Ocean Currents

Copy all of the writing into your journal as Journal 7- Ocean Notes (you do not need to draw the pictures)

1. Ocean Info

a. There are five oceans on Earth.

*Atlantic

*Pacific

*Indian

*Arctic

*Southern (composed of the waters surrounding Antarctica).

b. Most (about 97%) of the water on Earth is ocean water and only 3% is freshwater.

c. Oceans are high in salinity because of:

*Minerals on the ocean floor

*Gases released by volcanoes

*Rivers carrying dissolved minerals from land.

2. *Oceans are very important to Earth because:*

a. They help maintain Earth's heat balance and keep the temperatures from being extreme. They are able to stabilize temperatures because water has a high specific heat so the oceans heat up cool down slowly. As a result our climate does not become too hot or too cold.

b. Phytoplankton in the oceans provide most of the oxygen in the Earth's atmosphere.

c. They provide an important source of water for the water cycle.

3. Ocean Currents

a. An Ocean Current is a large volume of water flowing in a certain direction.

b. There are two major oceans currents.

*Surface Currents

*Deep Ocean Currents

c. Heat energy is spread throughout the Earth by ocean currents.

4. Surface Currents

a. Wind-driven currents are called surface currents.

b. Surface currents carry warm or cold water horizontally across the ocean's surface

c. Surface currents extend to about 400 m below the surface, and they move as fast as 100 km/day.

d. Wind and temperature variations cause surface currents.

e. The Gulf stream is an example of a surface current.

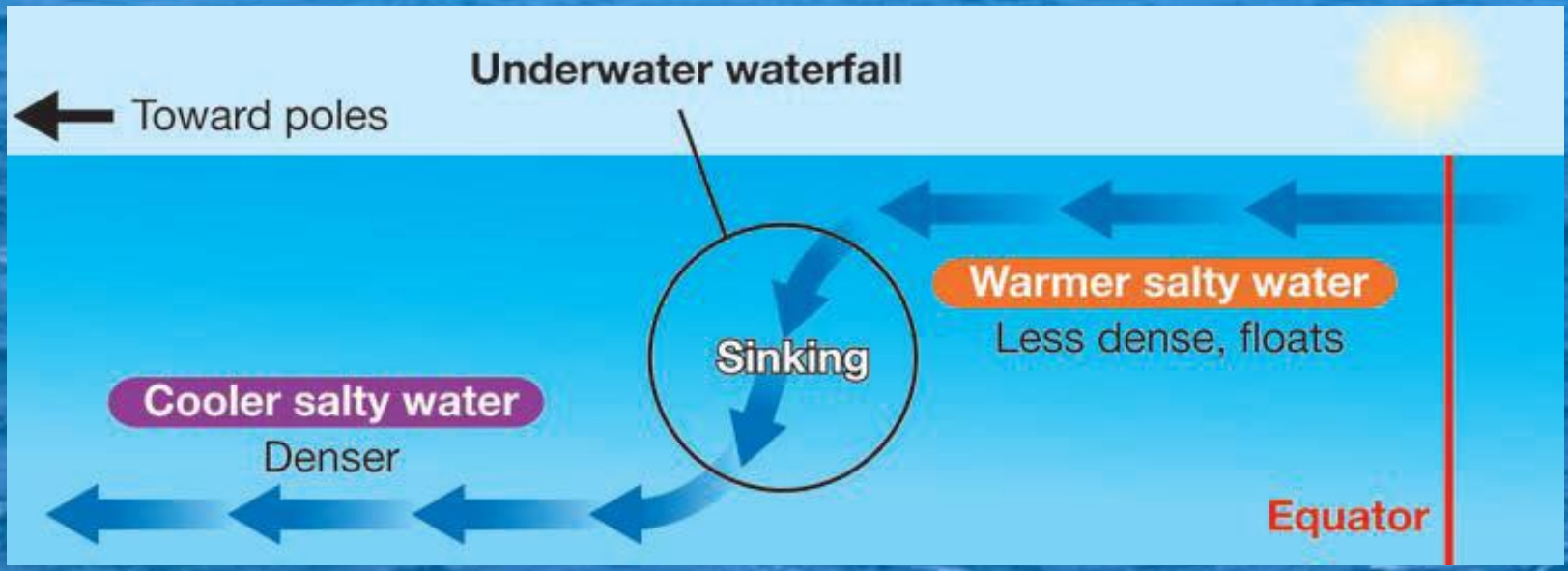
f. The Coriolis Effect and the shape of the coastlines cause surface ocean currents to form large rotating systems called gyres. Just like wind, gyres rotate clockwise in the northern hemisphere and counter clockwise in the southern hemisphere.

5.Deep Ocean Currents

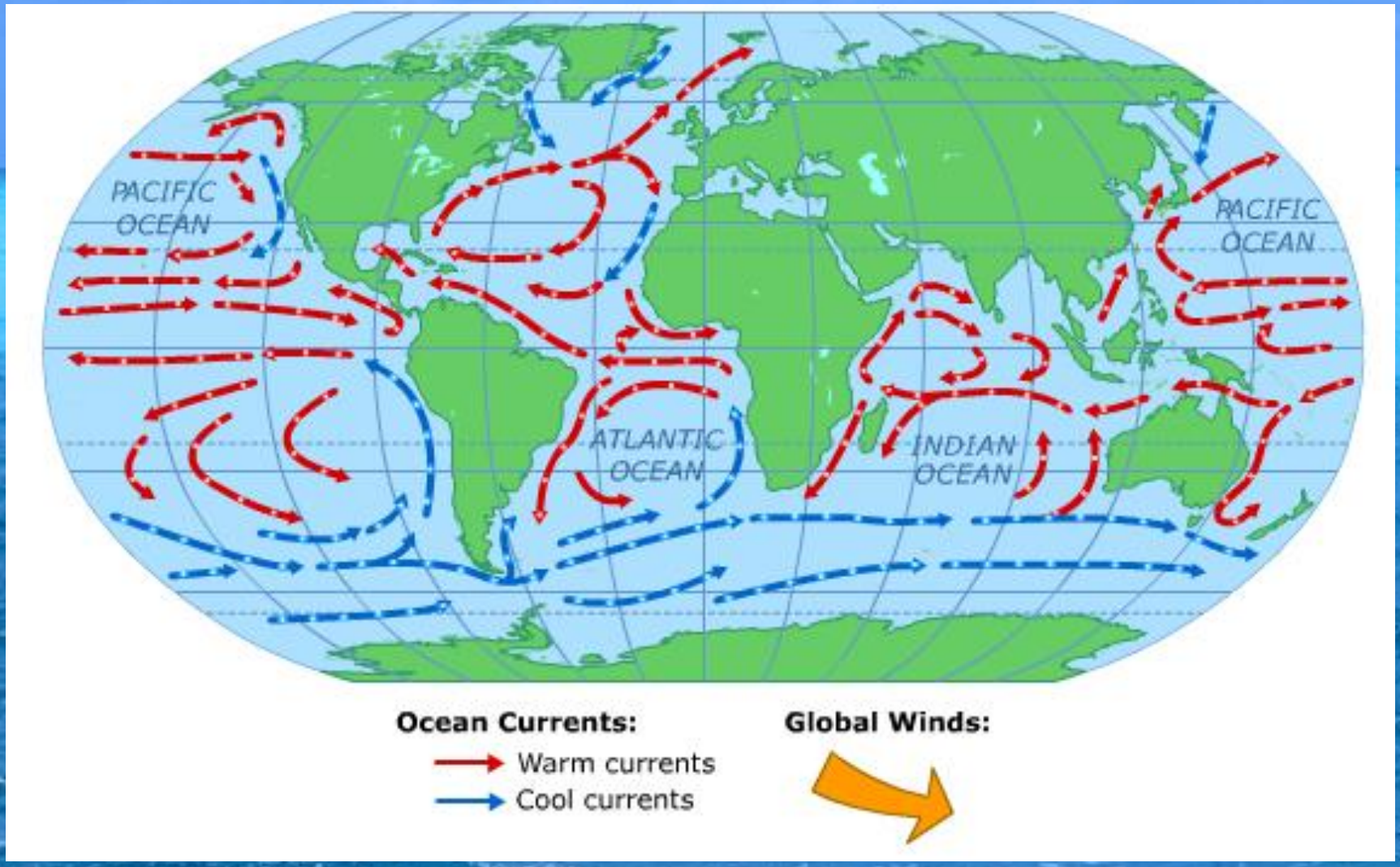
a. Thermohaline is another name for deep ocean currents. *Thermo* means temperature and *haline* means salt.

b. Deep ocean currents move below the surface of the ocean. They are slower than surface ocean currents. Deep ocean currents are driven by density differences therefore temperature and salinity differences. Denser water sinks and less-dense water floats.

c. Since temperature and salinity affect the density of water it is the differences in these two factors that causes deep ocean currents.



Surface Ocean Currents



Deep Ocean Currents