Name/Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Lab: Plate Boundaries and Movement**

**Purpose:** “What effect does plate movement have on geologic events and structures at Earth’s surface?”

**Instructions:**

Part 1: Begin with the virtual lab in Edgenuity. Collect data in the tables below.

Table A: Cold Water

|  |  |  |
| --- | --- | --- |
| Time (minutes: seconds) | Paper Movement  (moving fast/moving slow/no movement) | Food Coloring Movement  (moving fast/moving slow/no movement) |
| 0:30 |  |  |
| 1:00 |  |  |
| 1:30 |  |  |
| 2:00 |  |  |
| 2:30 |  |  |
| 3:00 |  |  |

Table B: Hot Water

|  |  |  |
| --- | --- | --- |
| Time (minutes: seconds) | Paper Movement  (moving fast/moving slow/no movement  moving towards center/moving towards edges) | Food Coloring Movement  (moving fast/moving slow/no movement  moving away from center/sinking) |
| 0:30 |  |  |
| 1:00 |  |  |
| 1:30 |  |  |
| 2:00 |  |  |
| 2:30 |  |  |
| 3:00 |  |  |
| 3:30 |  |  |
| 4:00 |  |  |
| 4:30 |  |  |
| 5:00 |  |  |

Part 2:  **HAND DRAW** the plate boundaries demonstrated in the lab. (Take a picture of each drawing and insert the picture in the space provided below. Your name should be handwritten on each drawing.)

|  |
| --- |
| Drawing of Divergent Boundary Model |
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| --- |
| Drawing of Convergent Boundary Model—Oceanic Crust vs. Continental Crust |
|  |

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| --- |
| Drawing of Convergent Boundary Model—Continental Crust vs. Continental Crust |
|  |

|  |
| --- |
| Drawing of Transform Boundary Model |
|  |

Part 3: Analysis   
Answer each of the following questions in complete sentences. DO NOT copy/paste answers from the Internet.

1. How did the behavior of the food coloring and the floating pieces of paper change after adding heat to the system? What accounts for any changes you observed?
2. (a) What part of the process of plate tectonics do the water currents in the simulation represent?   
   (b) What part of the process of plate tectonics do the pieces of paper represent?  
   (c) What was the driving force that caused the pieces of paper to move along the water’s surface?
3. New crust is created at a divergent boundary.   
   (a) Where does this new crust come from?   
   (b) What happens to the old crust?
4. What type of plate boundary is responsible for the San Andreas Fault? Explain.
5. What type of plate boundary is responsible for the Cascade mountain range along the Washington-Oregon coastline? Explain.
6. What type of plate boundary is responsible for the Himalayan mountain range? Explain.
7. What type of plate boundary is responsible for the Mid-Ocean Ridge? Explain.
8. (a) What type of boundary creates earthquakes?   
   (b) What type of boundaries create volcanoes?   
   (c) Compare and contrast these two types of plate movements and explain how these geologic events occur.