

Frosty Glasses

Primary Audience:

Description: Winter weather brings frosty window. Ever wonder why? Try this activity to create your own frost.

Keywords: Frost, Freeze, Water

Concepts:

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Materials:

- Clear plastic cup or glass
- Ice
- Tap water
- Paper Towel
- 4 table spoons of salt (rock salt works best)

Instructions:

- 1. Fill the cup ¾ full of ice
- 2. Cover the ice with water.
- 3. Dry the outside of the cup with the paper towel.
- 4. Sprinkle the salt over the ice water.
- 5. Gently swirl the cup to mix the salt, water and ice.
- 6. Use your fingernail to scratch the outside of the cup every 15 seconds for two minutes. What happens?

Possible Interactive Questions:

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What's Going On?

- Water freezes at 32 °F (0 °C). Adding salt makes the temperature of the icy water cooler than the freezing point of pure water.
- The air around us contains water vapor. This water freezes on the surface of the cold cup. This is frost.
- Frost forms as water changes from gas to solid without going through the liquid state.

Further Exploration:

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Relevant Ohio Science Content Standards:

Earth and Space Sciences 3-5 D: Analyze weather and changes that occur over a period of time

• 4.3: Identify how water changes from one state to another (e.g. freezing, melting, condensation and evaporation).

Physical Science 3-5 B: Identify and describe the physical properties of matter in its various states.

• 4.4: Explain that matter has different states (e.g. solid, liquid and gas) and that each state has distinct physical properties.