

Plan of the Day:

## Unit 2 Disciplinary Core Ideas

1) **START** working on your prediction map essays (due 1/25, A-day & 1/26, B-day)

2) **CONTINUE** reading and answering questions in Unit 4. I will check Unit 4 Lessons 2,3,4 & 5 today.

*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.

Sep 17-11:35 AM

If you have been faithful and focused in all the classes supporting this project, your prediction map should already be **COMPLETED**.

Today you will **START** your essay explaining why the Earth will look like your map 100,000,000 years from now! Your essay will use **CLAIM-EVIDENCE-REASONING** for **EACH** paragraph.

After today, you will have only **ONE** class meeting in which to work on this project. Any part not completed Monday (A-day) or Tuesday (B-day), becomes student-assigned **HOMEWORK**.

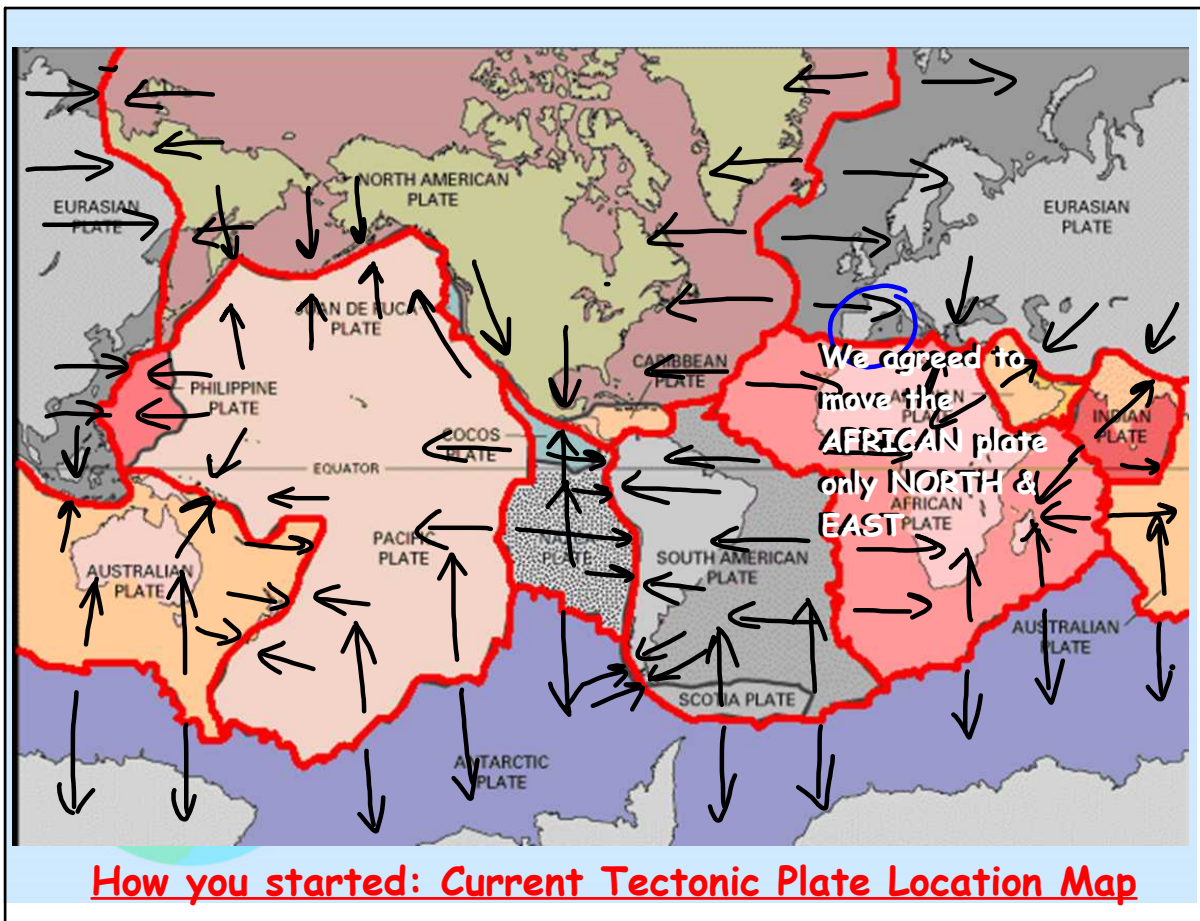
Feb 26-2:06 PM

Remember, your **ESSAY** is **HALF** of your grade for this project and **MUST BE** a **MINIMUM** of **3 paragraphs!**

The **MAP** is the other **HALF** of your grade.

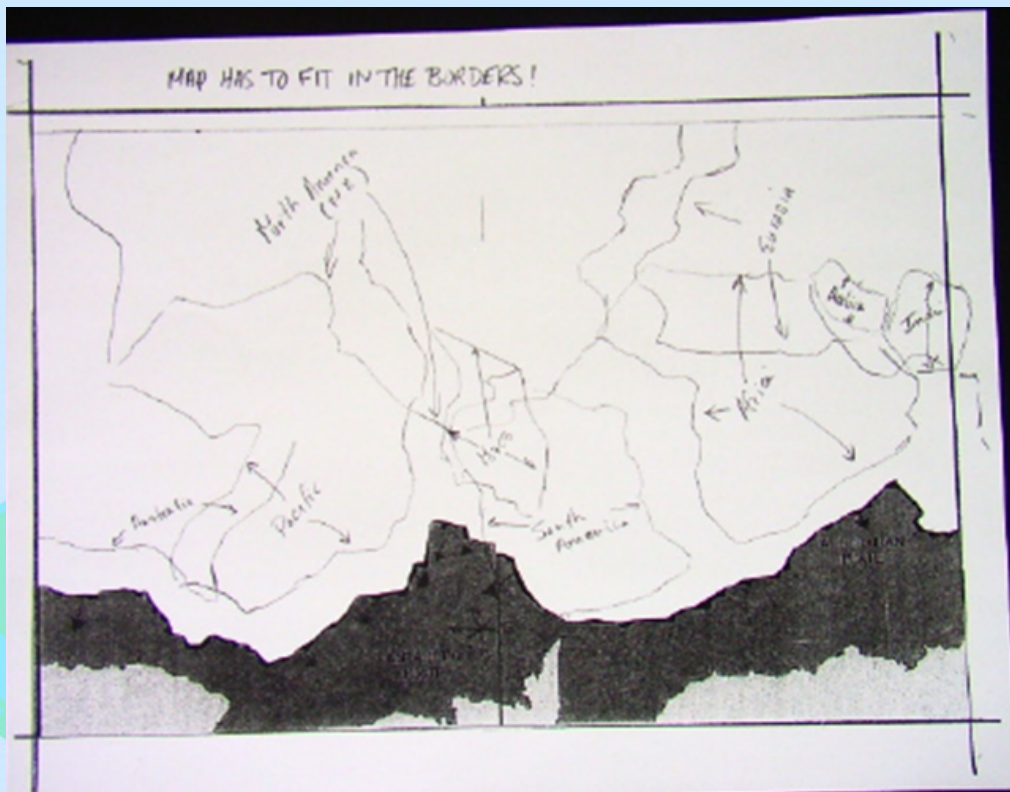
Refer to your rubric as a refresher for how I will score your project.

Feb 28-7:58 AM



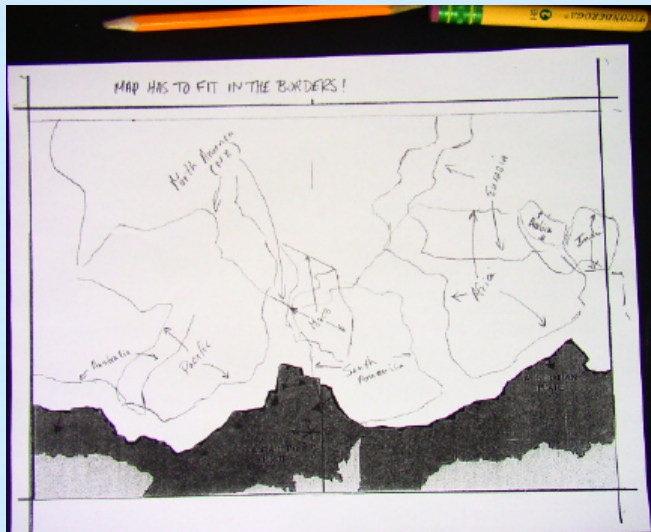
Mar 7-6:35 AM

## How you tracked each plate's predicted location after 100,000,000 years of movement



Feb 10-7:02 AM

## You marked each plate's movement



### Approach?

Move and mark the location of each plate **ONE AT A TIME** along the Antarctic plate to help you determine where each plate will be located. (See below).

**The Nazca and Pacific Plates are OCEAN CRUST ONLY plates.**

**The Arabian plate is a CONTINENTAL CRUST ONLY plate.**

**All other plates carry BOTH continental and ocean crust.**

### Helpful hints!:

Glue down the Antarctic plate so you have a reference point.

Move each plate the equivalent of 1000 km (Spain and Portugal together is the right distance, ~ 6 mm).

Because you anchored the Antarctic plate, you will need to leave a space representing 1000 km of crust addition. Then add another space representing the growth of each plate diverging from it. Then move the plate the distance it moves east or west. Mark the lower half of the plate and label it. This will help you keep track of the relationships between plates before you glue anything!

Don't forget that there is a small convergent boundary on the western tip of the South American plate that does something interesting. This was modeled in class!

Feb 10-7:02 AM



## IMPORTANT REMINDER!

Earth's crustal plates CANNOT leap-frog over one another.

That means, 100,000,000 years from now the current plates will remain surrounded by the same plates surrounding them now .

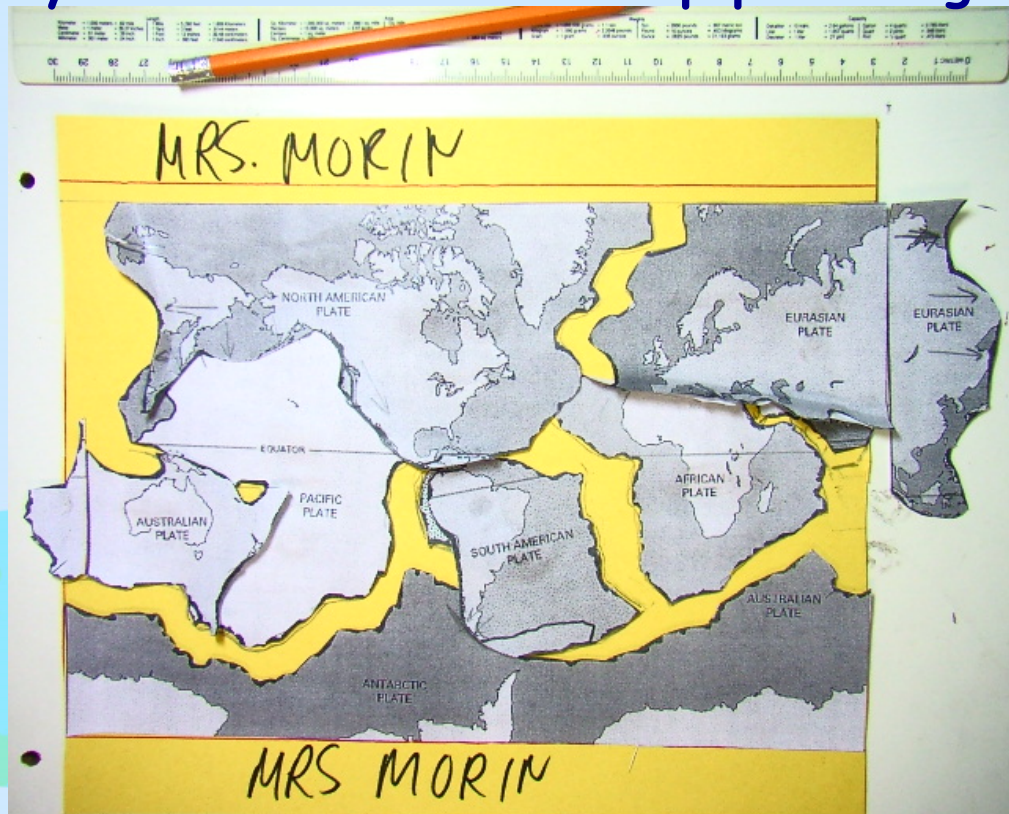
Only the shape, size and location of the plates will differ!



Mar 10-6:40 AM

## What you should have ended up producing.

Earth 100,000,000 years in the future



Feb 8-7:03 AM

How you should have solved the case of the out-of-bounds plates.



Feb 10-7:03 AM

Organize your thoughts for the two tasks identified in the rubric:

1) move the plates on your prediction map (This was modeled in class and is pictured several recent lessons on [mrsmorin.weebly.com](http://mrsmorin.weebly.com)); AND

2) write an essay that makes a claim and justifies:

a) **HOW** (evidence) your map, predicting the position of Earth's major tectonic plates 100,000,000 million years into the future, looks.

b) **WHY** (reasoning) the map looks SO DIFFERENT from your starting map, which shows the **current** position of Earth's major tectonic plates.

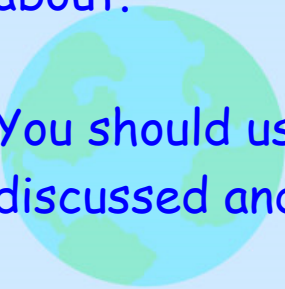
Mar 5-8:57 AM

Remember: the opening CLAIM for your essay should look like this:

In 100,000,000 years, the Earth will look quite different!

or be similarly broad to give you a lot to talk about.

You should use ALL of the vocabulary already discussed and listed next page!



Feb 10-6:56 AM

### Expected vocabulary for the essay:

| Divergent  | Convergent  | Transform  |
|--|---|--|
| Gain crust<br>Sea-floor spreading<br>Mid-ocean ridge<br>Rift valley<br>Earthquakes | Lose crust<br>Subduction<br>Subduction zone<br>Ocean trench<br>Mountain building<br>Earthquakes | Neither gain nor lose crust<br>Plates slide past each other<br>Earthquakes |

### Miscellaneous terms for the essay:

|   |   |   |
|---|---|---|
| Magma<br>Lava<br>Plate boundary<br>Tectonic plate | Basalt<br>Granite<br>Ocean crust<br>Continental crust | Fault<br>Mountains<br>Convection currents |
|---|---|---|

Feb 8-6:53 AM

- 1) **1st Paragraph** - Make the BIG claim:  
**In 100,000,000 years, the Earth's surface will look quite different.**
  - a) Support your claim by talking generally about how the three different type of plate boundaries contribute to that claim.
- 2) **2nd Paragraph** - Make a claim about ONE of the three types of boundaries.
  - a) Support that claim by evidence (features) YOU SEE in your map (use the vocabulary).
  - b) Explain WHY you see that evidence (use the vocabulary).
- 3) **3rd Paragraph** - Make a claim about ANOTHER of the three types of boundaries.
  - a) Support that claim by evidence (features) YOU SEE in your map (use the vocabulary).
  - b) Explain WHY you see that evidence (use the vocabulary).
- 4) **4th Paragraph** - Make a claim about the REMAINING boundary.
  - a) Support that claim by evidence (features) YOU SEE in your map (use the vocabulary).
  - b) Explain WHY you see that evidence (use the vocabulary).
- 5) **5th Paragraph**- Restate your original claim
  - a) Restate the general evidence (features) YOU SEE in your map (use the vocabulary).
  - b) Re-explain WHY you see that evidence (use the vocabulary)

Feb 10-6:46 AM

### TOPIC SENTENCE SUGGESTIONS!

#### 1st Paragraph:

In 100,000,000 years, the Earth's surface will look quite different.

#### 2nd Paragraph:

Convergent boundaries caused many of the changes seen.

#### 3rd Paragraph:

Divergent boundaries also contribute many changes.

#### 4th Paragraph:

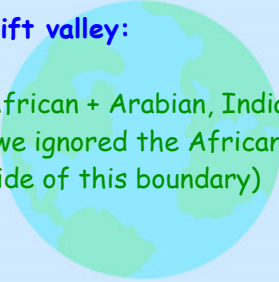
Although there are very few, transform boundaries change ocean and continental landscapes.

#### 5th Paragraph:

As you can see, the Earth will look very different far into the future.

Feb 12-7:39 AM



| Divergent  | Convergent  | Transform   |
|--|---|---|
| <p>Mid-ocean ridge,<br/>sea-floor spreading:</p> <p>North American + Eurasian</p> <p>South American + Africa</p> <p>Antarctic + Australian,<br/>Pacific, Nazca, South<br/>American and African</p> <p>Rift valley:</p> <p>African + Arabian, Indian<br/>(we ignored the African<br/>side of this boundary)</p>  | <p><b>Mountains:</b></p> <p>North American + Eurasian</p> <p>Eurasian + African, Arabian,<br/>Indian</p> <p>South American + North<br/>American</p> <p><b>Volcanic mountains:</b></p> <p>Pacific + North American</p> <p>Pacific + Eurasian</p> <p>Nazca + South American</p> <p><b>Ocean Trenches:</b></p> <p>Pacific + Australian</p> | <p>Shift in location:</p> <p>Pacific + North<br/>American<br/>(San Andreas Fault)</p> |

Feb 12-9:07 AM

Due Dates for the:

Forecasting Plate Drift- 100,000,000  
years into the Future

**25 January (A-day)**

**26 January (B-day)**



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Mar 7-10:41 AM