

# Forces Within Earth

## PROBLEM

What happens to faults when the forces acting on rock exceed the rock's strength?

## THINKING ABOUT THE PROBLEM

Using a text book complete the following in your science notebook.

1. Describe how the formation of a fault can result in an earthquake.
2. What are the three types of stresses? Briefly explain each.
3. Explain why a stress-strain curve usually has two segments.
4. Compare and contrast elastic deformation and plastic deformation.
5. What is a fault?
6. How are reverse and normal faults similar? How are they different?
7. Explain strike-slip faults.

## MATERIALS

- Scissors
- Colored pencils/markers
- Glue
- Fault block handouts

## PROCEDURE

1. Print out each of the three printable fault blocks.
2. Color the fault block. Each block has five layers per side. The printouts feature numbers to guide coloring.
3. Cut out the fault block along the outer solid black lines. 4. Fold on the dotted lines.
5. Once a block is folded, tape the flaps together to make a 3-D fault block. 6. Repeat until all three fault blocks are created.

## ANALYSIS

1. After you have created three fault blocks actively demonstrated a normal fault, reverse fault, and strike-slip fault to the instructor.
2. Explain how movement along a fault generates earthquakes.
3. Erosion occurs frequently on fault scarp surfaces. How could you identify a fault if the hanging wall and foot wall had been eroded to the same level.
4. Identify the relative ages of faulted rocks by writing the letters in order from oldest to youngest.

