

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 and then connect them the mechanism that drives plate tectonics.

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...

Prepare a presentation that includes: (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. How your group work together to create the model and to solve problems as they arose.
5. Historically, have there been any significant geologic events at or near your plate boundary? If human settlements are located nearby, how are they affected by the plate boundary?
6. What are the strengths and limitations of your model?

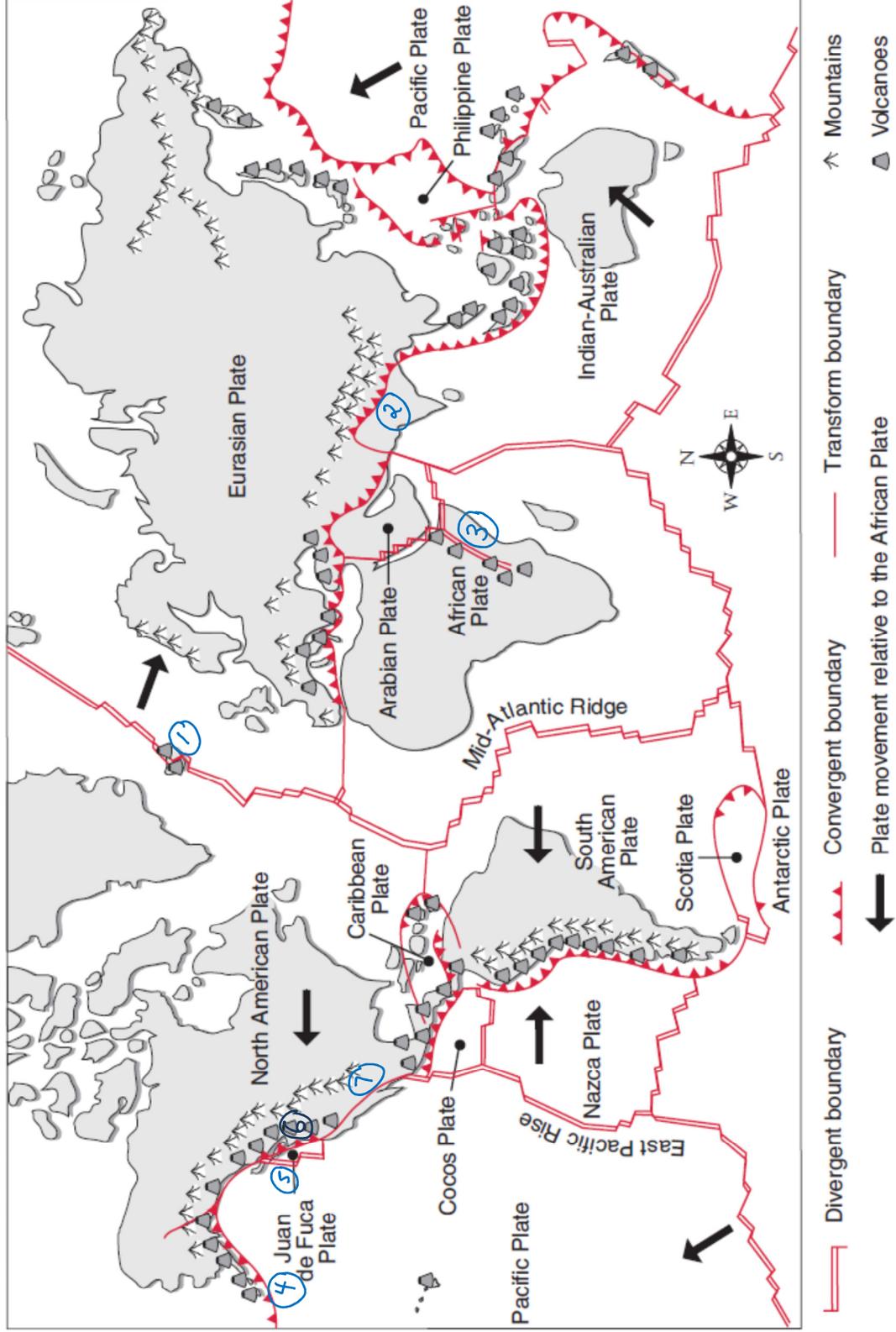
Assessment:

Criterion A: Knowledge and Understanding				
(0)	Beginning (1-2)	Developing (3-4)	Accomplished (5-6)	Exemplary (7-8)
<i>I have not achieved a standard described by any of the descriptors to the right.</i>	<p><i>I am able to:</i> state scientific knowledge</p> <p>apply scientific knowledge and understanding to suggest solutions to problems set in familiar situations</p> <p>interpret information to make judgments.</p>	<p><i>I am able to:</i> outline scientific knowledge</p> <p>apply scientific knowledge and understanding to solve problems set in familiar situations</p> <p>interpret information to make scientifically supported judgments.</p>	<p><i>I am able to:</i> describe scientific knowledge</p> <p>apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations</p> <p>analyse information to make scientifically supported judgments.</p>	<p><i>I am able to:</i> explain scientific knowledge <i>(numbers 1-3 above)</i></p> <p>apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations <i>(number 4-5 above)</i></p> <p>analyse and evaluate information to make scientifically supported judgments. <i>(number 6 above)</i></p>

Command Terms for Sciences

- Analyse** - Break down in order to bring out the essential elements or structure. To identify parts and relationships, and to interpret information to reach conclusions.
- Apply** - Use knowledge and understanding in response to a given situation or real circumstances
- Describe** - Give a detailed account or picture of a situation, event, pattern or process
- Evaluate** - Make an appraisal by weighing up the strengths and limitations
- Explain** - Give a detailed account
- Interpret** - Use knowledge and understanding to recognize trends and draw conclusions from given information
- Outline** - Give a brief account
- Solve** - Obtain the answer(s) using appropriate methods
- State** - Give a specific name, value or other brief answer without explanation or calculation
- Suggest** - Propose a solution, hypothesis or other possible answer

WORLD TECTONIC PLATE BOUNDARIES MAP



- Divergent boundary
- Convergent boundary
- Transform boundary
- Plate movement relative to the African Plate
- Mountains
- Volcanoes

MAP OF THE PACIFIC COAST OF NORTH AMERICA

