



## INVESTIGATING OCEANS

10. Use the map of surface currents from earlier in the investigation to answer the following questions:
  - a) Are surface currents near the South Pole generally warm or cold?
  - b) Are surface currents near the Equator generally warm or cold?
11. Discuss which continent would have cold water along its edge, and which continent would have warm water along its edge. Be prepared to defend your answer.
  - a) Record your thoughts in your journal.
  - b) If temperature was the only factor contributing to seawater density, how would water flow in the deep ocean? (Hint: How does cold water move? How does warm water move?)
12. Discuss where you think water would be the saltiest (most saline). Discuss where you think water would be less salty (least saline).
  - a) Record your thoughts in your journal. Give a reason for your prediction.
  - b) If salinity was the only factor contributing to seawater density, how would water flow in the deep ocean? (Hint: How does “salty” water move?)

### As You Read...

#### Think about:

1. *What are the sources of heat on Earth?*
2. *How is heat moved from one place to another on Earth?*
3. *Why is the ocean layered?*
4. *What is a gyre?*
5. *What drives deep ocean currents?*

## Digging Deeper

### OCEAN CURRENTS Movement of Heat on the Earth

What is the basic reason why there are winds in the atmosphere and currents in the ocean? The Sun warms the Earth's surface by the sunshine you can see. The Earth radiates heat to outer space, although you can't see that with your eyes. On average, over the entire surface of the Earth, the heat added and the heat lost just about balance. However, areas at high latitudes lose more heat