

Activity #3 - Wind and Currents

Concepts # 5 & 6

#5 Ocean circulation affects climate and plant and animal populations on land and in the ocean.

#6 Surface currents are created by the prevailing wind system.

Objective:

Students will observe how wind generates currents and the effect of islands and banks on currents.

Materials:

- shallow pan or plastic container
- food coloring
- dropper
- water
- tall rock or glass bowl (cannot be covered by water in pan)
- short rock or small glass bowl (must be covered by water in pan)
- paper towels

Procedures:

1. Divide the students into groups. Have one student pick up materials.
2. Fill the shallow pan with water and let it settle.

Part I

3. Place a drop of food coloring at one end of the container and gently blow across the water.
4. Draw a picture on your worksheet of what happened at the surface and on the bottom of the container.

Part II

5. Place a tall rock in the center of the container to simulate an island.
6. Place a drop of food coloring at one end and blow across the water.
7. Draw a picture and describe what happened in front and in back of the island.

Part III

8. Remove the short rock and replace it with a petri dish on the bottom of the container to simulate a submerged island (also known as a “bank”).
9. Add food coloring and blow across the water.
10. Draw a picture and describe what happened to the food coloring.

Evaluation - Part I

- Write a description of what your drawing represents.
- Where did the water current move the fastest?
- What happened to the water current as it moved away from the wind source?

Evaluation - Part II

- What happened to the current with the island in the way?
- Where is the strongest current found? Explain.

Evaluation - Part III

- What is the difference between the island and the submerged bank in terms of the water current?
- Southern California has several submerged banks (Tanner Bank, Cortez Bank). What effect do these banks have on the California current?
- Most organisms in the sea have offspring that begin life as planktonic larvae. How might planktonic larvae be helped or hindered by these currents?
- How are bottom currents different from surface currents?
- What are the environmental causes of currents?
- How do currents affect living organisms?