

# Daily Routine

- ❑ Walk into the classroom with positive thoughts
- ❑ Walk to your seat quietly, and sit down at your assigned seat
- ❑ Take out your agenda and write down your homework
- ❑ Sharpen any pencils before class begins
- ❑ All electronic devices should be silenced and put away
- ❑ Put away any food that you have out

# HEAT, TEMPERATURE, AND CONDUCTION

Changes in the Phase of Matter

# Question to investigate:

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- Why does the temperature of an object change when it is place in hot water?

# Activity:

- What happens when a spoon is placed in a hot liquid like soup or hot chocolate?
- Did you ever put a metal spoon in hot soup or hot chocolate and then touch the spoon to your mouth? What do you think might be happening, between the molecules in the soup and the atoms in the spoon, to make the spoon get hot?

# Do the Activity on your Lab Activity Sheet: (15 minutes)

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- \* Record all data in tables.
- \* Answer all questions.

# Watch the molecular model animations of Heated spoon and cooled spoon

It is not easy to notice, but **when the fast moving water molecules** hit the spoon and speed up the atoms in the spoon, **the water molecules slow down a little.**

[Heated Spoon](#)

[Cooled Spoon](#)

# Key Concepts

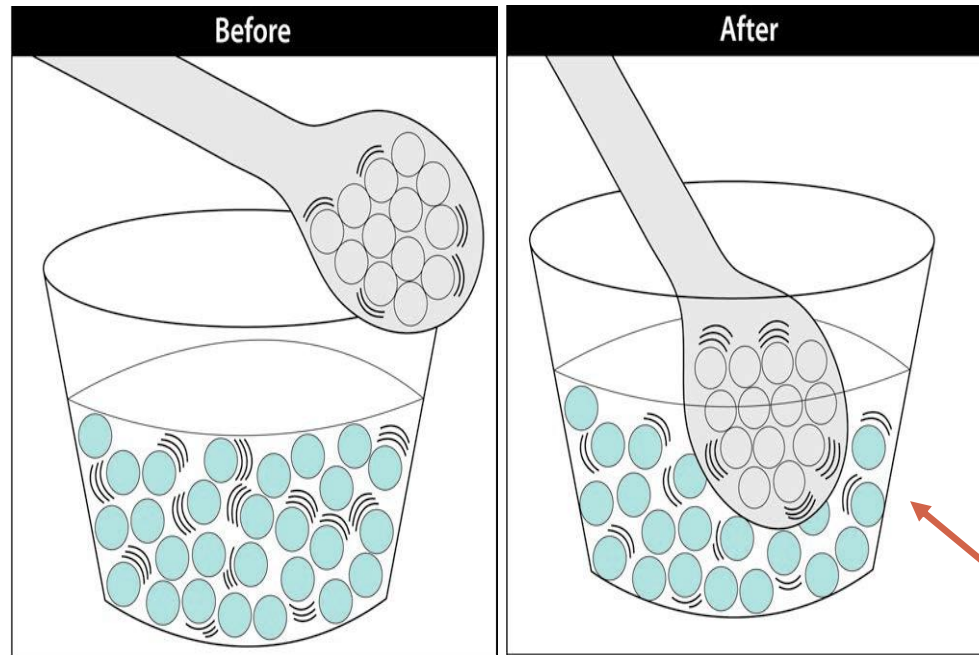
- Adding energy (heating) atoms and molecules increases their motion, resulting in an increase in temperature.
- Removing energy (cooling) atoms and molecules decreases their motion, resulting in a decrease in temperature.
- Energy can be added or removed from a substance through a process called conduction.
- In conduction, faster-moving molecules contact slower-moving molecules and transfer energy to them.

# Key Concepts


- During conduction the slower-moving molecules speed up and the faster-moving molecules slow down.
- Temperature is a measure of the average kinetic energy of the atoms or molecules of a substance.
- Heat is the transfer of energy from a substance at a higher temperature to a substance at a lower temperature.
- Some materials are better conductors of heat than others.



# Drawing of room temperature spoon placed in **Hot** water.



Add motion lines near the atoms and molecules in the “After” illustration on your lab activity sheet.



ANIMATION SHOWING TEMPERATURE IS A  
MEASURE OF THE AVERAGE KINETIC ENERGY OF  
THE ATOMS OF MOLECULES OF A SUBSTANCE.

[ANIMATION OF TEMPERATURE](#)