



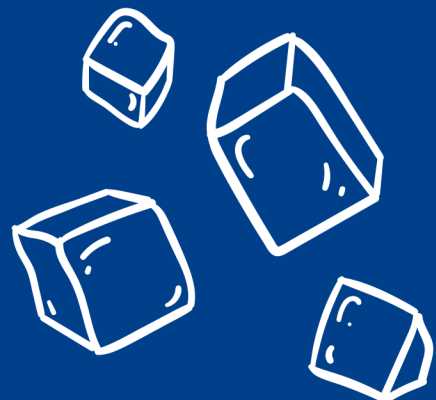
museum of science and nature

ICE FISHING

Can you pick up an ice cube
with a piece of yarn?

Materials:

- Ice cubes
- Water
- Container for 1.5 cups of water
- Yarn
- Salt
- *Optional:*
 - Coffee grounds
 - Sugar
 - Baking soda
 - Vinegar



Procedure:

1. Place 3 or 4 ice cubes in 1.5 cups of water.
2. Lay a piece of yarn across the top of the ice cubes.
3. Sprinkle a pinch of salt over the yarn where it touches the ice cube, and wait about 60 seconds.
4. Gently lift the yarn. What happens to the ice cube?

Experiment!

- Try using different amounts of salt.
- How many ice cubes can you catch?
- Use other materials instead of salt. Which works the most? The least?
- Does the sugar melt the ice at all?
- What happens if you sprinkle baking soda on the ice and then drip some vinegar on top?

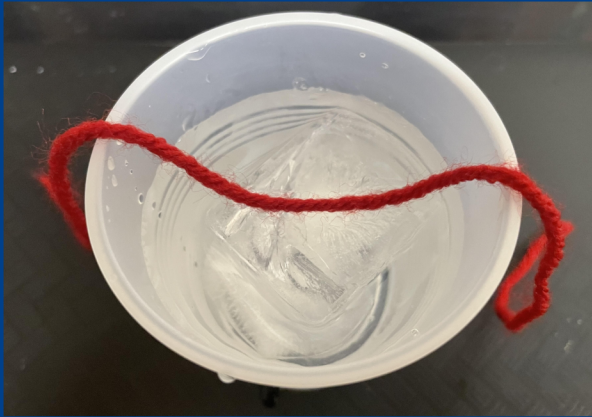
The Science:

When you gently pull up on the yarn, the ice cube should be lifted out of the water with it!

Why does this happen?

Liquid water freezes into ice (solid water) at a temperature of zero degrees Celsius. The added salt lowers the freezing temperature of the ice below zero degrees in a process called *freezing point depression*.

Ice that is under the salt will melt, and as the water dilutes the dissolved salt the freezing point increases back towards zero degrees. This allows the water to refreeze and "glue" the string to the ice cube! Many substances that are added to water will lower the freezing point and allow you to "catch" an ice cube.



Lay yarn across ice



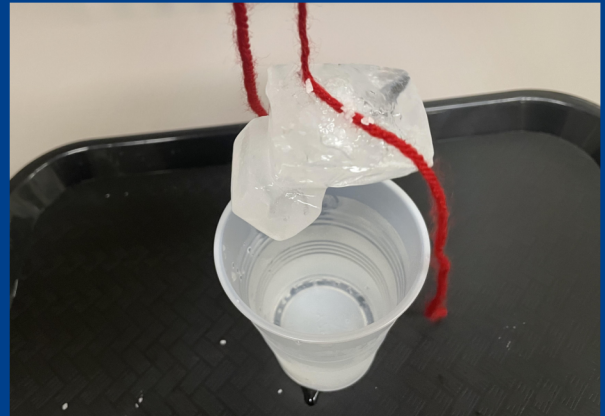
Sprinkle salt



Wait 60 seconds



Gently lift yarn



"Catch" the ice!