**Thermal Energy Circulation**

* The Sun’s radiation reaches Earth’s surface at different\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Water and land absorb energy at\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



* Water absorbs \_\_\_\_\_\_\_\_\_\_\_\_\_\_ thermal energy than air
* Thermal Energy is\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from areas that receive \_\_\_\_\_\_\_\_\_

of radiation to areas that receive\_\_\_\_\_\_\_\_\_\_\_ radiation.

**Which is more dense:**

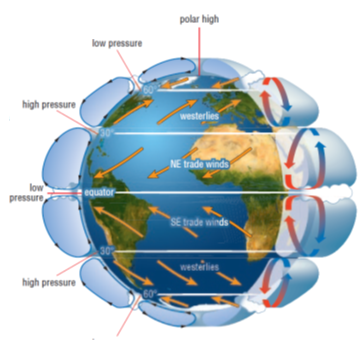
Hot air or cold air? Hot water or cold water?

What does the uneven heating of air or water create? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* **Convection Currents:** A circular current in air and other fluids (water) caused by the

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of warm fluid as cold fluid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Energy Transfer in the Atmosphere:**



* As warm air rises, it creates an area of

\_\_\_\_\_\_\_\_\_\_\_\_\_ pressure below it

* As cool air falls, it creates an area of

\_\_\_\_\_\_\_\_\_\_\_\_\_\_pressure

* Air flows from areas of high pressure

to areas of low pressure – this makes

air currents or \_\_\_\_\_\_\_\_\_\_\_

**Prevailing Winds** - High and Low pressure, along with the rotation of the Earth causes winds

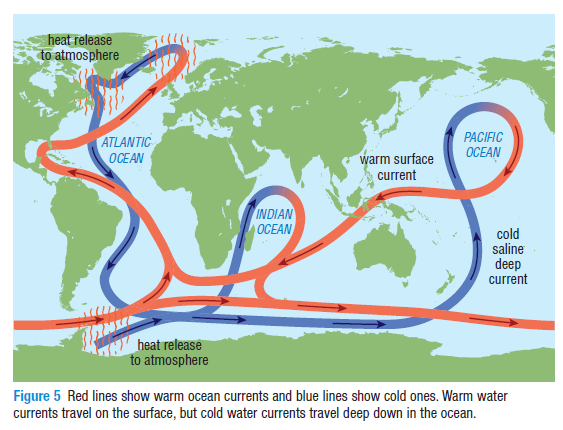
that curve around the globe in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ almost all the time

**Energy Transfer in the Ocean**

* As water travels to the poles, it gets colder and saltier and therefore \_\_\_\_\_\_\_\_\_\_ dense

**Thermohaline Circulation:**

* + Dense water at the poles will \_\_\_\_\_\_\_\_\_\_\_ to the ocean floor
  + Warmer surface water from the equator flows towards the poles to take its place
  + The continuous flow of water around the world’s oceans is driven by differences in water temperature and salinity



**Ocean Currents and Climate Zones**

* Warm ocean currents \_\_\_\_\_\_\_\_ the air above them which moves to the land and produces rain
* Cold ocean currents \_\_\_\_\_\_\_\_\_ the air above them causing cool, dry air to reach the land creating desert areas

**Homework:** Read Section 8.8 (pg. 344-347) answer questions #1, 4-7