Thermal Contact 1

When two objects are able to exchange heat, they are said to be in **thermal contact.** Typically, objects in thermal contact are touching.

Thermal Equilibrium

When two objects have the same temperature, they are in **thermal equilibrium**

If a warmer object and a cooler object are in thermal contact, then heat moves from the warmer object to the cooler object until they are the same temperature. This is called **thermal equilibrium.**

True or False:
1. It is called thermal equilibrium when two things have the same temperature.
2. Heat always moves from the warmer object to the cooler object.
3. Heat always moves from the cooler object to the warmer object.
4. Heat moves until things have the same temperature
5. Heat can stop moving while two items still have different temperatures.

6. When two things are able to exchange heat with each other, this is called _____.

7. Whenever two things have the same temperature, this is called _____.

Fill in the blank

Word Bank:
- Same
- Iron
- Decreases
- Water
- Thermal equilibrium
- Increases

Billy the blacksmith has been working really hard. He heats up a piece of iron, pounds it into the shape he wants. Then, to cool down the iron, he throws it into a cold bucket of water. When this happens, heat is going to move from the 8_____ to the 9_____. The temperature of the water is going to 10_____. The temperature of the iron is going to 11_____. This process keeps going until they have the 12_____ temperature, which is called 13_____.

What about states of matter?

Heat *always* moves from an object with higher temperature to an object with lower temperature, regardless of whether the object are solid, liquid, or gas.

14. The air outside is 10 degrees Celsius. You buy a hot dog that is 25 degrees Celsius. Heat moves:

a) Form the air to the hot dog, because the air is a gas and the hot dog is a solid.
b) From the hot dog tot he air, because the hot dog has a higher temperature.
c) Heat does not move in this situation.

15. A lobster is heated up to 40 degrees Celsius in a pot, but escapes and gets back into the ocean, which is only 15 degrees Celsius. How will heat move, and why?

A) From the lobster's shell to the water, because heat moves from a solid to a liquid.
B) From the water to the lobster's shell, because heat moves from liquid to solid.
C) From the lobster's shell to the water, because heat moves from a higher temperature to a lower temperature.
D) From the water to the lobster's shell, because heat moves from a lower temperature to a higher temperature.

What does the word *equilibrium* mean?

The word equilibrium is a very important word, used frequently in science, and in many other academic fields as well:

"Thermal equilibrium" is called an equilibrium because heat does not move.