

ES – Activity #6

Current Patterns



QUESTION: How do ocean currents move material around the Earth?

MATERIALS:

classroom map
incense

matches

PROCEDURE:

1. Sit at your desk and close your eyes.
2. Your teacher is going to light some incense. Raise your hand when you smell the incense so that your teacher can mark the order in which students first smell the incense.
3. When the session ends, look at the data that has been collected. Use a colored pencil to mark on your classroom map the order in which students first smelled the odor of the incense.
4. Next, try to determine the point of origin of the incense (where your teacher was standing when the incense was lit). Again, use a colored pencil to mark on your classroom map the point of origin of the incense (use the same one used to mark the order of the students smelling the incense).
5. Based on the data, use the colored pencil to draw arrows to show the air currents in the classroom

DATA: Classroom maps

QUESTIONS:

1. Was the first person to smell the incense the person closest to the source? Why or why not?
2. Did people near a door or window smell the odor?
3. What might be the sources of air movement in the classroom?
4. What factors might affect how well a student detects the odor of the incense?
5. Did the air flow patterns you drew on each map vary? Why or why not?

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Teacher Background:

Air and ocean currents move in similar ways and both distribute particles over great distances. These currents can be fast or slow, and can change daily and seasonally. Certain winds are always present and drive the world's weather patterns. Winds also drive surface currents in the ocean. The Trade Winds drive surface currents in subtropical regions to the east, while the Westerlies drive surface currents at higher latitudes to the west.

For this activity you will need to create a simple classroom map that shows the location of each student's desk or table, and the location of windows and doors. To begin the activity, instruct the students that you will be lighting some incense. Their job is to close their eyes and raise their hand when they first smell the incense. Your job is to record on the classroom map the order in which the students raise their hands. Once all students have raised their hands, share with the students the data you have collected and have them record this information on their classroom maps. Once this has been completed, have the students draw a map of the air currents in the classroom.

If possible, repeat the experiment, but change some of the parameters. Have the students raise their hand when they smell the incense smoke, but position yourself in a different part of the room, turn on a fan, open a window, have a couple of students pace back and forth, etc. Discuss how these changes affect the overall patterns of the air currents.