

Seafloor Spreading and Subduction Zones

Directions: The diagram on the reverse side depicts an area of the ocean floor where different plates are shifting due to plate tectonics. Begin by labeling the parts (draw an arrow to indicate which feature you mean). Then answer the questions below. You may use your book and whatever notes you have.

I. Label the following parts:

use brackets

- | | | |
|---|-----------------------------|--|
| } | 2 oceanic plates | 2 trenches |
| | 1 continental plate | mid-ocean ridge |
| | 1 oceanic/continental plate | transform fault (intersecting the ridge) |
| | mountains (on land) | rising magma (in 2 places) |
| | island arc | |

II. Further Analysis:

- 1) Identify the plate boundaries by placing a big letter “D” above the divergent boundary and placing a “C” above each convergent boundary. (Each letter should go in the dotted box.)
- 2) What process is taking place along the ridge? _____
What process is taking place at the trenches? _____
- 3) During subduction, a(n) _____ plate will sink beneath the continental plate.
- 4) What causes one plate to sink while another floats?
- 5) Using a green colored pencil, shade in the area where the youngest ocean rocks would be found with regard to seafloor spreading. Then, in blue, shade in the area of oldest ocean rock. Which of these areas (green or blue) would have the thickest *sediment* sitting on top of it, AND why?
- 6) Using a red colored pencil, color in 2 areas of lithosphere where you would find melting rock. What happens to the melted rock, and what landforms does it produce?
- 7) On your diagram, draw circular arrows to show the circulation of the magma beneath the mid-ocean ridge. What is the name of this process? _____
- 8) Plate tectonic motion is causing the _____ Ocean to expand, while the _____ Ocean is getting smaller.

Seafloor Diagram

