

Assignment 1: Setting the plates up

Due Monday, January 9, 10 a.m.

1. We've spoken of plate tectonics in class, and the different parts of that theory (i.e., plates exist, move due to convection motions, interact along their edges). Fill in the following table on **specific** plate interactions:

Type of plate interaction	Name of specific type of interaction	Example of a place on Earth where this is occurring
Convergent		
Continental plate – continental plate		
Continental plate – oceanic plate	Subduction	
Oceanic plate – oceanic plate		
Divergent		
Continental plate – continental plate		
Oceanic plate – oceanic plate		
Transform	Strike-slip faulting	San Andreas Fault, California

2. In addition to plate tectonics, the Earth's core gets rid of heat by forming **hotspots**. Hawaii, the Galapagos Islands and Yellowstone are good examples of features generated by hotspots, but what are hotspots, actually?

3. Has plate tectonics been around for the **history of the Earth**? At what point (what conditions) will plate tectonics end?

4. **How old is the Earth**, anyway? Are there any rocks that are that old found on Earth? Then how do we know the Earth is that old?

5. Find a **geological timescale** (with a publication date more recent than 1970). Fill in the table below (the most recent time units are near the top):

Eon	Era	Period	Epoch
	Cenozoic		
		Tertiary	Pliocene
			Miocene
			Oligocene
		Eocene	
		Paleocene	
	Proterozoic		
Archean			

6. What type of **event** defines all of the **dividing lines** in the era, period and epoch columns? What might cause such an event?

7. On the geological timescale you looked at, I hope you saw **numerical ages**; name three techniques that are used by geologists to determine the age of various geological materials. List also over what range of ages and what materials the technique is useful for.