**Video Study Guide: Earth Revealed
Episode 6: Plate Dynamics**

Read the questions first. Then answer them while watching this episode of "Earth Revealed". If you miss it in class you are still responsible for the viewing this segment and answering the questions. The video is available online at <http://www.learner.org/vod/video.html?sid=78&po=6> . The index for these programs is online at [**http://www.learner.org/resources/series78.html#**](http://www.learner.org/resources/series78.html). If you do not have an internet connection at home, view it after school or during study hall in the media center. Each segment is 30 minutes long.

1. What are tectonic plates? Describe their general motions.
2. Describe a divergent plate boundary, as exposed in Iceland.
3. How do divergent and convergent boundaries work to keep earth the same size?
4. Describe the 3 types of convergent plate boundaries. Give "real world" examples of each.
5. Why does oceanic crust sink below continental crust?
6. What 2 things happen as a subducting plate sinks back into the earth?
7. Why are convergent volcanoes more explosive than divergent (basaltic) volcanoes?
8. Describe the lithosphere and asthenosphere, and how they interact.
9. How do strain rate and temperature affect plastic deformation in the mantle?
10. Discuss possible mechanisms for plate motions (push, slide, and/or pull).
11. What are mantle plumes?
12. What will happen when Hawaii drifts off the hot spot?
13. What questions remain about the theory of plate tectonics?