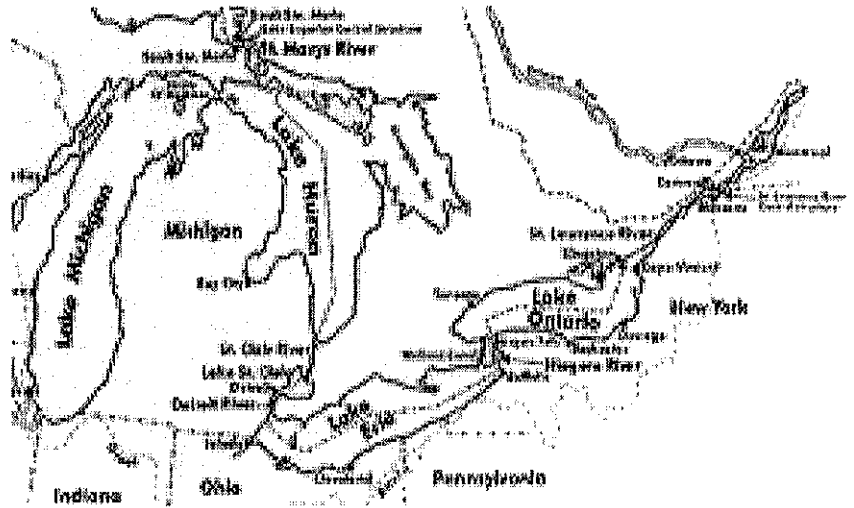


Around the World with Ocean Currents

Name _____
Date _____
Hour _____

Background:

Believe it or not our school is connected to the ocean. When water falls on the ground, it can travel downhill until it reaches a small stream. This stream flows into Stoney Creek which then flows into the Clinton River. Eventually that water drains into Lake St. Clair. Since Lake St. Clair is at a higher elevation than Lake Erie it flows through the Detroit River and into Lake Erie. Then the water flows into Lake Ontario, through the St. Lawrence River and into the Atlantic Ocean.



Being an adventurous person you decide to find out for yourself. So you go out and buy a rubber raft, a box of granola bars, a cooler, and a case of juice boxes and set afloat down the Clinton River trying to make it all the way to the Atlantic Ocean. What you failed to consider is what to do when you get there!

Once you hit the Atlantic Ocean and begin moving away from the good ole US of A. You begin to think about the ocean currents you learned about in science. This is what you recalled: (you had an AMAZING teacher!)

Ocean water is in constant motion. Driven by winds, surface currents generally travel in predictable directions. Out in the open sea, ocean waters are driven by two great wind systems. Close to the equator the Trade Winds blow the surface waters westward. In the temperate zone, the Westerlies blow the surface waters back toward the east. The result is that in each great ocean basin there is roughly circular movement of the surface waters. In the northern hemisphere these wind driven currents move clockwise and in the southern hemisphere they move counter clockwise. Both surface and deep-water currents affect the world's climate by moving cold water from the poles toward the tropics and vice versa.

You figure that since you are in the ocean and floating away from home, why not make a few stops along the way. In fact, why not stop at each of the seven continents and finish up in California? Then you could catch a flight home and tell everyone about your adventure!

Problem:

What path would you take to float around the world on a raft and what clothes should you pack for the various climates you will visit?

Procedure:

1. Using the map of the world, and the diagrams provided and your textbook, draw a path that could take you from Lake Erie to the west coast of California. Keep in mind that you have no motor. You must use the ocean currents to move you and your raft.
2. List the details of your adventures, including the ocean currents you use, indicate whether they are warm currents or cold currents, and the climates you encounter along the way.
3. Use the checklist to make sure you are completing all of the requirements.

Rubric:

1. Map

- a. Highlight the currents/arrows to show the direction of your path. _____
- b. Color code the ocean currents (red = warm; blue = cold). _____
- c. Label each ocean and continents _____
- d. Label each location you travel to on your map. (#1, #2...) _____

2. Journal entries

- a. Stop #1 - How did you get there? What is the climate? How does the ocean affect the climate of this location? _____
- b. Stop #2 - How did you get there? What is the climate? How does the ocean affect the climate of this location? _____
- c. Stop #3 - How did you get there? What is the climate? How does the ocean affect the climate of this location? _____
- d. Stop #4 - How did you get there? What is the climate? How does the ocean affect the climate of this location? _____
- e. Stop #5 - How did you get there? What is the climate? How does the ocean affect the climate of this location? _____
- f. Stop #6 - How did you get there? What is the climate? How does the ocean affect the climate of this location? _____
- g. Stop #7 - How did you get there? What is the climate? How does the ocean affect the climate of this location? _____

Around the World with Ocean Currents - Journal

Name _____ Date _____ Hour _____

Stop#1

Stop#2

Stop#3

Stop#4

Stop#5

Stop#6

Stop#7

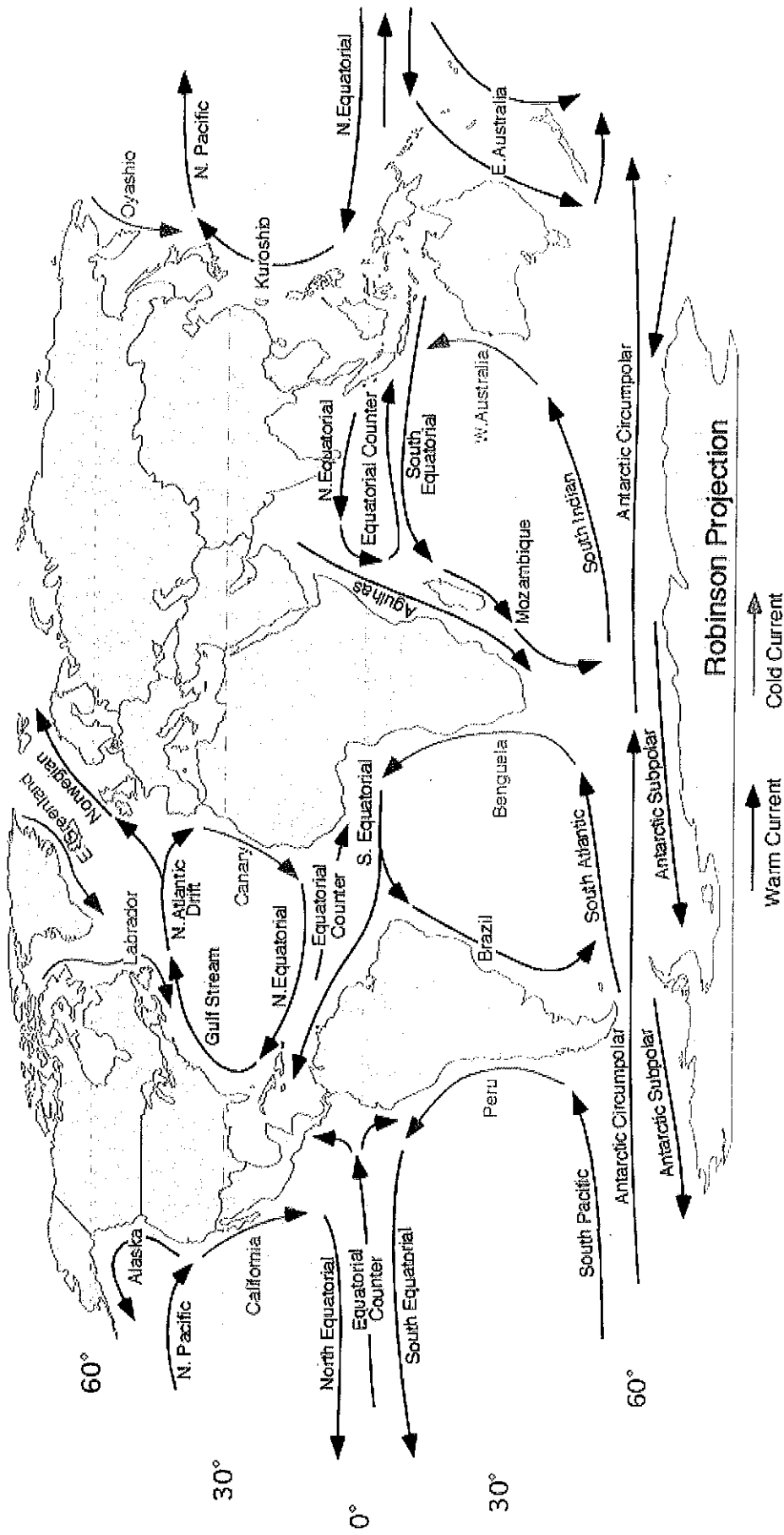


Figure 8q-1: Major ocean currents of the world. On this illustration red arrows indicate warm currents, while cold currents are displayed in blue.

Map source: http://www.physicalgeography.net/fundamentals/8q_1.html