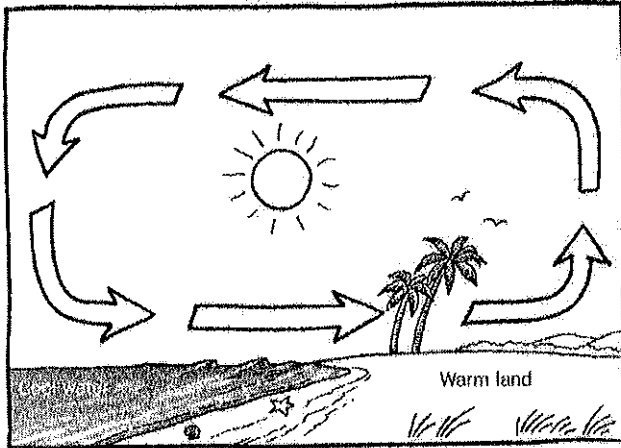


Local Winds vs. Global Winds

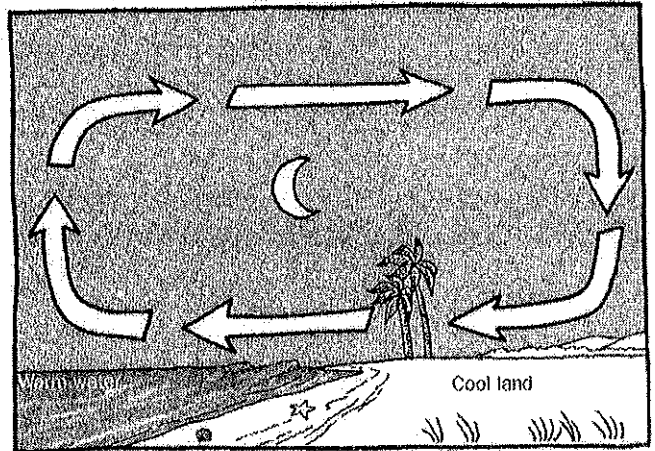
Name _____ Date _____ Hour _____

Refer to page 53 in your textbook for help.

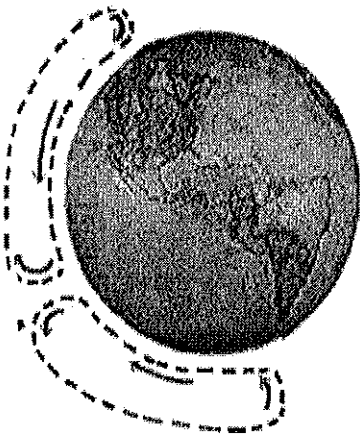
SEA BREEZE



LAND BREEZE



Global Winds



Directions:

For each diagram, add the following:

- Red to the arrows that represent warm air
- Blue to the arrows that represent cool air
- An "H" to the areas of high pressure
- An "L" to the areas of low pressure
- Label "less dense" air
- Label "denser" air

Questions:

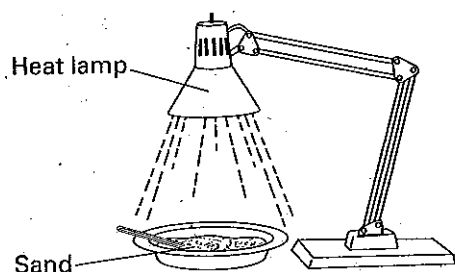
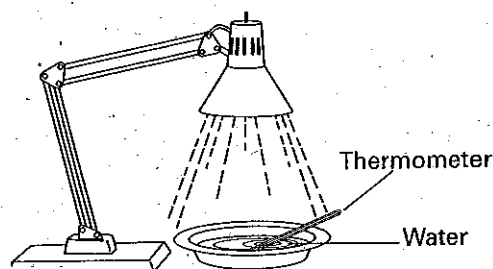
1. Why do winds change direction in areas where land is near water?
2. How are global winds and local winds similar? How are they different?

SECTION

THE ATMOSPHERE HAS WIND PATTERNS.

2.2 Challenge and Extension**BIG IDEA** Some features of weather have predictable patterns.**KEY CONCEPT** The atmosphere has wind patterns.

Heating and Cooling Rates of Land and Water The wind direction along a shoreline is often affected by the different rates at which water and land heat up and cool down. Some students did an experiment to compare the heating and cooling rates of land and water. Their setup is shown below, along with the data they collected.

**DATA SHEET**

Temperature with Light On (°C)			Temperature with Light Off (°C)		
Time (Min)	Sand	Water	Time (Min)	Sand	Water
0	20.5	20.5	0	23.2	21.6
1	20.9	20.7	1	23.0	21.6
2	21.5	20.9	2	22.5	21.4
3	22.0	21.2	3	22.1	21.3
4	22.6	21.4	4	21.7	21.2
5	23.2	21.6	5	21.0	21.1

- Which material heated up faster? Which material cooled down faster?

- How do the results of this experiment support what happens during a sea breeze and a land breeze?

- Suppose the lamp shining on the water was closer than the lamp shining on the sand. How would that affect the results? Would it be a fair experiment? Explain.

Option Try the experiment with the supervision of an adult. Begin by writing a question and a hypothesis. Record your results and write a conclusion.