Convection Currents

Name:

Period:

The plates of Earth's crust shift around because the magma beneath them is moving. This movement is caused by hot magma rising up to the crust, then cooling and sinking down again. While you look at the images your teacher shows you, answer the questions below.

Think about the heat that comes from a campfire. Where will the campfire be hottest? At the sides or at the top?

Based upon your answer above, does heat rise or does heat sink?

Hot air balloons come with a burner in the basket that creates flames to make the air inside the balloon hotter. Would flame be added if the balloonist wants to go higher or drop lower?

To make a lava lamp work, the heat source inside the base needs to be turned on. What does adding heat do to the blobs of wax?

Why do the blobs of wax start to sink once they reach the top of the lamp?

The wax inside a lava lamp is affected by heat in the same way as magma underneath the crust of Earth.

Would you expect rising magma to be hot or cool?

Would you expect sinking magma to be hot or cool?

Work: 6 points, Assessment: 4 points

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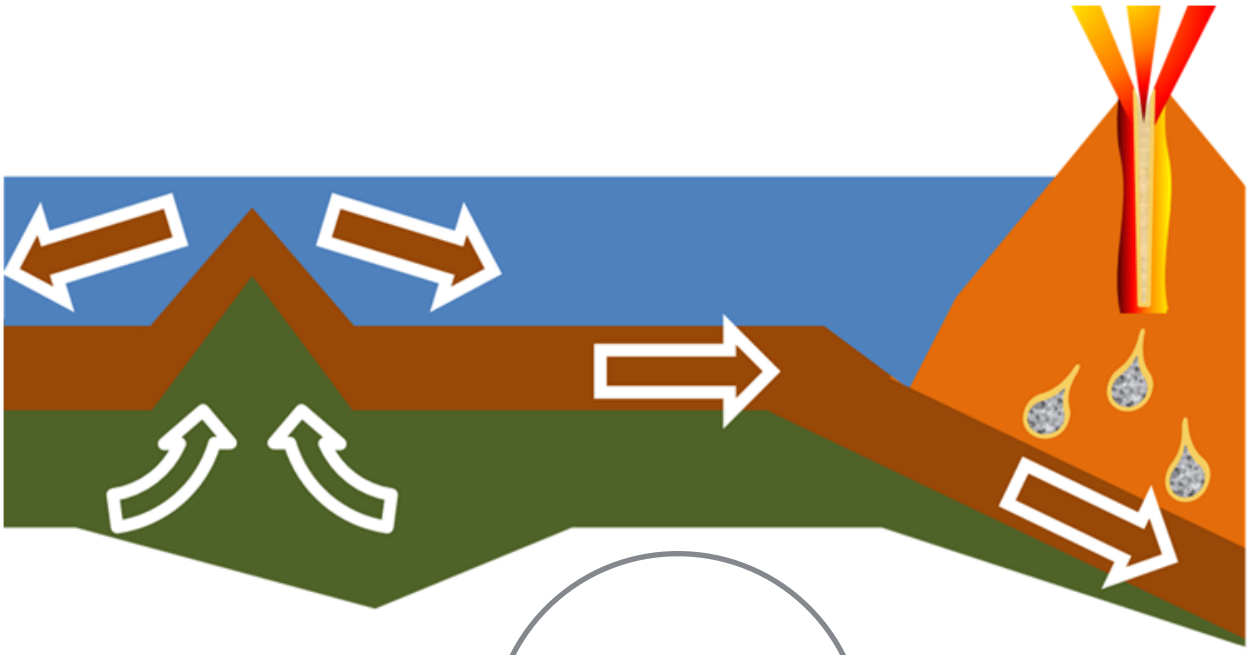

Plates will move in the same direction as the convection currents in the magma beneath are moving. Add arrow tips to the curved lines at the right to show the direction of movement of the convection currents in this area.

A mid-ocean ridge is seen on the left side of the diagram, and a volcano is on the right side. Ignoring the volcano, where would you expect to find the newest lava? Put an X there on the diagram and label it "newest".

Still ignoring the volcano, where would you expect to find the oldest lava? Put another X there on the diagram and label it "oldest".

image from https://commons.wikimedia.org/wiki/File:Accretion-Subduction.PNG

Work: 6 points, Assessment: 4 points