Plan for the Day:

1) REMINDER, Astronomy Unit Test Recovery is due
January 9 (A-day)
January 10 (B-day)

1) CONTINUE Tectonic Plates part of unit:
a) Read Unit 4 Lesson 2 (pages 200-212). Answer questions 1-22
b) Read Unit 4 Lesson 3 (pages 216-224). Answer questions 1-19
ALL of Unit 4 for the project.

2) Receive and go over Forecasting Tectonic Plate Movement 100,000,000 years into the Future project.

Unit 2 Disciplinary Core Ideas

ESS2.A: Earth's Materials and Systems

- *All Earth processes are the result of energy flowing and matter cycling within and among the planet's systems. This energy is derived from the sun and Earth's hot interior. The energy that flows and matter that cycles produce chemical and physical changes in Earth's materials and living organisms.*

ESS1.C: The History of Planet Earth

- *Tectonic processes continually generate new ocean sea floor at ridges and destroy old sea floor at trenches. (HS.ESS1.C GBE),(secondary)*

ESS2.B: Plate Tectonics and Large-Scale System Interactions

- *Maps of ancient land and water patterns, based on investigations of rocks and fossils, make clear how Earth's plates have moved great distances, collided, and spread apart.*

Jan 5-6:43 AM

Astronomy Unit Test Recovery

REMEMBER, I will NOT accept test recovery after your class' due date of:
January 9 (A-day students only) or
January 10 (B-day students only).

You MAY turn in your completed recovery at the BEGINNING of class on YOUR class' due date or during Home Room (TAN MORIN BIN) any time BEFORE the due date.

All students had ample class time to do recovery on January 3 (A-day) and January 4 (B-day).

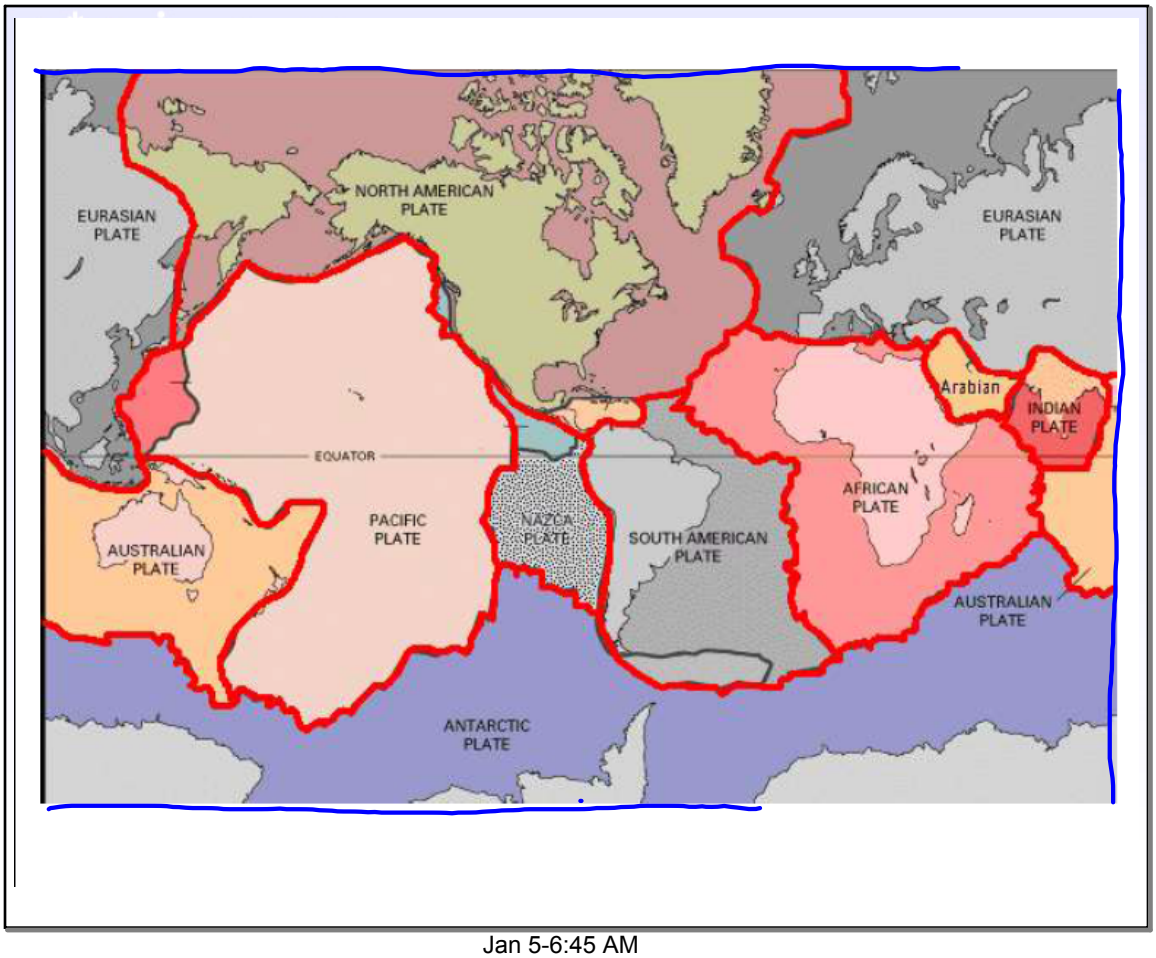
Jan 5-6:43 AM

Class Date

Forecasting Plate Drift – 100,000,000 Years into the Future

	4 (x 4)	3 (x 3.4)	2 (x 3)	1 (x 2.6)
Plate Placement (x 3) 4 4 4 (12)	All of the required 10 Earth's major tectonic plates are placed on a two-dimensional world map and reasonably predict where those plates will be located. Placement is based upon current scientific understanding of tectonic plate boundaries and the movement associated with those boundaries. Predicted map completely fits within the bounds of original map (7 1/8" x 10 1/2").	Most of the required 10 Earth's major tectonic plates placed on a two-dimensional world map reasonably predict where those plates will be located. Placement is mostly based upon current scientific understanding of tectonic plate boundaries and the movement associated with those boundaries. Predicted map has only a small part of one plate extending beyond the original map size (7 1/8" x 10 1/2").	Some of the required 10 Earth's major tectonic plates placed on a two-dimensional world map reasonably predict where those plates will be located. Placement is somewhat based upon current scientific understanding of tectonic plate boundaries and the movement associated with those boundaries. Predicted map has more than one (1) and less than three (3) plates extending beyond the original map size. (7 1/8" x 10 1/2").	Few or none of the required 10 Earth's major tectonic plates placed on a two-dimensional world map reasonably predict where those plates will be located. Placement is not based upon current scientific understanding of tectonic plate boundaries and the movement associated with those boundaries. Predicted map has three (3) or more plates extending beyond the original map size. (7 1/8" x 10 1/2").
Plate Movement Justification by Essay (x 3) 4 4 4 (12)	Student accurately describes the projected movement of each of the required 10 major plates based upon the type of boundary. Student correctly uses all of the science vocabulary acquired during research and classroom discussions throughout the essay. Student uses correct spelling and acceptable grammar throughout the essay. There are fewer than three (3) grammar and/or spelling errors in the essay.	Student accurately describes the projected movement of most of the required 10 major plates based upon the type of boundary. Student correctly uses most of the science vocabulary acquired during research and classroom discussions throughout most of the essay. Student uses correct spelling and acceptable grammar throughout most of the essay. There are fewer than five (5) grammar and/or spelling errors in the essay.	Student accurately describes the projected movement of some of the required 10 major plates based upon the type of boundary. Student correctly uses some of the science vocabulary acquired during research and classroom discussions throughout some of the essay. Student uses correct spelling and acceptable grammar throughout some of the essay. There are fewer than seven (7) grammar and/or spelling errors in the essay.	Student does not accurately describe the projected movement of any of the required 10 major plates based upon the type of boundary. Student incorrectly uses the science vocabulary acquired during research and classroom discussions throughout the essay or does not use it at all. Student uses incorrect spelling and unacceptable grammar throughout the entire essay. There are more than seven (7) grammar and/or spelling errors in the essay.
Score 24				

Jan 5-6:43 AM



Jan 5-6:45 AM

The surface of the Earth is always changing!

Pages 202 - 203 in your text provide a glimpse of the significant changes in Earth's surface over 250 million years of its 4.6 BILLION year history.

What might Earth have looked like before Pangea?

What might it look like in its distant future?

That is a question you will consider, explore, map and discuss (writing) while working on the project you are about to undertake.

Jan 5-6:43 AM

Tectonic Plate Movement Project

Predict the location of the Earth's Plates 100,000,000 years into the future using current scientific understanding of plate boundaries.
There are actually 15 major plates. You will only cut out ten (10), combining several smaller plates into larger ones to make the project easier but still give an idea of what the future surface of Earth will look like.

This project is an individual assessment of science principles discussed and learned from your reading of Chapter 1 (Inside Earth text) and the Unit - Plate Tectonics.

You may discuss your plans with a fellow student but turn in your own work.

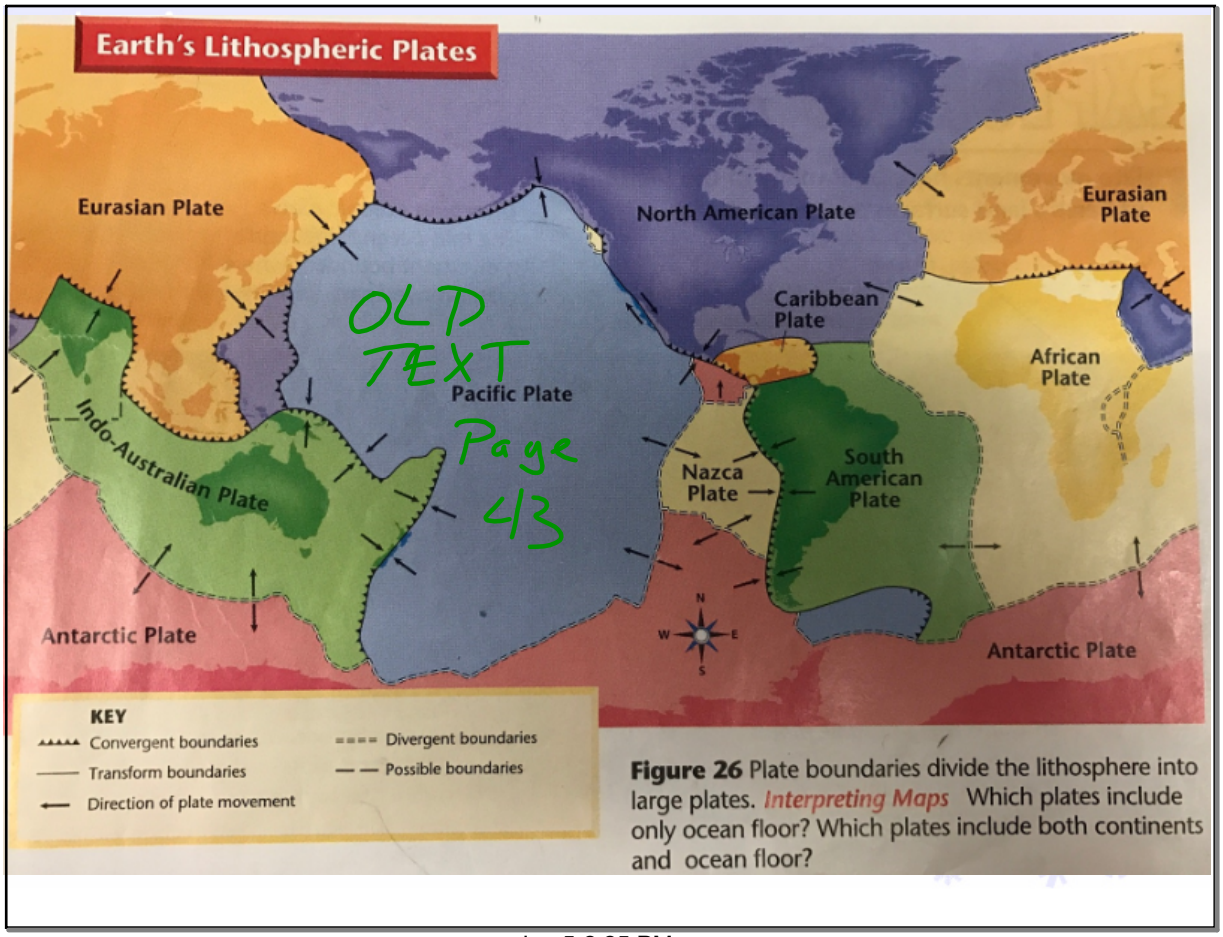
Jan 5-6:43 AM

Project due date to be determined and posted on HAC no later than Tuesday, January 17th. (Tentatively Jan 26/27.)

100,000,000 years at 1 cm per year is a math problem. Let's solve this problem together.

Then, I will help you mark up your map using page 43 in the INSIDE EARTHtext (each table has at least 4 to share) so you know how to move each major plate.

Jan 5-6:45 AM



Jan 5-2:25 PM

How much will EACH plate move in 100,000,000 years at 1cm/year?

100,000,000 cm total movement EACH plate.

$100{,}000{,}000\ \text{cm} \cdot \frac{1\ \text{m}}{100\ \text{cm}}$ = Total m moved

Km $\frac{1\ \text{Km}}{1000\ \text{m}}$

m $\frac{1\ \text{m}}{100\ \text{cm}}$

1,000,000 m = total distance EACH plate moves

$1{,}000{,}000\ \text{m} \cdot \frac{1\ \text{Km}}{1{,}000\ \text{m}}$ = total distance

1,000 km = Total distance EACH plate moved

Jan 5-2:26 PM

How much will each plate move in 100,000,000 years at 1cm/year?

100,000,000 cm total distance EACH plate moves

Km = $\frac{\text{Km m}}{1{,}000}$

$100{,}000{,}000\ \text{cm} \cdot \frac{\text{m}}{100\ \text{cm}}$ = total Each plate moves

m = $\frac{\text{m}}{100\text{cm}}$

1,000,000 m = Total Each plate moves

$1{,}000{,}000\ \text{m} \cdot \frac{\text{Km}}{1{,}000\ \text{m}}$ = Total each plate moves

1,000 km = Total Each plate moves

36B

Jan 6-9:46 AM

How much will EACH plate move in 100,000,000 years? Let's do the math!

$$100{,}000{,}000 \text{ years} \times \frac{1 \text{ cm}}{\text{year}} = \text{? total cm}$$

$$100{,}000{,}000 \cancel{\text{years}} \times \frac{1 \text{ cm}}{\cancel{\text{year}}} = \text{total cm}$$

100,000,000 cm = total cm EACH PLATE moves

Centimeters are NOT a useful unit of measure for this project. Kilometers are! But, we should convert to meters first!

$$100{,}000{,}\cancel{000}\ \cancel{\text{cm}} \times \frac{\text{m}}{1\cancel{00}\ \cancel{\text{cm}}} = \text{total m}$$

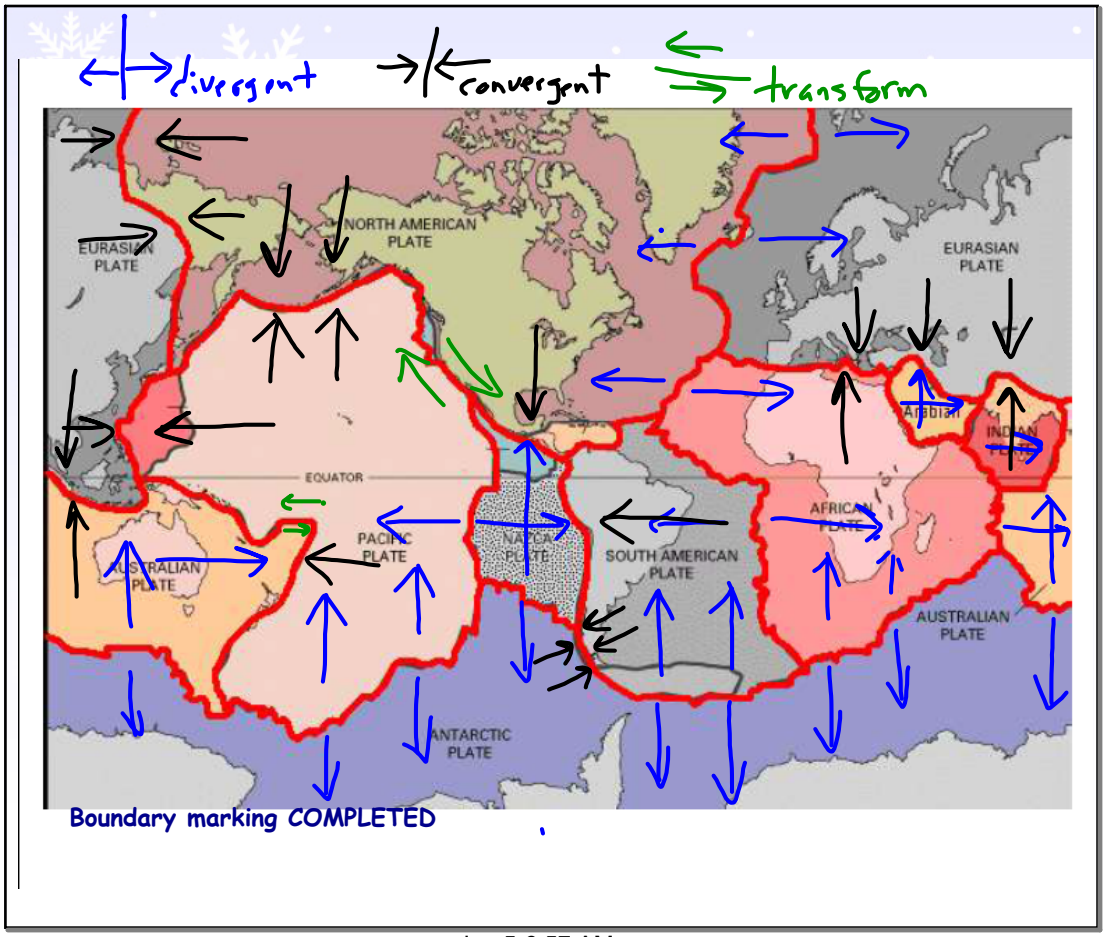
1,000,000 m = total m EACH PLATE MOVES

1,000,000 m = total m EACH PLATE MOVES

$$1{,}000{,}\cancel{000}\ \cancel{\text{m}} \times \frac{\text{km}}{1\cancel{000}\ \cancel{\text{m}}} = \text{total Km EACH PLATE MOVES}$$

1,000 km = total Km EACH PLATE MOVES

Jan 6-6:26 AM



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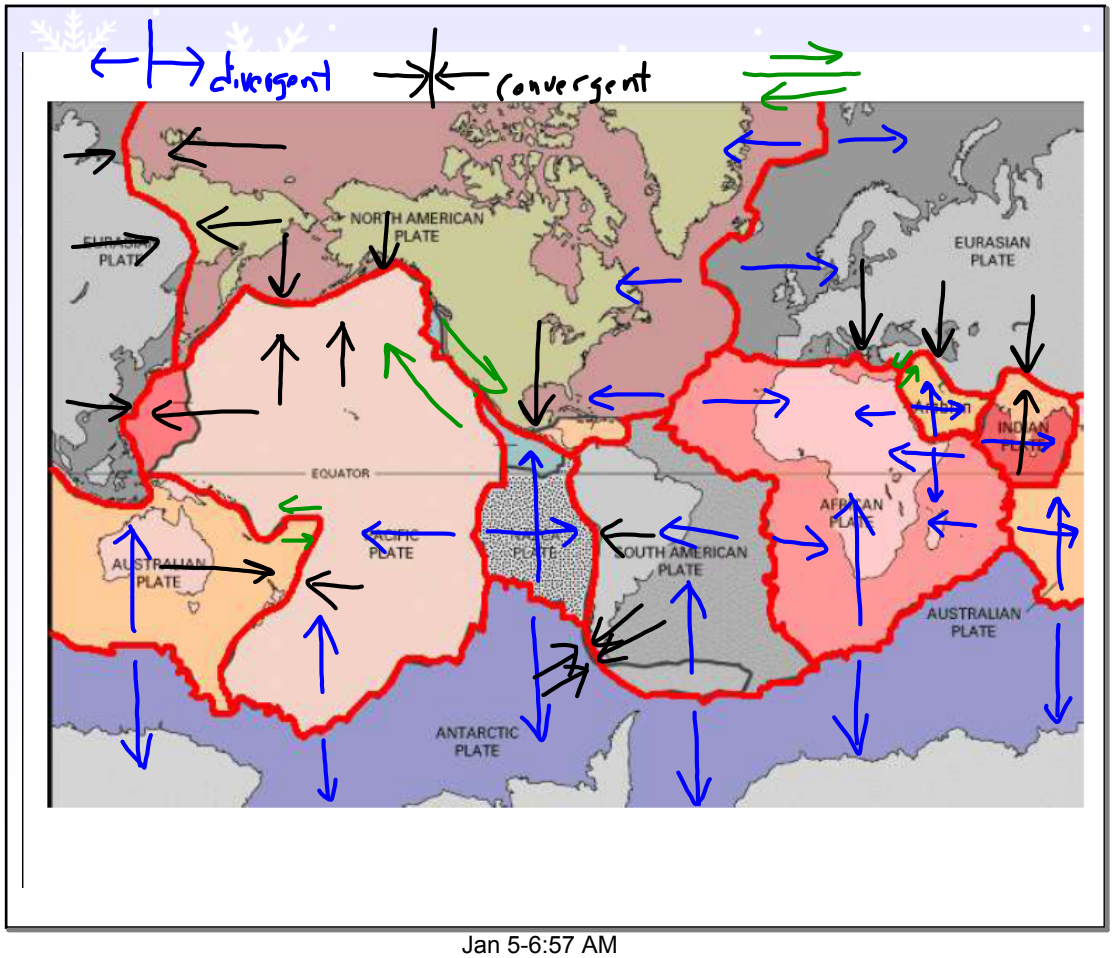

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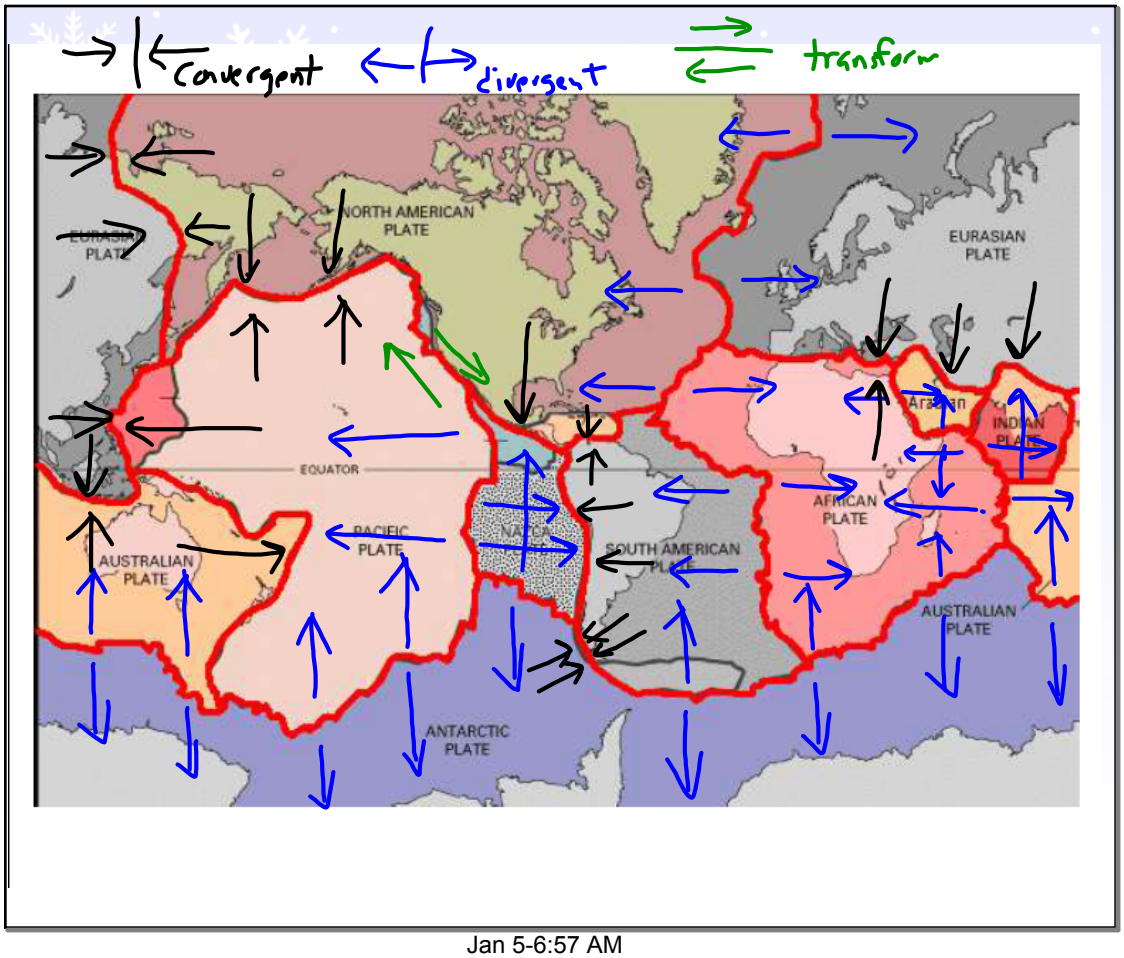

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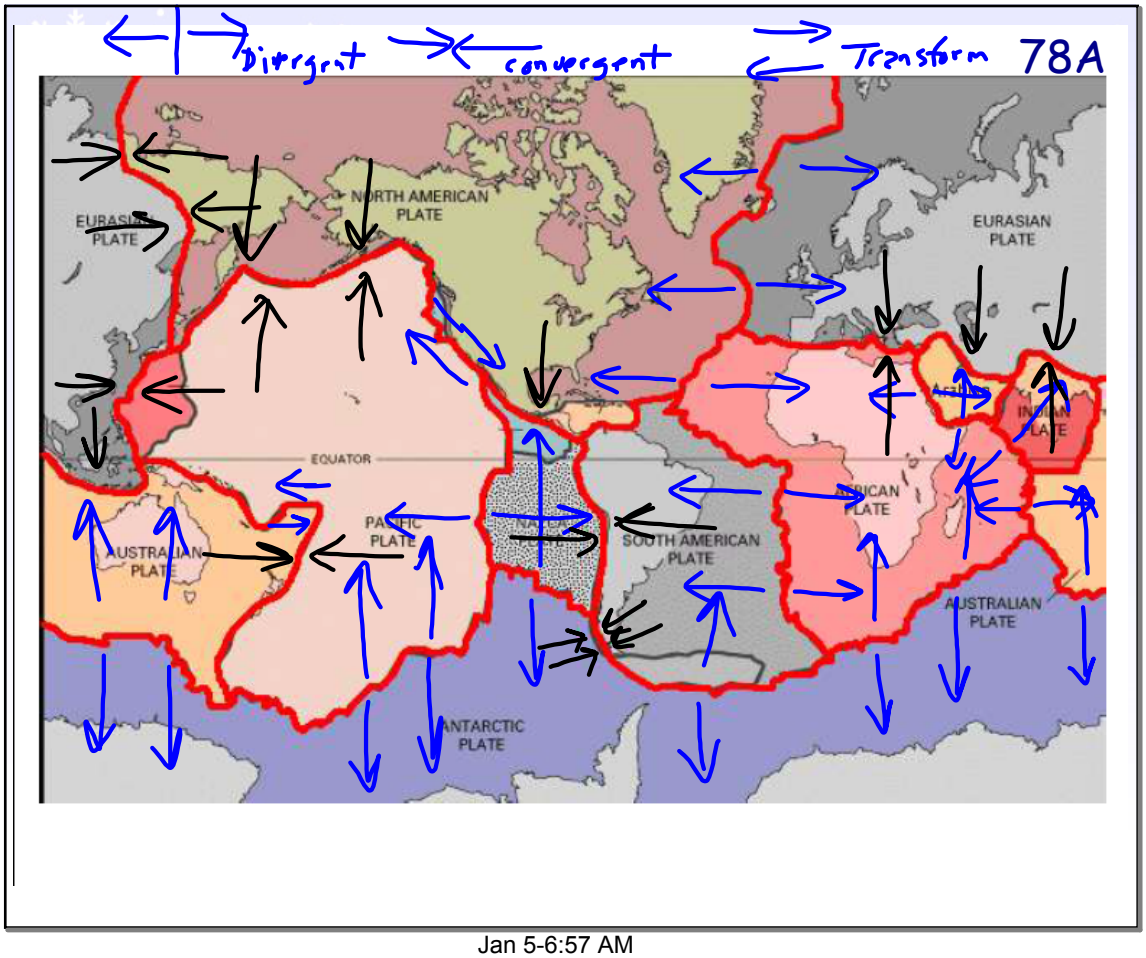

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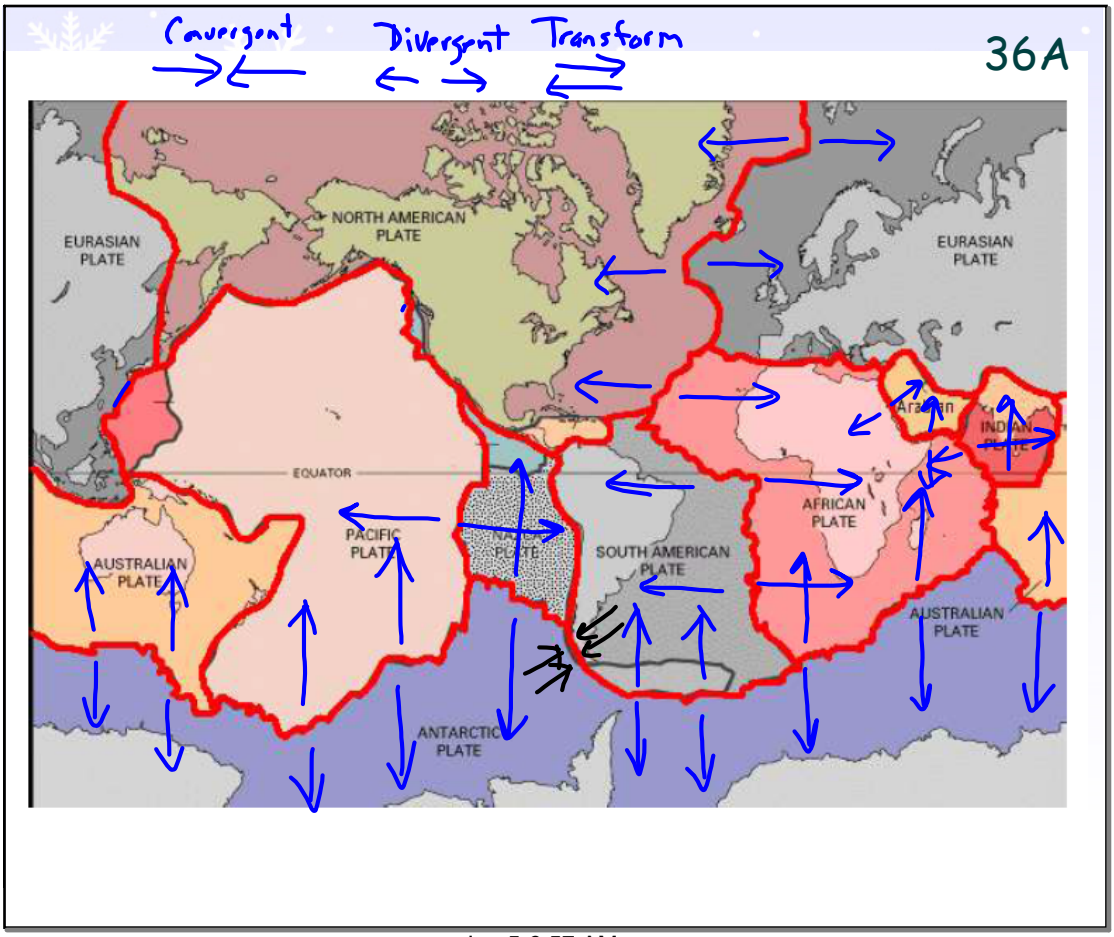
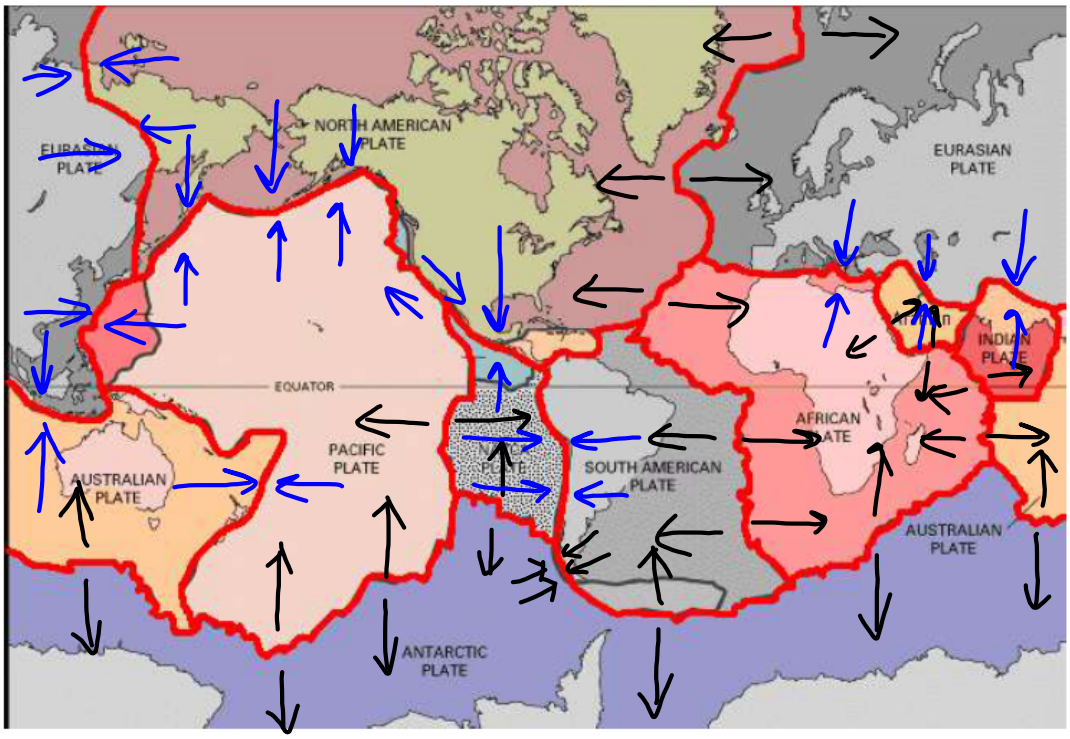


Jan 5-6:57 AM

12A



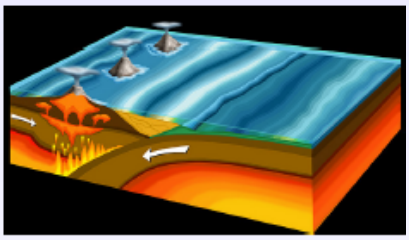
Jan 5-6:57 AM

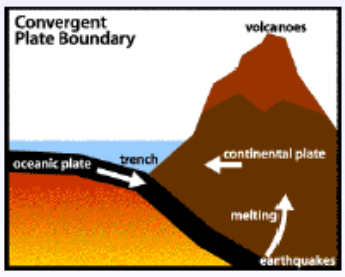
The place where two plates come together, or converge, is a convergent boundary and the result is called a collision.

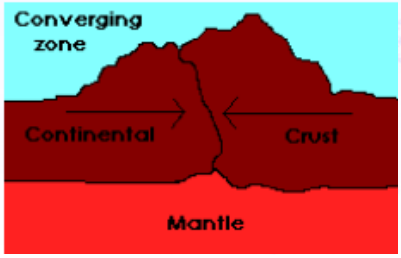
Two plates carrying oceanic crust meet at a trench. The plate that is less dense dives under the other plate and returns to the mantle (subduction).

Oceanic crust colliding with continental crust results in the more dense oceanic plate plunging beneath the continental plate through the process of subduction.

Continental crust colliding with continental crust results in head-on collision, squeezing the crust into mountain ranges.







Jan 5-6:38 AM