**Wind Circulation, Surface Currents & Climate**

(adapted from UCLA Marine Science Center)

**Objective:**

Students will be able to describe connections between wind patterns, surface currents, and ocean climate zones.

**Procedure:**

1. On your map of ocean climate zones, color the zones in 4 different shades of blue, with the tropics being the darkest.
2. On your transparency of ocean surface currents, color the warm surface currents red, and the cold currents blue with a vis-à-vis marker. You will have to research this information.
3. Overlay the surface current map on top of the climate zone map.

Answer analysis questions 1 – 3.

1. Now place the wind pattern overlay over the climate zone map.

Answer analysis questions 4 – 5.

1. Finally, overlay the surface current map on top of the wind pattern map.

Answer analysis questions 6 – 7.

**Analysis:**

1. Name the 4 currents that make up the North Pacific gyre. Indicate warm or cool for each.

What is the main climate zone for this gyre?

1. Research the names of the other gyres that are formed in the open ocean and list them here.
2. In which ocean is the tropical zone the greatest in latitude span?
3. Which climate zone contains the westerlies?
4. From what region do the easterlies bring cold air?
5. At what angle are the equatorial currents to the trade winds?

Why does this occur?

1. What would happen if the trade winds became weaker?

**Conclusion:**

Write a well thought out statement explaining the link between wind circulation, surface currents, and climate.