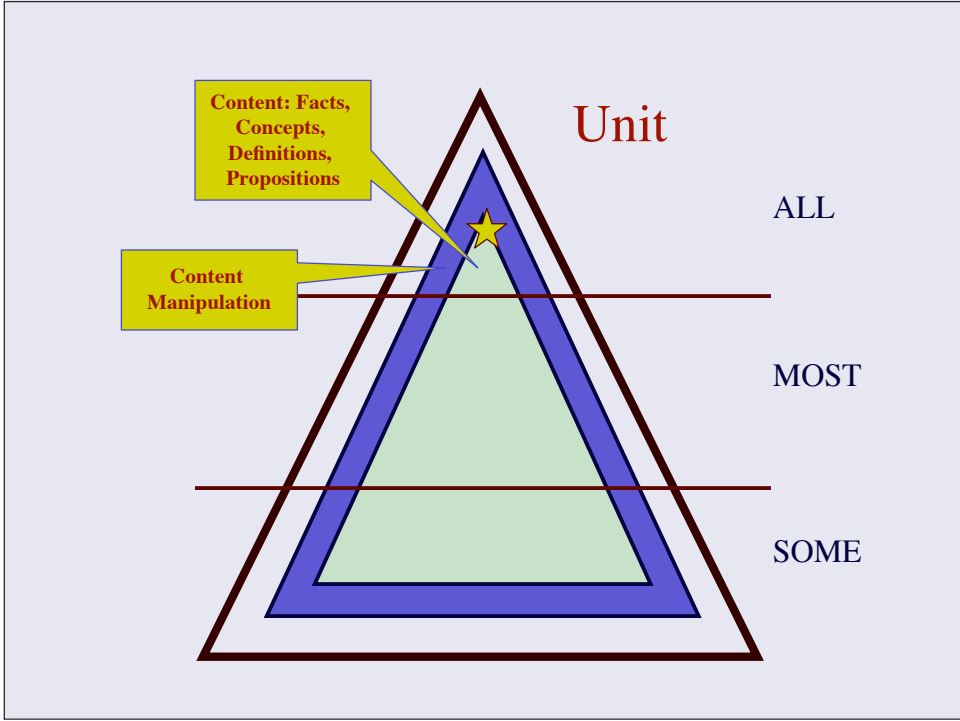
Thinking about the curriculum:

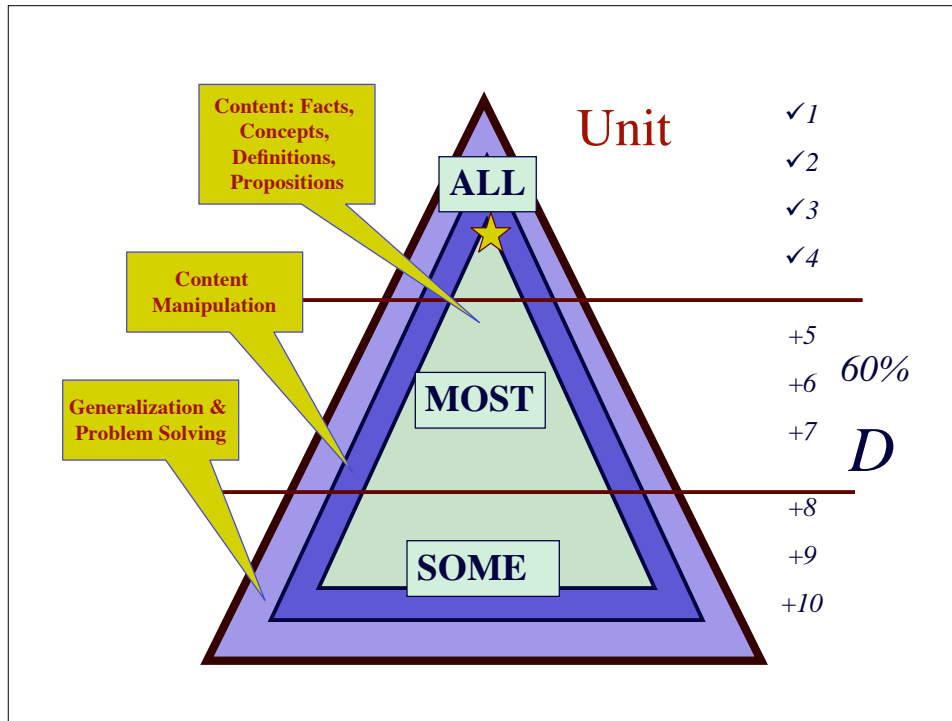


Thinking About the Curriculum...









ALL Students Should Know

Seed plant	Pollination
Life cycle	-animal pollination
Haploid	-wind pollination
Diploid	Seed dormancy
Pollen	Seed dispersal
Egg cell	Seed germination
Angiosperm	Agriculture
Gymnosperm	Crop Plants
Angiosperm reproduction	Fertilization
Gymnosperm reproduction	Zygote
Reproductive structures	Embryo
-flower	Cotyledon (seed leaf)
-cone	Monocot
Gametophyte stage	Dicot
Sporophyte stage	
Seed	
Structure of Flower (petals, sepals, carpels, stamens)	
Ovary	
Fruit	

MOST Students Should Know

- Gametophyte stage (concept)
- Sporophyte stage
- Alternation of Generations
- Embryo sac
- Ovule
- Male cones (pollen)
- Female cones (seed)
- Pollen tube
- Endosperm
- Tube nucleus
- Sperm nuclei
- Double fertilization
- Vegetative reproduction (horizontal stems, stolons, plantlets)
- Plant propagation (grafting, cutting, budding)

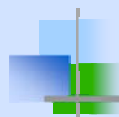
SOME Students Should Know

- Male Gametophyte
- Female Gametophyte
- 8N embryo sac
- Details of:
 - Fertilization in angiosperms
 - Double fertilization
 - Tube nucleus
 - Sperm nuclei
 - Vegetative reproduction
 - Plant propagation
 - Farming techniques

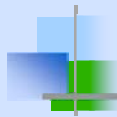
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ALL Students Should Know

- Seed plant
- Pollen
- Angiosperm reproduction
- Gymnosperm reproduction
- Reproductive structures
 - flower
 - cone
- Structure of Flower (petals, sepals, carpels, stamens)
- Pollination
 - animal pollination
 - wind pollination
- Seed dormancy
- Seed dispersal
- Seed germination
- Agriculture
- Crop Plants



Achieving maximum growth by
...selecting critical outcomes
...moving from "teaching by mentioning it"
to "leading to understanding"



SMARTER Planning

- Shape critical Questions
- Map critical content

- Analyze for learning difficulties
- Reach enhancement decisions
- Teach strategically

- Evaluate mastery
- Revisit outcomes



Planning time is limited--
content is endless!

SMARTER Planning can
keep us from being
"buried alive in the
quick sand of standards."

The Unit Organizer NAME _____ DATE _____

① EXPANDED UNIT MAP

② NEW UNIT SELF-TEST QUESTIONS

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The Unit Organizer NAME _____ DATE 1/22

④ BIGGER PICTURE

The roots and consequences of civil unrest.

② LAST UNIT / Experience: Growth of the Nation

① CURRENT UNIT: The Causes of the Civil War

③ NEXT UNIT / Experience: The Civil War

was based on Sectionalism was influenced by

Areas of the U.S.

1/22	Cooperative groups - over pp. 201-210
1/28	Quiz
1/29	Cooperative groups - over pp. 210-225
	"Influential Personalities" project due
1/30	Quiz
2/2	Cooperative groups - over pp. 228-234
2/6	Review for test
2/7	Review for test
2/6	Test

UNIT SELF-TEST QUESTIONS

⑦ What was sectionalism as it existed in the U.S.?

How did the differences in the sections of the U.S. influence the causes of the Civil War?

What examples of sectionalism existed in the U.S.?

1. CURRENT UNIT
2. LAST UNIT
3. NEXT UNIT
4. BIGGER PICTURE

Information is listed to help students see how the current unit is related to other units and to course ideas.

The Unit Organizer NAME Elda Cordora
DATE 1/22

④ BIGGER PICTURE

← The roots and consequences of civil unrest. →

② LAST UNIT /Experience Growth of the Nation	① CURRENT UNIT The Causes of the Civil War	③ NEXT UNIT /Experience The Civil War
---	---	--

⑤ UNIT MAP

```

graph TD
    A([Sectionalism  
pp. 201-236]) --- B([Areas of the U.S.])
    A --- C([Differences between the areas])
    A --- D([Events in the U.S.])
    A --- E([Leaders across the U.S.])
    B --- B1[was based on]
    C --- C1[emerged because of]
    D --- D1[became greater with]
    E --- E1[was influenced by]
  
```

⑧ UNIT SCHEDULE	
1/22	Cooperative groups over pp. 201-210
1/28	Quiz
1/29	Cooperative group over pp. 210-226
	Influential Personalities project due
1/30	Quiz
2/2	Cooperative groups over pp. 228-234
2/6	Review

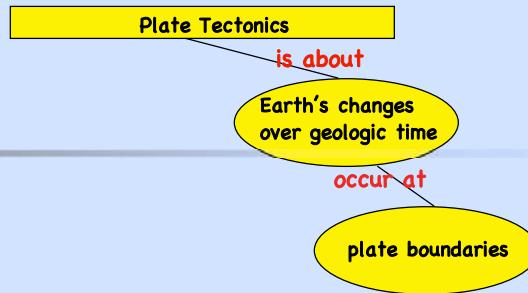
5. UNIT MAP

A Unit Paraphrase of the big idea of the unit and a Content Map are used to show students how to think about and structure the information in the unit.

The "Big Idea" Paraphrase

- Captures the major point of learning
- Relates to students
- Understandable
- Inclusive

Line Labels



- Linked bubbles can be read as a series of sentences
- Represent clearest and most accurate picture of relationships between key ideas/concepts

Rationale

- Makes the curriculum “conceptually transparent”
- Makes abstract...concrete
- Helps make new connections

The Unit Organizer NAME Elida Cordora
DATE 1/22

④ BIGGER PICTURE

6. UNIT RELATIONSHIPS

A list of relationships that reflect the central ideas of the unit are provided so that students can look for these relationships as the content of the unit is learned.

	2/6	Review for test	
	2/7	Review for test	
	2/6	Test	

UNIT SELF-TEST QUESTIONS	⑦	What was sectionalism as it existed in the U. S. of 1860?		
		How did the differences in the sections of the U.S. in 1860 contribute to the start of the Civil War?		descriptive
				compare/contrast
				cause/effect
				⑥ UNIT RELATIONSHIPS

The Unit Organizer NAME _____
DATE 1/22

④ BIGGER PICTURE

The roots and consequences of civil unrest.

② LAST UNIT /Experience Growth of the Nation	① CURRENT UNIT The Causes of the Civil War	③ NEXT UNIT /Experience The Civil War
---	---	--

7. UNIT SELF-TEST QUESTIONS

Questions that students can use to check understanding of the big ideas and relationships in the unit are listed.

	1/22	Cooperative over pp. 20	
	1/28	Quiz	
	1/29	Cooperative over pp. 21	
		*Influential Person project due	
	1/30	Quiz	
	2/2	Cooperative over pp. 22	
	2/6	Review for test	
	2/7	Review for test	

UNIT SELF-TEST QUESTIONS	⑦	What was sectionalism as it existed in the U. S. of 1860?		
		How did the differences in the sections of the U.S. in 1860 contribute to the start of the Civil War?		descriptive
				compare/contrast
				cause/effect
				⑥ UNIT RELATIONSHIPS

Evaluate Questions

Turn to your neighbor and discuss these questions.
Are these good unit questions? Why?

What level? Course, Unit, Lesson

What quality? Bloom's Taxonomy

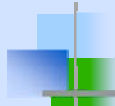
- Describe how our earth changes.
- How does the earth's movement over geologic time affect you today?
- What are the three types of boundaries?
- How are structures formed at each of the boundaries?

The Unit Organizer NAME: Eida Cordora

8. UNIT SCHEDULE

To help students organize task management and completion, experiences that promote learning and show students what they have learned are listed.

UNIT SCHEDULE	UNIT MAP	UNIT RELATIONSHIPS
1/22 Cooperative groups - over pp. 201-210	Areas the U	descriptive
1/28 Quiz		compare/contrast
1/29 Cooperative groups - over pp. 210-225		cause/effect
"Influential Personalities" project due		
1/30 Quiz		
2/2 Cooperative groups - over pp. 228-234		
2/6 Review for test		
2/7 Review for test		
2/6 Test		
UNIT SELF-TEST questions		
① What was sectionalism as it existed in the U.S. of 1860?		
How did the differences in the sections of the U.S. in 1860 contribute to the start of the Civil War?		
② What examples of sectionalism exist in the world today?		



Rationale

- Helps students plan and manage time
- Helps students identify needed materials
- Develops skills needed for success in postsecondary education and adult life

The Unit Organizer NAME: Elida Cordeira
DATE: 1/22

© Expanded Unit Map The Causes of the Civil War

is about.

Sectionalism

was based on the pp. 201-236

was influenced by

Areas of the U.S.

Developed because of

became greater with

Leaders of change

such as

- Henry Clay
- Stephen Douglas
- Zachary Taylor
- Harriet Beecher Stowe
- Douglas
- John Brown
- Jefferson Davis
- Abraham Lincoln

Differences between the areas

and included

and included

and included

such as

- 1820 Missouri Compromise
- 1846 Mexican War
- 1850 Compromise of 1850
- 1850 Fugitive Slave Law of 1850
- 1852 Uncle Tom's Cabin
- 1854 Kansas-Nebraska Act
- Republican Party formed
- Bleeding Kansas
- Scott Case
- Lincoln Douglas Debates
- Brown's Raid
- Lincoln Elected
- South Carolina Secedes
- Confederacy formed

which included the West

which included the

which included the

9. EXPANDED UNIT MAP

As the unit progresses, the basic UNIT MAP from the first page of the Unit Organizer is expanded with key summary information about the content of the unit.

of the U.S. apart?

Rationale

- Isolated bits of information are too difficult to learn; students lose interest and attention
- 'Chunking' leads to better understanding and retention of new knowledge

The Unit Organizer The Causes of the Civil War NAME Elida Cordora
DATE 1/22

Expanded Unit Map

is about.

10. NEW UNIT SELF-TEST QUESTIONS

As the unit progresses, new questions that seem important about the content of the unit are listed or old questions can be modified.

South

North

- 1857 Dred Scott Case
- 1858 Lincoln Douglas Debates
- 1859 John Brown's Raid
- 1860 Lincoln Elected
- 1860 South Carolina Secedes
- 1861 Confederacy formed

NEW UNIT SELF-TEST QUESTIONS

How did national events and leaders pull the different sections of the U.S. apart?

Some Examples

The following are some examples from different subjects and may give you some food for thought. Reminder, good organizers evolve with use over time.

The Unit Organizer		NAME _____
		DATE _____
④ BIGGER PICTURE		
← Changes on Earth as well as within the atmosphere affect life. →		
② LAST UNIT/Assignment Volcanoes	① CURRENT UNIT Evolution of the Atmosphere	③ NEXT UNIT/Assignment Biogeochemical Cycles
③ UNIT SCHEDULE	⑤ UNIT MAP	
/1a Pretest Read pp. 394-399 /1z guide: write evolution of the atmosphere sequence /1z Graphical representation of Atmospheric gases /1a Quiz		
	Earth Science Standard 8b: Students will know: *the gases that make up the atmosphere *the effects of outgassing *how the amount of Carbon Dioxide has changed over time *how and when oxygen was added to the atmosphere	
⑥ UNIT SELF-TEST QUESTIONS	⑦ UNIT RELATIONSHIPS	
1. How has our atmosphere evolved to its present composition? 2. Why is Earth's atmosphere unique? 3. How have volcanoes contributed to the evolution of the atmosphere?	Graph analysis Compare and contrast Cause and Effect	

The Unit Organizer NAME: Sharra Ti
DATE: 9/18

④ BIGGER PICTURE: Types of Literature

② LAST UNIT/Experience Quality Writing	① CURRENT UNIT The Short Story	③ NEXT UNIT/Experience Drama
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⑧ UNIT SCHEDULE 9/19 Concept Anchoring 9/20 Quiz on reading strategies 9/27 Portfolio presentation 10/1 Quiz on Plot/Character 10/5 Film on Point of View 10/8 Project due 10/12 Point of View assignment 10/15 Portfolio presentation 10/21 Quiz on Setting/theme 10/24 Short story due 10/25 Review 10/27 Short story analysis Due	⑥ UNIT MAP
--	----------------

⑦ Unit Self-Test Questions What makes a good short story? How do short stories help us learn and think about the world? How do you write a short story?	⑤ Unit Relationships cause/effect problem/solution
--	--

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The Unit Organizer NAME: _____
DATE: _____

④ BIGGER PICTURE: Types of Literature

② LAST UNIT/Experience Short Stories	① CURRENT UNIT Novel	③ NEXT UNIT/Experience Drama
---	-------------------------	---------------------------------

⑧ UNIT SCHEDULE Call of the Wild	⑥ UNIT MAP
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⑦ UNIT SELF-TEST QUESTIONS 1. How does the novel help us learn about the world? 2. How does the development of the main character illustrate one of the themes? 3. How is the author's background reflected in the novel?	⑤ UNIT RELATIONSHIPS Cause/Effect Problem/Solution Analyze Evaluate
--	---

DATE _____

④ BIGGER PICTURE

Establishing a Nation

② LAST UNIT/Experience: **Colonial America** ① CURRENT UNIT: **Revolution** ③ NEXT UNIT/Experience: **Establishing a Gov.**

○ UNIT SCHEDULE

Introduction
Vocabulary (Linking)
Frame Relationships
Quiz
D of I video/act.
Review for test
Test
Notes on Key Individuals
"Who am I?" activity
Quiz
Key Events timeline
Review
Test

○ UNIT MAP

is about...

○ Unit Self-test Questions

What caused the poor relationship between the colonies & England?
 What were the key ideas included in the Declaration?
 How did key individuals and major events determine the outcome of the war?
 How were the colonists able to defeat Britain?

○ Unit Relationships

Cause/ effect
classify / Summarize
Process
advantages/ disadvantages

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NAME: Your Name Here
DATE: Today's Date Here

④ BIGGER PICTURE

What are the Cycles of a Great Conquering Empire?

① LAST UNIT /Experience: **Ancient Rome** ② NEXT UNIT /Experience: **Incas, Mayans, Aztecs**

⑥ UNIT SCHEDULE

KWL-What are you?
Feudalism-Manorialism
Castle Life
Project Work
The 5 Pillars of Islam
The Holy Wars
History Today?
The "Black Death"
Unit Test

○ UNIT MAP

is about...

○ Unit Relationships

Cause and Effect
Hierarchies
Rank-ordering
History Past v. Present
Special Projects

○ Unit Self-test Questions

I. Describe the cause of feudalism and show the hierarchy of this government.
 II. Describe the construction of castles and list at least 12 parts and their use.
 II. (a) Describe daily life in a castle. Why did castles fail?
 III. What are the foundations of the Islamic faith? How does Islam compare/contrast with Christianity?
 IV. What were the causes of the Crusades and the effects on the religion?
 V. What evidence can you provide that shows there is still friction between Christians and Muslims? What other religions conflict. Why?
 VI. What was the cause of the "Black Death"? How was it contained?

② LAST UNIT/Experience		① CURRENT UNIT		③ NEXT UNIT/Experience	
N/A (Algebra II)		TRIG FUNCTIONS BACKGROUND & INTRO		Graphing Trig Functions	
④ UNIT SCHEDULE		⑤ UNIT MAP			
UNIT	SCHEDULE	is about...			
	Cum	Developing Basic Prerequisite Knowledge and Skills To Successfully Master Trigonometry			
I	+2	I COORDINATE PLANE - functions - distance			
II	+3	Angle Measure Deg/Rad/DMS II Application: Circles, Angular/Linear Velocity			
III	+2	Intro Trig III Functions and Inverses			
IV	+1	Special IV Angles			
V	+2	Evaluating Trig Functions And Applications			
VI	+1				
VII	+2				
VIII	+1				
IX	+1				
X	-				
UNIT SELF-TEST QUESTIONS		UNIT RELATIONSHIPS			
① How do you recognize a relation is a function? ② What are the properties of functions? ③ How do you find distances on the coordinate plane? ④ How do you solve circle problems on the coordinate plane? ⑤ Compare and contrast Radian, Degree, DMS Angle measure.		Angles Coordinate plane radian			

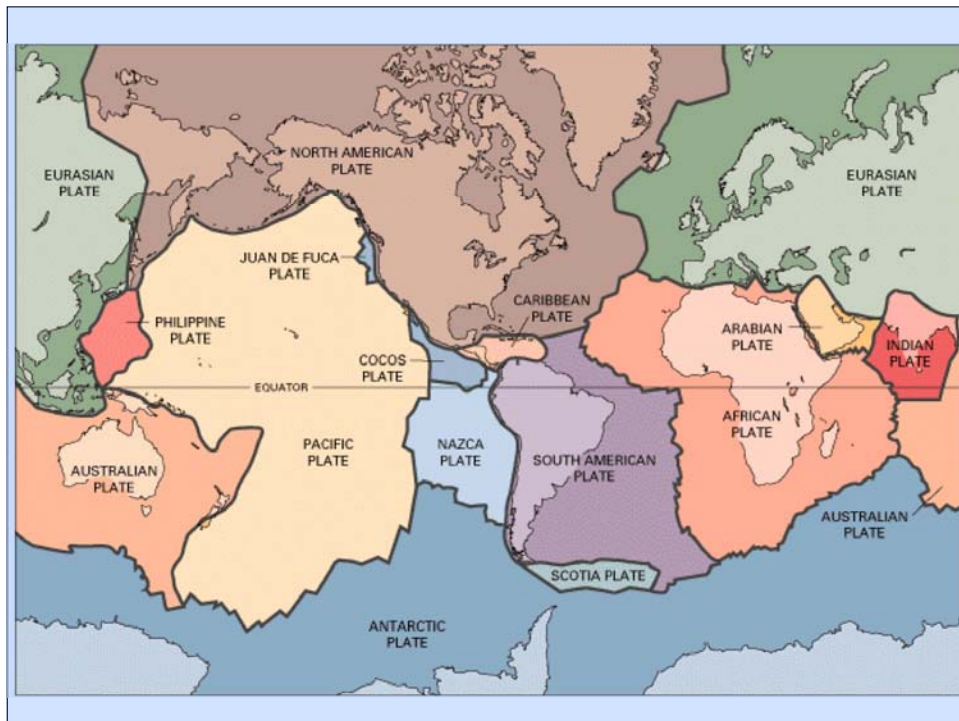
② LAST UNIT/Experience		① CURRENT UNIT		③ NEXT UNIT/Experience	
Independence		A New Nation Constitution		Launching the Nation	
④ UNIT SCHEDULE		⑤ UNIT MAP			
		is about...			
		Our written plan of government Supreme Law of the Land			
		Historical Background which has a			
		Preamble "We the people" introduced by			
		Legislative Branch which gives power to the			
		Executive Branch which gives power to			
		Judicial Branch which gives power to			
		General Rules of Operation which has			
		Amendments +, -, changes changed by			
⑦ UNIT SELF-TEST QUESTIONS		⑥ UNIT RELATIONSHIPS			
1. How did the Constitution resolve the problems created by the Articles of Confederation? 2. What is the roll and function of each branch of government? 3. How does the Constitution reflect our ideas and beliefs? 4. How is governmental power limited by the Constitution? 5. How does the Constitution protect our individual rights?		Compare/Contrast Sequence Problem/Solution			

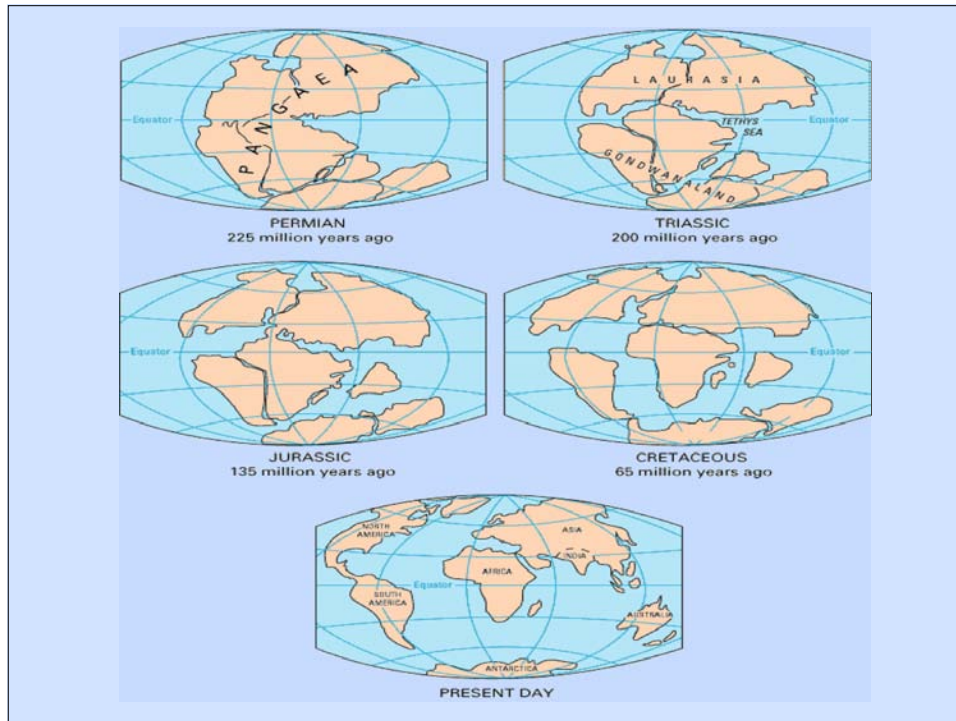
LAST UNIT/Experience Chemistry of Life	CURRENT UNIT Cellular Organization	UNIT/Experience Cell Energy
UNIT SCHEDULE Cornell Notes Study Packet Bubble Lab Diffusion Lab Egg Osmosis Lab Cell Jigsaw & Chart Cell Microscope Lab Lab Practical Cell Mobile Project	5 UNIT MAP is about... <div style="border: 1px solid black; border-radius: 50%; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">the structure & function of cells, the basic units of life</p> <hr style="border: 0.5px dashed black;"/> <p style="text-align: center;">pp. 168-199</p> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p>is related to</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px;">the Cell Theory</div> </div> <div style="text-align: center;"> <p>is determined by</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px;">organelle structure & function</div> </div> <div style="text-align: center;"> <p>is affected by</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px;">plasma membranes</div> </div> <div style="text-align: center;"> <p>determines</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px;">cell specialization</div> </div> <div style="text-align: center;"> <p>contributes to</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px;">cellular diversity</div> </div> </div>	
UNIT SELF-TEST QUESTIONS List the three parts of the cell theory. Identify the three structures common to most cells. Compare and contrast prokaryotes, eukaryotes and viruses in terms of their overall structure & complexity. Identify each cell organelle and describe its function within the cell. Explain what is meant by selectively permeable and the importance of plasma membranes in terms of the movement of molecules (including water) into and out of cells? Compare & contrast cell diversity and specialization in unicellular and multicellular organisms.		6 UNIT RELATIONSHIPS compare/contrast identify describe explain observe & evaluate demonstrate

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The Unit Organizer 9 EXPANDED UNIT MAP	Cellular Organization is about...	DATE _____																		
<div style="border: 1px solid black; border-radius: 50%; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">the structure & function of cells; the basic units of life</p> <hr style="border: 0.5px dashed black;"/> <p style="text-align: center;">pp. 168-199</p> </div>																				
<div style="border: 1px solid black; border-radius: 50%; padding: 5px; margin-bottom: 10px;">the Cell Theory</div> <p>states that</p> <ol style="list-style-type: none"> 1. all living things are made of cells 2. cells are the basic units of structure & function in living things 3. new cells come from existing cells 	<div style="border: 1px solid black; border-radius: 50%; padding: 5px; margin-bottom: 10px;">organelle structure & function</div> <p>such as</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">cytoplasm</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">nucleus (eukaryotes)</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">nuclear envelope</td> </tr> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">nucleolus (eukaryotes)</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">chromatin</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">organelle DNA</td> </tr> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">ribosome</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">endoplasmic reticulum</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">cytoskeleton</td> </tr> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">Golgi apparatus</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">mitochondria</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">microfilaments</td> </tr> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">lysosomes</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">chloroplast (plants)</td> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">microtubules</td> </tr> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">vacuoles (plants)</td> <td></td> <td></td> </tr> </table>	cytoplasm	nucleus (eukaryotes)	nuclear envelope	nucleolus (eukaryotes)	chromatin	organelle DNA	ribosome	endoplasmic reticulum	cytoskeleton	Golgi apparatus	mitochondria	microfilaments	lysosomes	chloroplast (plants)	microtubules	vacuoles (plants)			<div style="border: 1px solid black; border-radius: 50%; padding: 5px; margin-bottom: 10px;">cell specialization</div> <p>could be</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; margin-bottom: 10px;">cellular diversity</div> <p>includes</p> <ol style="list-style-type: none"> 1. cells 2. tissues 3. organs 4. organ systems <p>or</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; margin-bottom: 10px;">unicellular</div> <p>or</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; margin-bottom: 10px;">multicellular</div>
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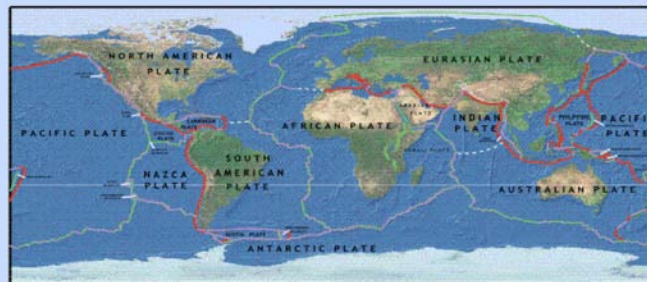






The Model

Plate Tectonics



Normal Fault Example



Dixie Valley-Fairview Peaks, Nevada earthquake
December 16, 1954

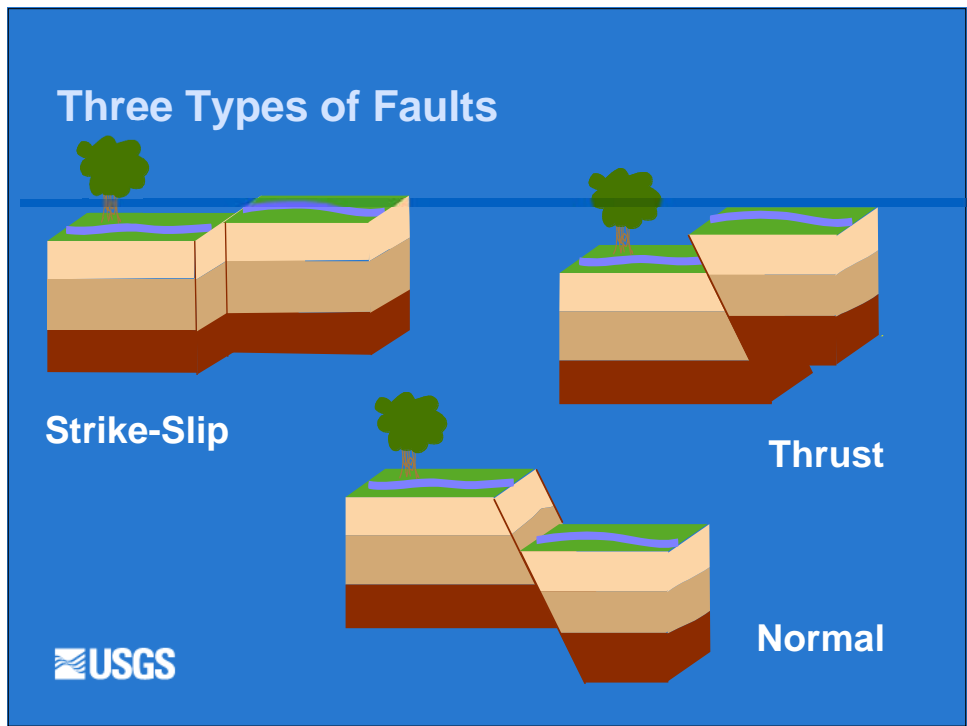


Thrust Fault Example



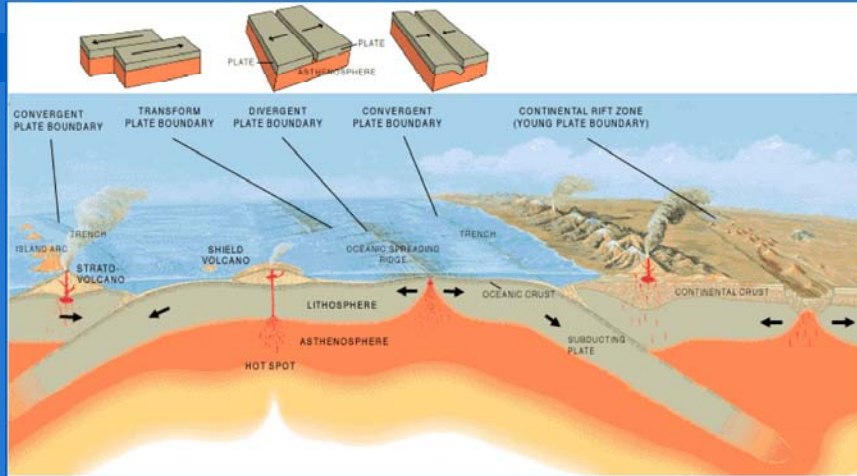
② LAST UNIT/Experience	① CURRENT UNIT Plate Tectonics	③ NEXT UNIT/Experience
⑧ UNIT SCHEDULE	⑤ UNIT MAP is about...	
⑦ UNIT SELF-TEST QUESTIONS	⑥ UNIT RELATIONSHIPS	
<small>Revised from The Unit Organizer Book. Copyright © Pearson Education, Inc. by The Unit Organizer Book.</small>		

4 Big Picture <i>Dynamic Earth Processes change the Earth's surface.</i> NAME <u>Dr. Reyes</u> Unit Organizer STANDARD DATE <u>2004</u>		
Plate Tectonics over geologic time has changed the Earth's surface		
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Big Picture <i>Dynamic Earth Processes change the Earth's surface.</i> NAME: <u>Dr. Reyes</u> Unit Organizer STANDARD DATE: <u>2004</u>	
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LAST UNIT: <u>Earthquakes and Volcanoes</u>	<div style="display: flex; justify-content: space-between;"> ① Plate Tectonics ② </div>
UNIT SCHEDULE	<div style="display: flex; justify-content: space-between;"> ③ Understanding the movement of the Earth's crust. ④ </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; background-color: #f4a460;"> Earth's Layers </div> <div style="text-align: center;"> <p>by describing</p> </div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; background-color: #90ee90;"> Understanding the movement of the Earth's crust. </div> <div style="text-align: center;"> <p>by explaining</p> </div> </div> <div style="text-align: center; margin-top: 10px;"> <p>by comparing</p> </div>
UNIT SELF-TEST QUESTIONS	UNIT RELATIONSHIPS
Benchmarks: Students will know	

Plate Boundaries



Big Picture <i>Dynamic Earth Processes change the Earth's surface.</i> NAME: Dr. Reyes Unit Organizer STANDARD DATE: 2004		
Plate Tectonics over geologic time has changed the Earth's surface		
LAST UNIT/Experience Earthquakes and Volcanoes	CURRENT UNIT Plate Tectonics	NEXT UNIT/Experience Climate
UNIT SCHEDULE _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	UNIT MAP <div style="text-align: center;"> <p>⑤ is about...</p> <div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 80px; background-color: #e0ffe0; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <p>Understanding the movement of the Earth's crust.</p> </div> <p>by describing</p> <div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 40px; background-color: #ffe0c0; margin: 5px auto; display: flex; align-items: center; justify-content: center;"> <p>Earth's Layers</p> </div> <p>by explaining</p> <p>by comparing</p> <div style="border: 1px solid black; border-radius: 50%; width: 120px; height: 40px; background-color: #c0e0ff; margin: 5px auto; display: flex; align-items: center; justify-content: center;"> <p>three types of plate boundaries</p> </div> </div> <p>Benchmarks: Students will know</p>	
UNIT SELF-TEST QUESTIONS 	UNIT RELATIONSHIPS 	

<p>4 Big Picture <i>Dynamic Earth Processes change the Earth's surface.</i> NAME <u>Dr. Reyes</u> Unit Organizer STANDARD DATE <u>2004</u></p>	
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<p>UNIT SCHEDULE</p>	<p>⑤ UNIT MAP</p> <p>Benchmarks: Students will know</p>
<p>UNIT SELF-TEST QUESTIONS</p>	<p>⑥ UNIT RELATIONSHIPS</p>

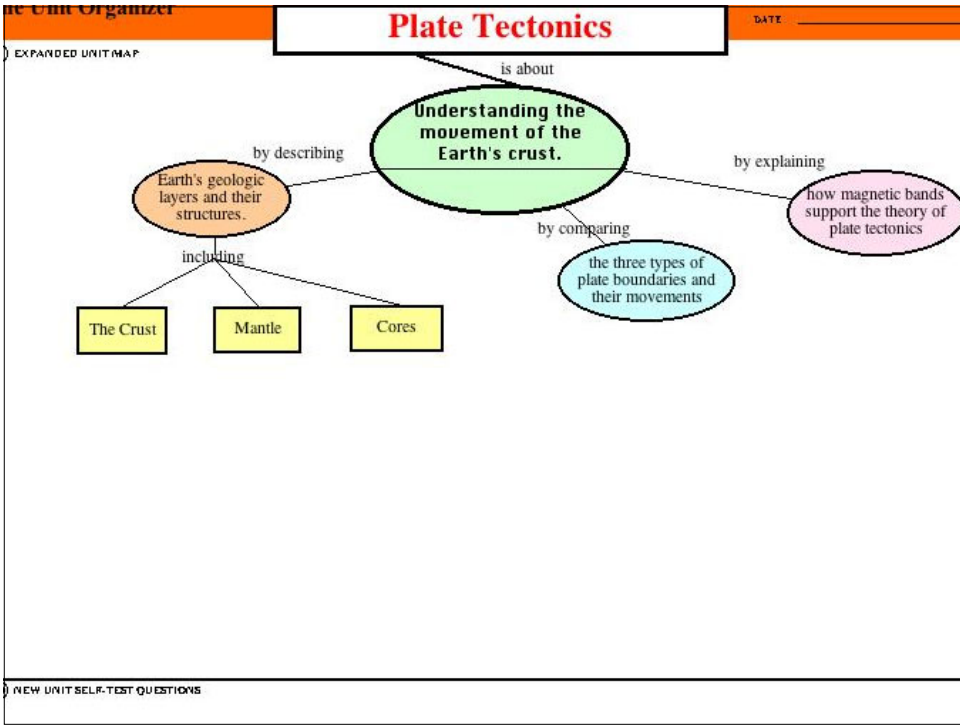
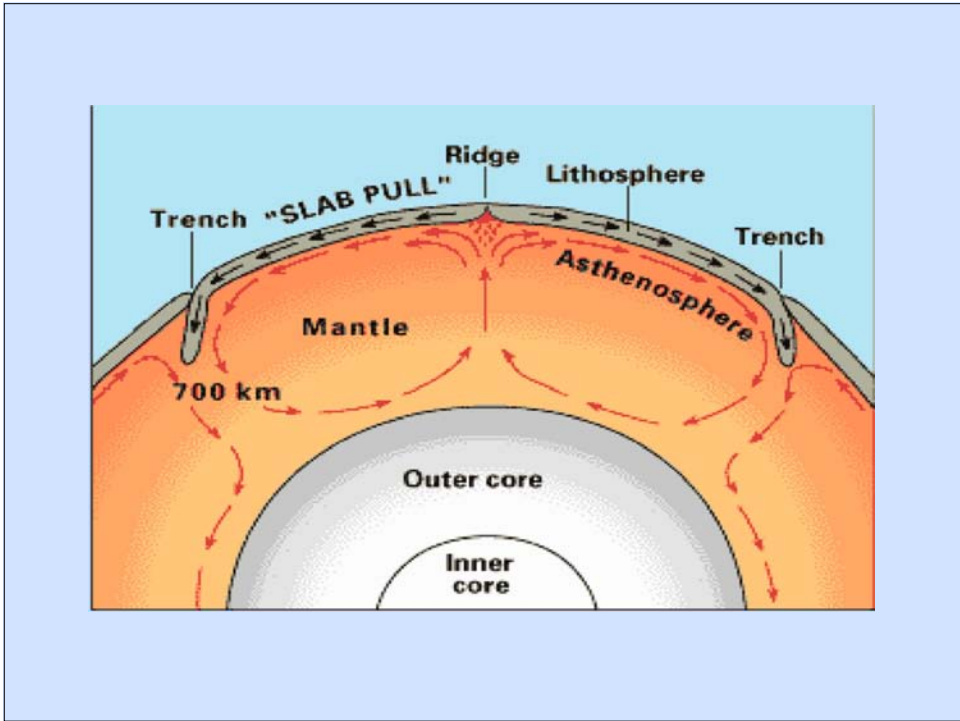
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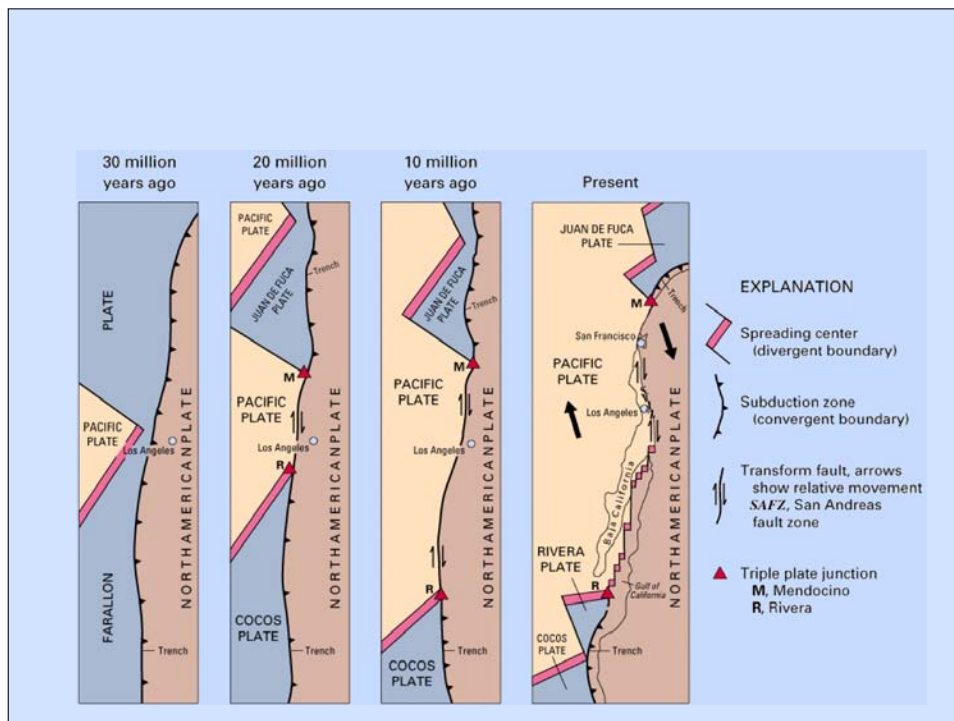
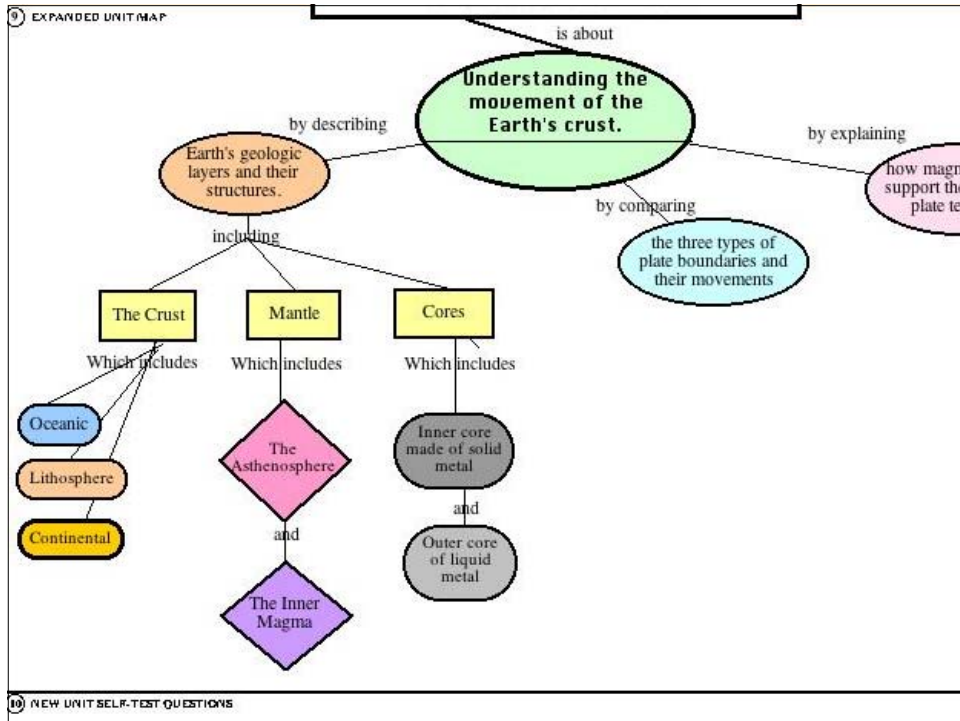
Plate Tectonics over geologic time has changed the Earth's surface

<p>2 LAST UNIT Experience Earthquakes and Volcanoes</p>	<p>1 CURRENT UNIT Plate Tectonics</p>	<p>3 NEXT UNIT Experience Climate</p>																									
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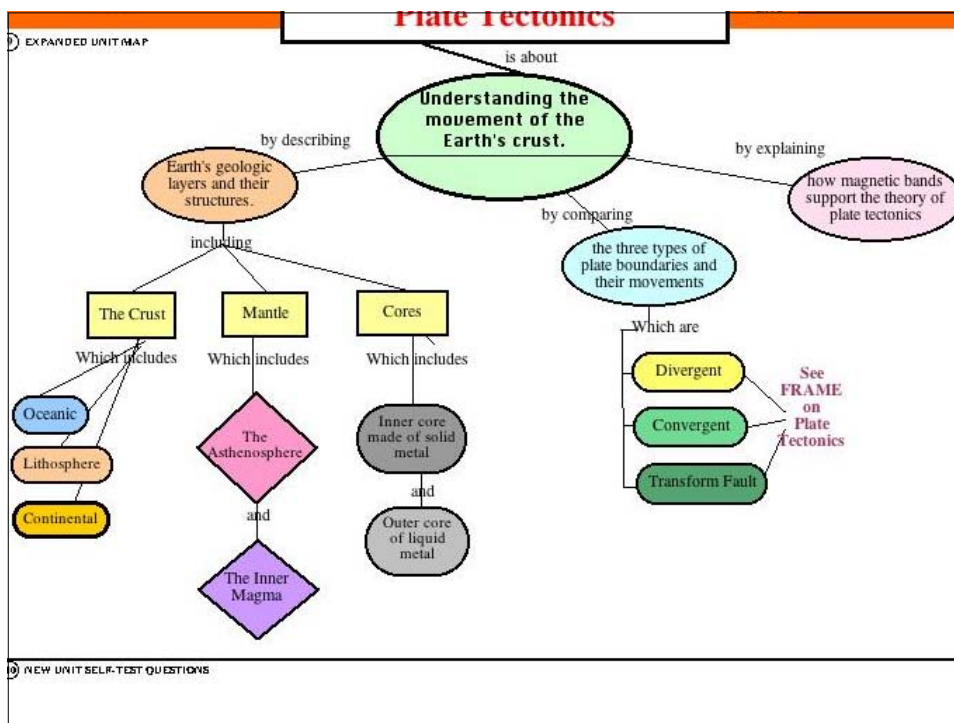
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The San Andreas Fault



Earthquake Effects - Ground Shaking



Loma Prieta, CA 1989



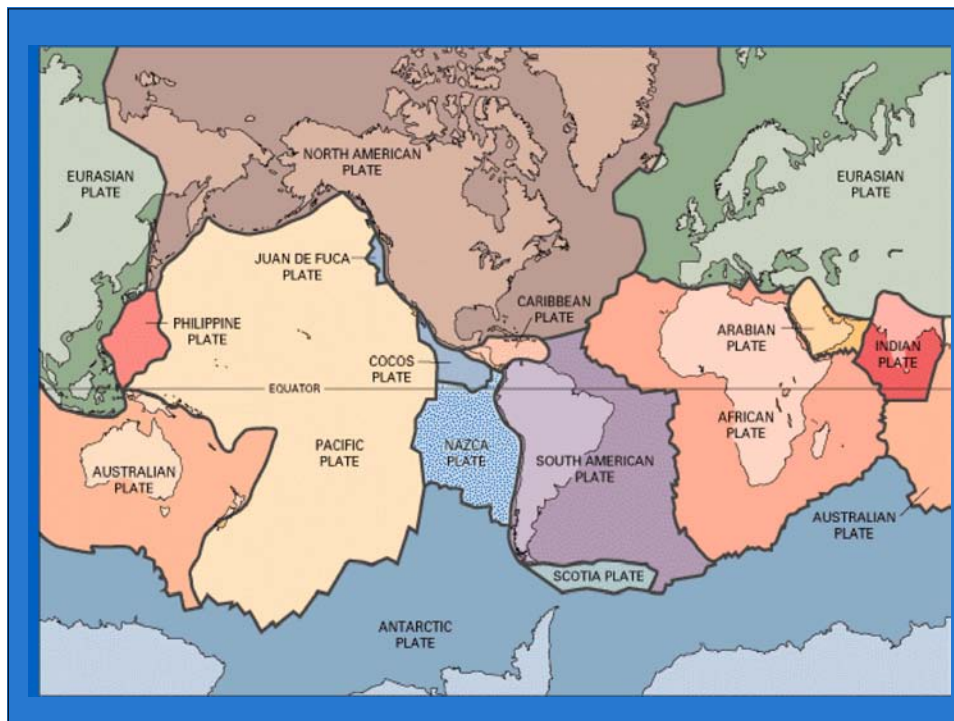
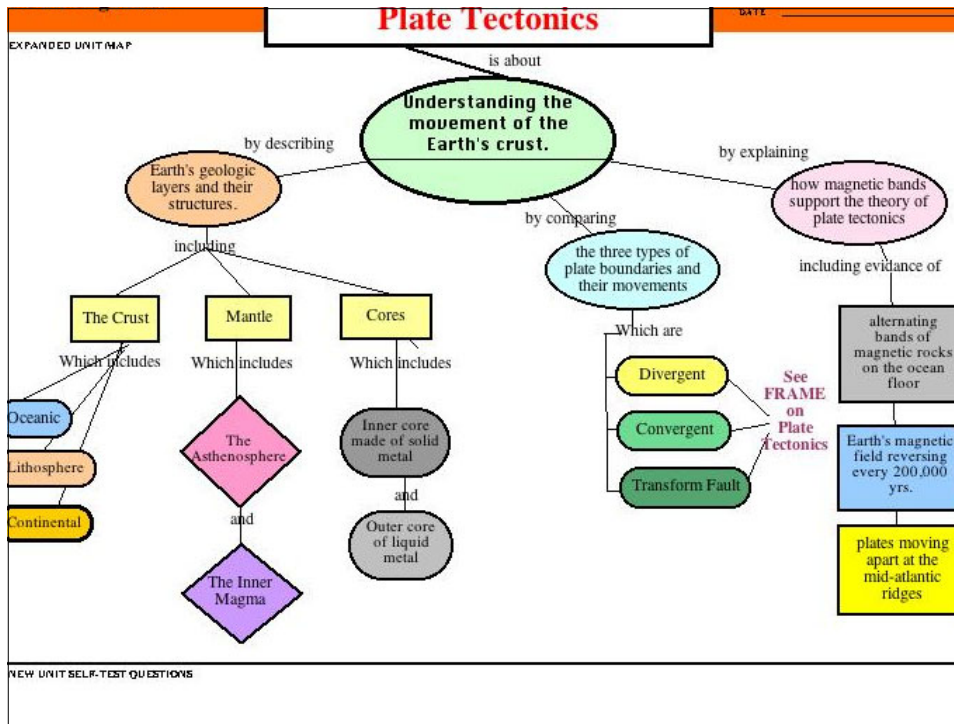
KGO-TV News ABC-7

Plate Tectonics Theory

explains
the changing of the patterns of land, sea and mountains over geologic time.

Boundaries	Movement	Principle Structures	Examples
Divergent		sea floor spreading	Mid-Atlantic Ridge Gulf of CA
Convergent (Subduction)		volcanoes mountains trenches/island arcs	Cascade Mts Himalayas Aleutian; Japan
Transform		earthquakes	San Andreas Fault; Baja

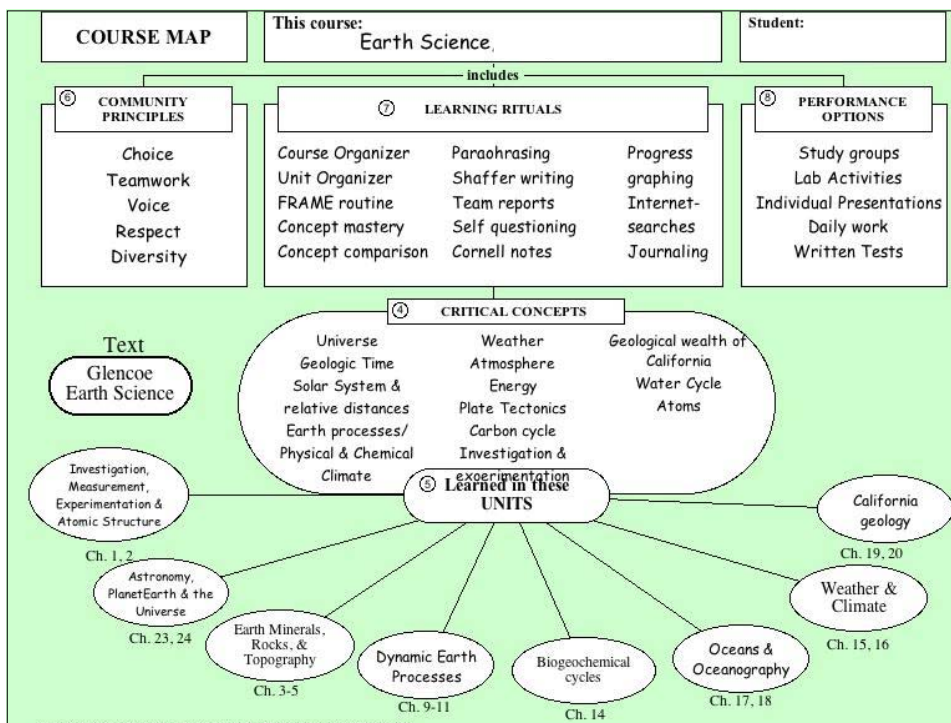
So What? Plate Tectonics Theory is the accepted framework within which scientists work today to explain our changing earth.



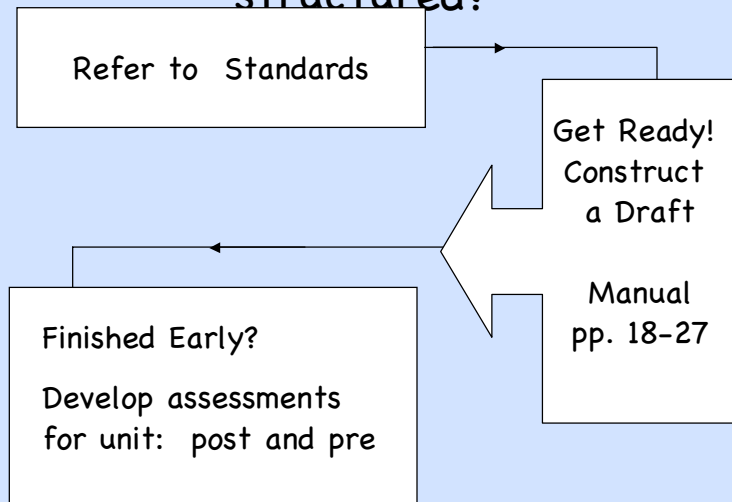
Teacher(s): Dr. Reyes	The Course Organizer	Student:
Title:		Course Date: 2004 - 2005

<p>① THIS COURSE: Earth Science, College Prep</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: fit-content; margin: 10px auto;"> <p style="text-align: center;">is about</p> <p>How the Physical and Chemical processes that formed Earth and continue to operate on this planet cause dynamic changes over geologic time.</p> </div> <p>② COURSE QUESTIONS:</p> <ol style="list-style-type: none"> 1. How has the changes in our Solar System affected our place in the Universe ? 2. How have the dynamic earth processes shaped our planet over geologic time? 3. How has the Sun's energy affected the Earth's climate and what other factors does our weather depend on? 4. How does the proximity to large bodies of water affect climate? 5. How are the physical and chemical effects of the global carbon cycle relate to photosynthesis, respiration, and the nitrogen cycle? 6. How has the chemical composition of the Earth's atmosphere evolved over geologic time? 7. How is the geology of California related to its wealth and its hazards? 8. What is the significance of using consistent and appropriate investigation and experimentation to solve scientific problems? 	<p>③ COURSE STANDARDS:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">What?</th> <th style="text-align: left;">How?</th> <th style="text-align: left;">Value?</th> </tr> </thead> <tbody> <tr> <td colspan="3">CONTENT:</td> </tr> <tr> <td>Understanding main concepts</td> <td>Unit tests</td> <td>30pts.</td> </tr> <tr> <td>Applying & demonstrating</td> <td>Lab Activities</td> <td>20pts.</td> </tr> <tr> <td>Examples & details</td> <td>Daily work</td> <td>20pts.</td> </tr> <tr> <td colspan="2"></td> <td style="border-top: 1px solid black;">70pts.</td> </tr> <tr> <td colspan="3">PROCESS:</td> </tr> <tr> <td>Paraphrasing</td> <td>Class demo</td> <td>15pts.</td> </tr> <tr> <td>Teamwork</td> <td>Class demo</td> <td>10pts.</td> </tr> <tr> <td>Being prepared</td> <td>Class demo</td> <td>5pts.</td> </tr> <tr> <td colspan="2"></td> <td style="border-top: 1px solid black;">30pts.</td> </tr> </tbody> </table> <p style="text-align: center; font-weight: bold; font-size: small;">COURSE PROGRESS GRAPH</p> <div style="display: flex; align-items: flex-start;"> <div style="width: 30px; text-align: center; margin-right: 5px;"> 100 90 80 70 60 50 40 30 20 10 0 </div> <div style="flex-grow: 1; border: 1px solid black; margin-right: 5px;"> </div> <div style="font-size: x-small; margin-left: 5px;"> 1 2 3 4 5 6 7 8 Units A=100-90 B=89-80 C=79-70 D=69-60 Redo=59 </div> </div> <p style="font-size: x-small; margin-top: 5px;">Legend: Total Score Content Process </p>	What?	How?	Value?	CONTENT:			Understanding main concepts	Unit tests	30pts.	Applying & demonstrating	Lab Activities	20pts.	Examples & details	Daily work	20pts.			70pts.	PROCESS:			Paraphrasing	Class demo	15pts.	Teamwork	Class demo	10pts.	Being prepared	Class demo	5pts.			30pts.
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How is teacher learning structured?



Teacher Planning Software

The Interactive Organizer

