

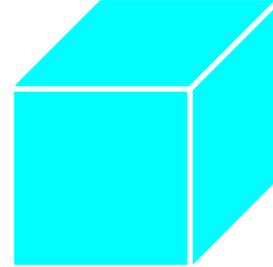
# Ice Fishing

Can you lift an ice cube out of a cup with a piece of string?



## Materials:

- Small ice cube
- Portion cup
- String, cut to approx. 6" in length
- Salt



## Try This:

1. Put 1 ice cube into a portion cup with water.
2. Carefully lay one end of the string across the top of the ice cube.
3. Sprinkle some salt over the string where it touches the ice.
4. Slowly count to 10, then gently lift the string. What do you observe?
5. If the ice cube falls, try again by placing the string again and adding more salt.

## Want to Know More?

When salt is sprinkled onto the ice cube, the ice cube melts a little bit. A small pool of water forms on the top of the ice cube and the string sinks into it. Then the pool of water freezes again, trapping the string.

In many places in the United States, salt is used to treat ice on roads and sidewalks. But, how does it work? It all starts with water.

When water is a liquid, the molecules that make it up can move and slide past each other, however, when the temperature reaches 32 degrees Fahrenheit, water freezes and those molecules bond into a rigid, crystal structure, forming ice. When salt is added, the salt ions spread out the liquid water molecules on the surface of the ice, which lowers the freezing point and causes some of the ice cube's surface to melt. When the salty water melts, the water gets colder and freezes the string to the ice cube.

# Ice Fishing

## Facilitator Guide



### **Learning Objectives:**

- How does water look and act differently as a solid and a liquid?
- How does salt affect ice?

### **Leading Questions:**

- What do you observe when the salt is sprinkled onto the ice cube?
- What happens when you lift the string?
- Do you think this experiment would work the same way if you froze other liquids like fruit juice?

### **Hospital Accommodations:**

- Be prepared to step in and help those who are still developing fine motor control.

### **Key Words:**

Ice - matter made from solid water. Its molecular structure is a rigid crystal.

Freezing Point - the temperature at which a liquid turns to solid. For water, this temperature is 32 degrees Fahrenheit or 0 degrees Celsius.

Melting - when a solid changes to a liquid. This occurs because the temperature of the solid is raised to the melting point for that material.

Freezing - when a liquid changes to a solid. This occurs because the temperature of the liquid is lowered to the freezing point for that material.