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Activities

Earth's Flip-Flopping Magnetic Fields

Name: _____ Date: _____

A compass needle points north, but it wasn't always that way. Earth's magnetic fields have flip-flopped many times in the planet's history. You'll find out more in this Planet Diary activity.

Directions

- How did scientists first find out about Earth's flip-flopping magnetic fields? To find out, visit North Cascades Geology. Read *Sea-Floor Spreading*, then see this animation of magnetic stripes. Answer Workspace question 1.
- Return to North Cascades Geology. Read the text and look closely at the stripes of the Juan de Fuca Ridge. Answer questions 2 and 3.
- Watch magma rising along the mid-ocean ridge, then answer question 4.
- Travel deeper inside Earth to view its outer core. Answer question 5.
- How can changes deep inside Earth change the magnetic field surrounding the planet? Take a look at Earth's magnetic field. Then answer the last question.

Workspace

1. What did magnetometers reveal about rocks on the ocean floor?

2. How is the pattern of stripes linked to Earth's magnetic polarity?

3. How does the stripe pattern on either side of the ridge compare?

4. How does sea-floor spreading help explain your answer to question 3?

5. What is Earth's outer core made up of?

6. What are the three sources of Earth's magnetic field?

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