

Seafloor Spreading Activity

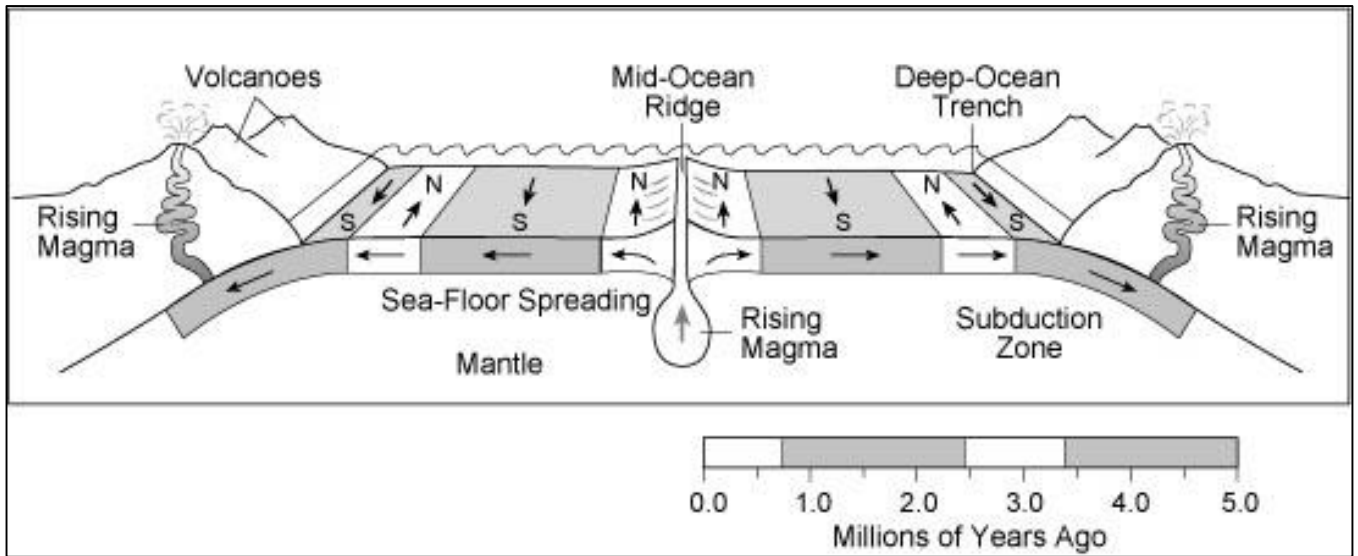
Preparation

1. Place the tables together to form a long chain of desks.
2. On a piece of paper, write "Mid-Ocean Ridge" and place this where the two middle desks meet.
3. On two different pieces of paper write "Deep-Ocean Trench" and place each paper where both end desks meet an inner desk.
4. Fold a long piece of bulletin board paper in half.
5. Place the paper between the two middle desks so that only the two ends can be seen above the tables.
6. On two different pieces of paper, write "North" and "South". These will represent the magnetic north and south poles.
7. Have two students hold the "North" and "South" papers up at different sides of the room.

Modeling Seafloor Spreading

1. Have students pull up an equal amount of the bulletin board paper from between the two desks at the "Mid-Ocean Ridge".
2. Write "5 million years ago" on each side of the paper.
3. Use a blue marker to draw arrows pointing towards the magnetic "North" pole, on each side of the paper.
4. Have the students, holding the "North" and "South" papers, switch positions.
5. Have students pull up more bulletin board paper from between the two desks at the "Mid-Ocean Ridge".
6. Use a meter stick and a marker to draw a line separating the older crust, already marked, from the newer crust, just pulled up.
7. Write "4 million years ago" on the newer section, on both sides of the paper.
8. Use red markers to draw arrows pointing to the new "North" magnetic pole.
9. Have the students, holding the "North" and "South" papers, switch positions again.
10. Pull up more bulletin board paper from between the two desks at the "Mid-Ocean Ridge".
11. Label the paper "3 million years ago" and draw blue arrows pointing towards the new magnetic "North".
12. As the paper reaches the "Deep-Ocean Trench" on each side, feed the paper into the opening between the desks, towards the floor.
13. Repeat this activity until all of the paper has been pulled up through the "Mid-Ocean Ridge" opening.
14. Label the last section, pulled up, as "Recent".
15. Title the paper as "Seafloor Spreading"
16. Label the "Mid-Ocean Ridge" on the paper, as well as both "Deep-Ocean Trenches".
17. Draw a legend for the arrows.
18. Write a summary, explaining that new crust is formed at the mid-ocean ridges and older crust is subducted at the deep-ocean trenches, as evidenced by the age of the rocks and the reversal of iron in the basalt rock according to periodic reversals of the Earth's magnetic poles.
19. Hang your posters in the designated places on the wall.

Seafloor Spreading Questions



1. Which of the following is occurring at the mid-ocean ridge?
 - a. Cooler, older, crust is being pulled down into the mantle.
 - b. Hot magma is rising and cooling to form new crust.
 - c. Fossils of marine plankton is being melted and the gases released are rising.
2. Which of the following is occurring at the Deep-Ocean trench?
 - a. Cooler, older, crust is being pulled down into the mantle.
 - b. Hot magma is rising and cooling to form new crust.
 - c. Fossils of marine plankton is being melted and the gases released are rising.
3. What do the N 's and S's represent on the above diagram?
 - a. They represent the change in direction of Earth's magnetic field over time.
 - b. They represent the type of crust found on the bottom of the ocean.
 - c. They represent the nearby countries.
4. Where would you expect the crust to be the oldest?
 - a. Near the Mid-Ocean Ridge
 - b. Near the Dee-Ocean Trench
 - c. Below the volcanoes
5. Seafloor spreading provides evidence for which of the following Earth activities?
 - a. The formation of new crust and destruction of old crust.
 - b. The movement of Earth's crust as it moves outward from mid-ocean ridges and is subducted at the deep-ocean trenches.
 - c. The movement of continents as they are pushed or pulled along with the ocean crust.
 - d. All of the above