Fault Features
3-5

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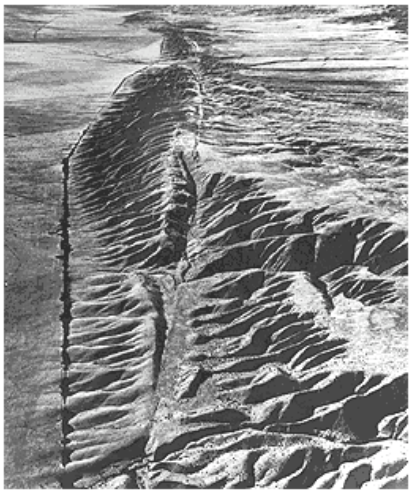

San Andreas fault in the Carrizo Plain, central California
(Photo by Robert E. Wallace)

Key Points:

- Earthquakes occur on faults
- When a fault moves it can produce features on the surface of the Earth. Some of these features include offset streams, pressure ridges, and sag ponds.

Materials:

- Two pieces of fabric or plastic.
- A Pan
- Wet dirt
- Wallace Creek Trail Guide or website
- Optional-Things to represent trees, houses or people. Example-blades of grass and toy soldiers.

Procedure:

1. Talk to the students about the different types of faults. (normal, reverse, and strike -slip)
2. Explain that the San Andreas Fault is the longest fault in California, and that it is a strike-slip fault.

3. Look at pictures of different fault features along the San Andreas Fault. Discuss their characteristics. Also, students could do at home research using the Wallace Creek Field Guide.
4. Divide the students up into groups of four. Give each group the materials. Have them lay the fabric down side by side in the pan with the ends hanging out and cover the fabric on the inside of the pan with wet, firm dirt. Make sure they pat the dirt down well so it is solid. Get them to draw a road in the dirt with their finger or a pencil, and then pull the pieces of fabric in opposite directions.
5. Repeat the experiment to see what kinds of fault features they can make. Ex. Pulling the two sides at an angle can make sag ponds or pressure ridges.

Questions:

1. Which way did the fault move?
2. How did one side of the fault move relative to the other side?
3. Is this what really happens on the San Andreas?
4. In what ways did you have to move the fault in order to form the different features? How does this relate to how the San Andreas is moving in different areas?
5. What is the difference between a right lateral and a left lateral fault?

Extension:

1. Show how compression (pushing together) makes pressure ridges and mountains, and extension (pulling apart) makes basins and sag ponds.
2. Look at a map and see if you can find any of these features. (Ex. Lake Elsinore is a sag pond.)
3. Consider taking the class on field trip to Wallace Creek to view the features. The Wallace Creek Interpretive Field Guide can be viewed at http://www.gps.caltech.edu/~meltzner/wallacecreek/