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

Changing State - Freezing

Phase Changes in Matter

Objective

- Explain on the molecular level why a low enough temperature can cause the water vapor in air to condense to liquid water and then freeze to form ice.

Chemistry Comes Alive: Ice Bomb Video

- Why do you think freezing water in the metal container caused it to burst?
- Why are roads likely to develop potholes during cold winters?
- What do you think happens to water molecules when liquid water changes to solid ice?

Ice Bomb Video

Ice in the Can Explanation

- Look at and touch the outside of the can. What do you observe?
- Describe what happens to water molecules as they move from being water vapor near the can to ice on the can.
- Your can might have some water and some ice on the outside of it. Explain how this is possible.
- Why do you think different liquids have different freezing points?

Freezing: Processing

- What happens to liquid water, at a molecular level, when it freezes to become a solid in the form of ice?

- Describe how the molecules arrange themselves.

Molecules going through Freezing

Freezing: Processing

Molecule Movement

- When molecules form a solid, do they complete stop or still vibrate a little?

Water and Ice

- What are some of the differences between liquid water and solid ice?

Liquid Nitrogen

- Liquid Nitrogen Demonstration

Key Concepts

- Freezing is the process that causes a substance to change from a liquid to a solid.
- Freezing occurs when the molecules of a liquid slow down enough that their attractions cause them to arrange themselves into fixed positions as a solid.