**Tectonics**

**What is plate tectonics?**

* The theory that the plates continuously move at a slow pace.
	+ “Tectonic” – deformation of the crust by plate movement
	+ Continental Drift: theory that the continents are slowly shifting.

**What are the plates?**

* Plates are made of rigid **lithosphere.**
	+ The crust and upper mantle
* Plates are moved by the liquid **asthenosphere.**
	+ Middle mantle
	+ Has plastic qualities that allow plates to move

**How fast?**

* Plates move at 1-10 cm/year
	+ The same rate as your fingernails grow!

**Pangea and Panthalassa**

* Pangea – the most recent super continent
	+ Based of the Latin words *pan*- for “all” and *gaia* for “Earth.”
	+ Separated to form today’s continents
	+ Evidence of drift is found by:
		- Comparing fossils
		- Rock formations
		- Evolutionary similarities
* Panthalassa - the most recent super ocean
	+ Based off the Latin words *pan-* for “all” and *Thalassa* for “Mediterranean” (a sea)
	+ Took up the rest of the space that Pangea wasn’t in

**Plate Boundaries**

* Plates move in different ways at their boundaries
* 3 types of boundaries:
	+ **Divergent – spreading apart**
		- Make: mid-ocean ridges 🡪 volcanoes
			* Ex: Mid-Atlantic Ridge
			* Iceland is being ripped in half by a violent divergent boundary
	+ **Convergent – plates collide**
		- 3 types 🡪 make 3 different things
			* Land-Land 🡪 mountains
				+ Ex: Himalayas
			* Land-Ocean 🡪 subduction zones
				+ Heavy ocean plate sinks down
				+ Melts rocks to fuel volcanoes
				+ Ex: the Andes
			* Ocean-Ocean 🡪 trenches
				+ Both plates are heavy and push down
				+ Ex: Mariana Trench – 11km deep!
	+ **Transform – plates slide past**
		- Least common boundary
		- Cause earthquakes
			* Ex: San Andreas Fault: most volatile fault on the planet!