**Building your Boundaries**

**Your task**:

Over the course of the next two classes you will be working in groups of 4-5 to create an assigned plate boundary segment of the Earth’s Lithosphere.

**Materials** (items provided for you):

* Blank paper for birds eye and cross sectional diagrams
* Data Booklet - Map of the Pacific Coast of North America
* Material for your base
* Plasticine – one box containing 4 different colours

Feel free to bring in objects from home to add detail and clarity to your model!

**Objectives**:

To connect geologic features found at or near a plate boundary with the mechanism that drives plate tectonics.

Things to consider (and include in your final presentation!):

* What is the name/kind of the boundary?
* What kinds of plates are interacting at the plate boundary?
* How would you describe the interaction between the plates at the boundaries?
* What is happening on the earth’s surface (geologic features) at/near that boundary?
* What is mechanism causing the plates to interact in the manner that they do?
* What major human settlements are located near your plate boundary?

**Procedure**:

*Where to begin?*

Before you create your Plasticine 3D model, you must create two fully labeled and scaled diagrams of your assigned boundary. *You will then use these diagrams to guide your construction of your Plasticine model.*

* Diagram 1: A scaled birds eye view of your boundary, showcasing the boundary, geologic features and human settlements
* Diagram 2: A scaled cross-section view that shows the plates interacting (at the surface and below) leading to the formation of geologic features above ground

*When you are finished the diagrams….*

Show your teacher, and ***if given the ok***, collect the materials to create your 3D map!

Requirements for the models:

1. The model should be *relatively* scaled
2. The boundary has depth and is accurate both from a birds eye and cross-sectional viewpoint
3. All major above ground and below ground features are included AND labeled using toothpicks

*When your 3D model is complete…*

Requirements for the presentation: (3-5 minutes in length)

1. A description of your boundary and what is happening at the boundary.
2. An explanation of the mechanism that leads to the plate movement and therefore the plate interaction at your boundary.
3. An explanation of the major geological features that result from the plate interactions.
4. If human settlements are located near by, how are they affected by the plate boundary?
5. Historically, have there been any significant geologic events at or near your plate boundary?

**Assessment:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Beginning (0)** | **Developing (1-2)** | **Accomplished (3-4)** | **Exemplary(5-6)** |
| **Communication - B** | | | |
| The student does not reach a standard described by any of the descriptors given to the right. | The student uses a **limited range** of scientific language **correctly**.  The student communicates scientific information with **limited effectiveness**. | The student uses **some** scientific language correctly.  The student communicates scientific information with **some effectiveness**. | The student uses **sufficient** scientific language correctly.  The student communicates scientific information **effectively**. |
| **Sufficient** = all vocab: boundary type, landforms, layers, mechanism  **Effective communication** = speaks clearly, from memory, uses model to supplement explanation, demonstrates full understanding of the material | | | |
| **Knowledge and Understanding – C** | | | |
| The student does not reach a standard described by any of the descriptors given to the right | The student **recalls some** scientific ideas, concepts and/or processes. | The student **describes** scientific ideas, concepts and/or processes. | The student **uses** scientific ideas, concepts and/or processes **correctly** to **construct scientific explanations**. |
| **Correctly constructs scientific explanations=** Using the vocabulary above you clearly and concisely explain you model and mechanism | | | |
| **Attitudes in Science - F** | | | |
| The student does not reach a standard described by any of the descriptors given to the right | The student **requires some guidance** to work safely and **some assistance** when using material and equipment.  The student requires **some guidance** to work responsibly with regards to the living and non-living environment.  When working as part of a group, the student needs **frequent reminders to cooperate with others**. | The student **requires little guidance** to work safely and **little assistance** when using material and equipment.  The student **works responsibly** with regards to the living and non-living environment.  When working as part of a group the student **cooperates with others on most occasions**. | The student **requires no guidance** to work safely and uses material and equipment **competently**.  The student **works responsibly** with regards to the living and non-living environment.  When working as part of a group, the student **cooperates with others**. |

