

**EXPANSION AND CONTRACTION QUESTIONS**

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1. What are expansion joints, and why are they used?

Part of a bridge or road where expansion can occur without causing damage  
to the structure. One kind looks like the teeth on two combs that have  
been pushed together.

2. What causes the cap to pop off a bottle of orange juice?

When a bottle of juice is taken from the cold refrigerator, the air above  
the juice is contracted. As the air warms, it expands, pushing on the lid  
with more force. When the force is strong enough, the cap will pop.

3. How does a thermometer work?

When a thermometer is placed in a hot liquid, the alcohol inside heats up.  
The alcohol particles gain kinetic energy and hit each other harder. The  
hard hitting pushes the alcohol particles farther apart, and the alcohol  
expands. Expansion pushes the alcohol farther up the tube. In cold liquid,  
the alcohol cools, particles lose kinetic energy and move closer together,  
and the alcohol contracts. Alcohol moves down the stem.