Geology: Basin & Range Faulting

ANSWER KEY

Exercise: 1

Instructions: Answer the questions and follow the directions below.

1. Study the cross-sections on page 5 of Rocks, Rails, and Trails. Is there an obvious difference between normal faults (Basin and Range type) as compared to the thrust faults?

-In a normal fault, the hanging wall is lower in relation to the footwall. A Thrust fault has a hanging wall that is higher than the footwall.

2. With a copy of cross-section map A and cross-section map B from page 5 of Rocks, Rails, and Trails. One at a time, cut them apart on the fault lines and see if you can move then back to the way they were before faulting took place. This is for fun, like a puzzle, and there isn't necessarily a right or wrong way to do it. Use the arrows to help you decide which way to move the pieces.

-Results will vary with students.

3. After doing the puzzle exercise, do you think that normal faults (Basin and Range type) extend or lengthen the crust or shorten it?

-Normal faults should lengthen the crust of the earth. Thrust faults result from extension and should shorten the length of the crust.