**Project: Experiment with Frost!**

**Objective:**

Have you ever walked outside early morning and noticed the grass was crunchy under your shoes or your car was covered with an icy coating? This is frost! The air around us can hold a lot of water which is called water vapor. You can't see it but it is usually there. Frost is water vapor or gas that transforms or changes to become solid.

We can often see this water vapor when it forms on objects like cars, windows, and plants outside in air that is saturated, or filled with moisture. The water goes through a process called condensation. If a surface temperature is warmer than the vapor, the wet droplet result we see on an object is dew. If the surface temperature of the object is at or around freezing, the result we see is frost.

Frost can affect our crops. The possibility of frost can threaten sensitive vegetation. Plants cells are filled with water, so when the temperature stays around freezing the water turns to ice and bursts the cell walls. This is why plants will often look wilted on the morning after a frost.

Don't wait for it to freeze outside to learn about frost! We are going look closer at this scientific transformation by making our own frost with materials you can easily find in or around your home! Once our frost is formed, we will be able to observe it carefully to learn more about it.
Materials:

- Clean, empty tin can
- salt
- crushed ice

Create your own frost:

**Step 1.** Add crushed ice to the can

**Step 2.** Add salt to the can

**Step 3.** Gently stir the ice and salt around inside the can

**Step 4.** Observe both inside and outside the can for 5-10 minutes!

Observation and Inquiry:

As you add the materials to the can, observe what is happening. What do you think will happen? Look closely. Are there any changes? Can you see frost forming? Next time you see frost formed outside take a closer look and compare.
Old Westbury Gardens

Draw your Observations below:

<table>
<thead>
<tr>
<th>Draw the can</th>
<th>Draw the can with ice</th>
<th>Draw the can with ice and salt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>
Essential Questions: Experiment with frost!

After you have performed the experiment, answer the following questions:

1. What changes did you observe with the can when you added the ice? Record observations by sight and touch.

2. What changes did you observe with the can when you added the salt? Record observations by sight and touch.

3. How long did it take for a change to occur on the can?

4. What happens when you touch the frost? How does it feel?
5. Why do you think frost forms?

Vocabulary words:

- **Water Vapor**: Water that is in the form of a vapor, or gas.

- **Dew**: The result of water changing from water vapor to a liquid. Tiny drops of water form on surfaces, such as plants and grasses, at night, when temperatures cool down.

- **Frost**: The result of water changing from water vapor to a solid. A thin layer of ice that forms on the ground, on grass, etc., when the air becomes cold.

- **Condensation**: The process of water changing from gas to liquid. The water changes from a gas (water vapor) to a liquid.

- **Saturation**: Filled with moisture.

- **Crops**: Living plants grown by farmers. Most crops are foods such as grain, vegetables, or fruit.