



## Relative Ages

### Lab Preview

**Directions:** Answer these questions before you begin the Lab.

1. To find out the relative ages of rocks, do you need to know their exact ages? Explain.

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2. State the principle of superposition.

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*Which of your two friends is older? To answer this question, you'd need to know their relative ages. You wouldn't need to know the exact age of either of your friends—just who was born first. The same is sometimes true for rock layers.*

### Real-World Question

Can you determine the relative ages of rock layers?

#### Materials

paper  
pencil

#### Goals

- **Interpret** illustrations of rock layers and other geological structures and determine the relative order of events.

### Procedure

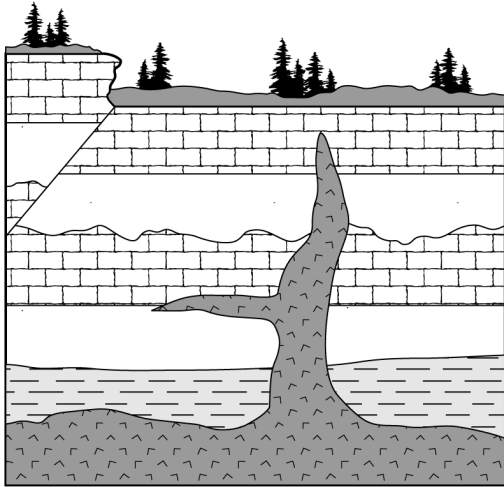
1. **Analyze Figures A and B** on the next page.
2. On **Figure A**, identify the relative age of each rock layer, igneous intrusion, fault, and unconformity. For example, the shale layer is the oldest, so mark it with a 1. Mark the next-oldest feature with a 2, and so on.
3. Repeat step 2 for **Figure B**.

FIGURE A: Label the geologic events in order from 1-8.

FIGURE B: Label the geologic events in order from 1-13.



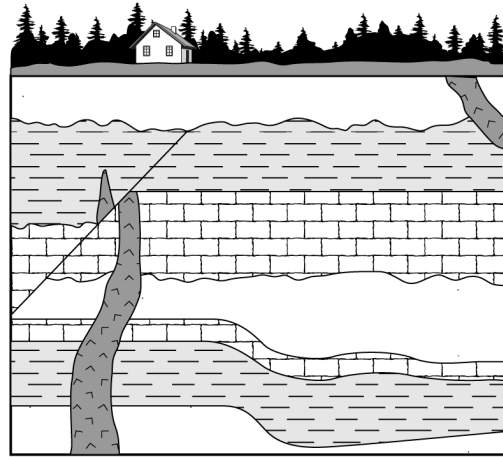
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**Figure A**

Granite



Limestone

**Figure B**

Sandstone



Shale

**Conclude and Apply****Figure A**

1. **Identify** the type of unconformity shown. Is it possible that there were originally more layers of rock than are shown?

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2. **Describe** how the rocks above the fault moved in relation to rocks below the fault.

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3. **Hypothesize** how the hill on the left side of the figure formed.

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4. Is it possible to determine whether the igneous dike formed before or after the fault occurred? Explain.

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**Figure B**

5. Is it possible to conclude if the igneous intrusion on the left is older or younger than the unconformity nearest the surface?

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6. **Describe** the relative ages of the two igneous intrusions. How did you know?

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7. **Hypothesize** which two layers of rock might have been much thicker in the past.

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8. What type of fault is shown in figure B?

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