**Guided Notes: Currents and Climate**

Ocean currents play a crucial role in redistributing \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ throughout the world's oceans, significantly impacting global climate and weather patterns**.**

**Key Concepts:**

• Surface currents:

 - Flow in the top \_\_\_\_\_\_\_\_\_\_\_\_ meters of water

 - Caused by \_\_\_\_\_\_\_\_\_\_\_\_ blowing horizontally across the water

 - Form \_\_\_\_\_\_\_\_\_\_\_\_ in major ocean basins

 - Move in a \_\_\_\_\_\_\_\_\_\_\_\_ direction in the Northern Hemisphere

• Deep currents:

 - Caused by differences in \_\_\_\_\_\_\_\_\_\_\_\_ between water masses

 - Form the global ocean \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

• \_\_\_\_\_\_\_\_\_\_\_\_ occurs when wind pushes surface water away from the coast, pulling up deeper, colder water

• Ocean currents affect climate by:

 - Redistributing heat from \_\_\_\_\_\_\_\_\_\_\_\_ regions to \_\_\_\_\_\_\_\_\_\_\_\_ regions

 - Influencing \_\_\_\_\_\_\_\_\_\_\_\_ patterns in coastal areas

 - Affecting \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ levels in different regions

**Real World Examples:**

1. Temperature differences: Cape Hatteras, NC has higher average temperatures than Monterey, CA (at the same latitude) due to the \_\_\_\_\_\_\_\_\_\_\_\_ current along the California coast.

2. El Niño: During an El Niño year, reduced upwelling along South America's coast leads to \_\_\_\_\_\_\_\_\_\_\_\_ rainfall there and potential \_\_\_\_\_\_\_\_\_\_\_\_ in Indonesia and Australia.

**Word Bank:**

heat

water

few hundred

wind

gyres

clockwise

density

conveyor belt

upwelling

equatorial

polar

temperature

rainfall

drought

cold

increased

droughts