

2.2

EDIBLE TECTONICS

What types of boundaries are associated with plate movement?

MATERIALS

- Candy bar, preferably a Milky Way bar (1 per group or 1 fun size per student)
- Edible Tectonics Student Worksheet
- Wax paper or paper towel
- Hand sanitizer
- Plastic knife

Warning: *There are nuts and milk products incorporated into this lab. If you have a nut or milk allergy, please inform the instructor and do not take part in this lab.*

PROCEDURE

1. Clean and sanitize your hands.
2. Tear off a section of wax paper or paper towel to place your candy bar on.
3. Open your candy bar and place it on the wax paper or paper towel.
4. Refer to your "Edible Tectonics" student worksheet, follow the steps outlined and answer all relative questions as you proceed.

REFLECTION

Compare and contrast the three different types of plate boundaries including their types of stress, relative direction of motion, and any possible landforms resulting from their formation.

Plate boundary type	Associated stress	Relative directions of motion (use arrows)	Predict geologic landforms and events

2.2 EDIBLE TECTONICS: STUDENT WORKSHEET

1. Use your thumbnail to make a few cracks in the center top of the candy bar.

a. Draw a diagram in the box of what the top of the surface chocolate of your candy bar looks like.



b. Identify which layer of the Earth is most closely represented by the solid rigid chocolate outermost portion of the candy bar.

This layer of the Earth is composed of 3 different structural components (*two types of crust + the solid rigid part of the mantle that underlays the crust*):

- 1.
- 2.
- 3.

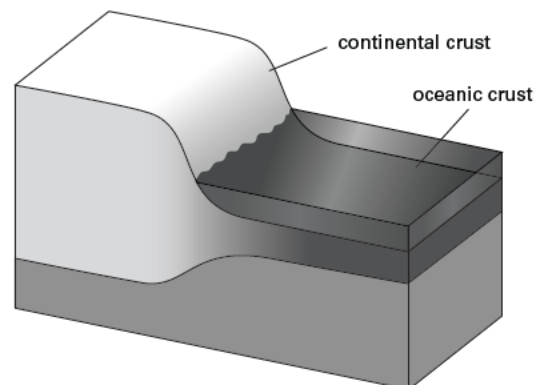
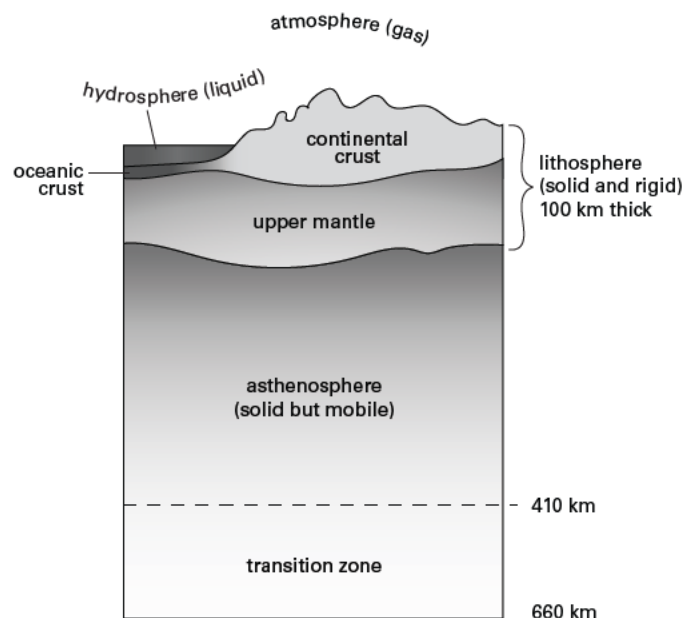
c. Identify which layer of the Earth is most closely represented by the solid but ductile layer of caramel.

2. Hold the candy bar over the wax paper or paper towel, and with one hand holding each end of the candy bar, gently pull in opposite directions. The candy bar should stretch slowly and pull apart at the center.

a. Draw a picture below depicting the motion of the fractured chocolate using arrows to represent the direction of motion and applied stress.

b. Identify the type of stress you applied to the chocolate bar.

c. Of the 3 different types of plate boundaries, identify what type of plate boundary your chocolate model most closely represents.

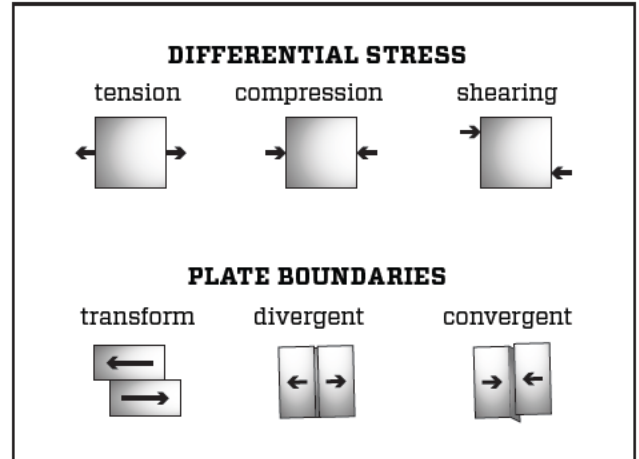


3. Gently push the two ends back together again. Now, push it a little bit more until some of the chocolate gets thrust up and some gets forced down into the caramel.

a. Draw a picture below depicting the motion of the fractured chocolate using arrows to represent the direction of motion and applied stress.

b. Identify the type of stress you applied to the chocolate bar.

c. Of the three different types of plate boundaries identify what type of plate boundary your chocolate model most closely represents.



4. Now take the candy bar, tear it in half the best you can, and take these two pieces and set them side by side and rub slowly with force in opposite directions one time.

a. Draw a picture below depicting the motion of the fractured chocolate using arrows to represent the direction of motion and applied stress.

b. Identify the type of stress you applied to the chocolate bar.

c. Of the 3 different types of plate boundaries, identify which type of plate boundary your chocolate model most closely represents.

5. Cut candy bar lengthwise for cross-section view. Draw an image and label the corresponding Earth layers in the box below.



6. Clean up by eating (or throwing away) the candy bar and discarding the wax paper.