**I. Prior Knowledge:**

What is the Effect?

Creates:

Areas of uneven pressure

What is the Cause?

What is the Effect?

**Coriolis Effect**: Objects in the northern hemisphere curve right. Objects in the southern hemisphere curve left.

Cause:

Uneven heating on Earth

What are the 3 Global Wind belts on Earth?

|  |  |
| --- | --- |
| Latitudes | Name |
|       |       |
|       |       |
|       |       |

**II. Vocabulary:**

Current-

Gyre-

Surface Current-

Coriolis Effect-

Continental Deflections-

Climate-

Deep Current-

Global Conveyor Belt-

Upwelling-

Density-

Salinity-

Thermohaline Circulation-

**III. Major Surface Current Investigation:**

Using the surface current maps, cards to answer the following questions. You can also use these links to help you.

[Current and Winds Visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es2401/es2401page01.cfm?chapter_no=visualization)

[Current Map](http://www.windows2universe.org/earth/Water/images/surface_currents_lg_jpg_image.html)

1. In which direction do the ocean currents under the Trade Winds flow?

2. In which direction do ocean currents under the Prevailing Westerlies flow?

3. Wind driven ocean currents are deflected by continental boundaries to form gyres. What is one latitude where there is no continental barriers? (Hint: Where can the ocean water flow all around the world without running into a continent?)

4. At what latitude are the ocean gyres centered?

5. In which direction do the gyres flow in the Northern Hemisphere?       Southern Hemisphere?

6. Warm water is transported toward the poles on which side of the ocean basins?       Cold water is transported toward from the poles is on which side of the ocean basin?

7. In which side of the ocean basin are the fast moving currents found?       In which side are slow moving currents found?

8. Identify and Explain the characteristics of these Major Surface Currents:

California Current-

Gulf Stream-

Kuroshio-

Antarctic-

9. Explain what you have learned so far about the interaction of the Sun, Earth, atmosphere, and ocean in creating surface circulation in the ocean. (This should be several sentences.)

**IV. Causes of Deep Water Currents Investigation**

|  |  |  |
| --- | --- | --- |
| Variables | Change in Density | What happens to the water? |
| More salinity |       |       |
| Less salinity |       |       |
| Warmer water |       |       |
| Colder water |       |       |
| More gases in water |       |       |
| Less gases in water |       |       |

What are 3 ways the ocean changes the salinity of water?

1.

2.

3.

[Global Conveyor Belt](http://science.howstuffworks.com/environmental/earth/oceanography/ocean-current3.htm)