**Guided Notes: Carbon Cycle and the Ocean**

The carbon cycle is a complex system where carbon moves between Earth's \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_.

**Key Concepts:**

• Carbon is found in:

 - Living things

 - The atmosphere as \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

 - Oceans (dissolved)

 - Rocks (e.g. limestone, coal)

• The carbon cycle involves processes like:

 - \_\_\_\_\_\_\_\_\_\_\_\_: organisms obtaining energy by taking in oxygen and releasing CO2

 - \_\_\_\_\_\_\_\_\_\_\_\_: plants taking in CO2 to make their structure

 - Decomposition of dead organisms

 - Formation and burning of \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

• Oceans play a crucial role in regulating climate by:

 - Absorbing about \_\_\_\_\_\_% of excess heat from global warming

 - Absorbing about \_\_\_\_\_\_% of human-produced CO2 annually

 - Driving the global \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ of ocean currents

• Climate change impacts on oceans:

 - Rising sea levels due to thermal \_\_\_\_\_\_\_\_\_\_\_\_ and melting ice

 - \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_: increasing acidity of ocean water

 - Potential disruption of ocean currents like the \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

**Real World Examples:**

1. Ireland's climate: Warmer than expected due to the \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ current

2. Coral reefs: Threatened by ocean acidification, making it difficult for them to form \_\_\_\_\_\_\_\_\_\_\_\_

**Word Bank:**

atmosphere

biosphere

hydrospher

geosphere

carbon dioxide

respiration

photosynthesis

fossil fuels

90

25

conveyor belt

expansion

ocean acidification

Gulf Stream

Gulf Stream

shells