

## Heat, Temperature, and Conduction

Objective: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Key Concepts

- \_\_\_\_\_ to atoms and molecules \_\_\_\_\_ their motion, resulting in an \_\_\_\_\_.
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- Energy can be \_\_\_\_\_ from a substance through a process called \_\_\_\_\_.
- In \_\_\_\_\_, faster-moving molecules contact slower-moving molecules and \_\_\_\_\_ to them.
- During conduction the slower-moving molecules \_\_\_\_\_ and the faster-moving molecules \_\_\_\_\_.
- Temperature is a measure of the \_\_\_\_\_ of the atoms or molecules of a substance.
- \_\_\_\_\_ is the transfer of energy from a substance at a \_\_\_\_\_ temperature to a substance at a \_\_\_\_\_ temperature.
- Some materials are better conductors of \_\_\_\_\_ than others.

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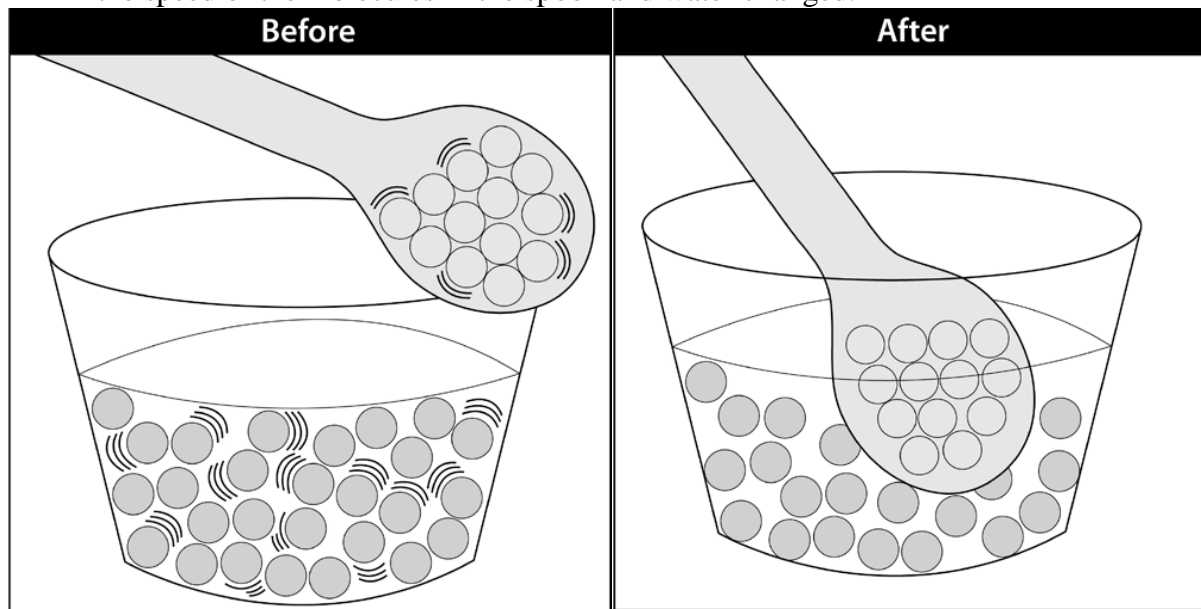
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## Heat, Temperature and Conduction.... Processing

In the first part of the animation, you saw what happens when a spoon is placed in hot water.

1. Explain, on the molecular level, how energy was transferred from the hot water to the room – temperature spoon. \_\_\_\_\_  
\_\_\_\_\_
2. Draw motion lines near the atoms and molecules in the “After” illustration to show how the speed of the molecules in the spoon and water changed.



3. Now that you know what happens when a spoon is placed in hot water, explain how the process of conduction caused the temperature of the washers and water to change in this activity.

**Room-temperature washers in hot water:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Hot washers in room-temperature water:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. You saw an animation that showed that temperature is a measure of the average kinetic energy of the atoms of molecules of a substance. Does this mean that all of the molecules in a cup of water are moving at the same speed or at a variety of speeds? Explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_