

Materials

- 2 ice cubes
- 2 cups
- Salt
- Food Coloring

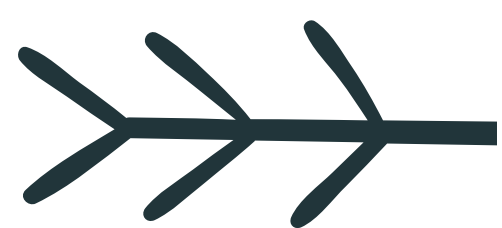
1 Fill the two cups with water. Mix salt into one cup.

2 In which cup do you think the ice cube will melt faster? Why?

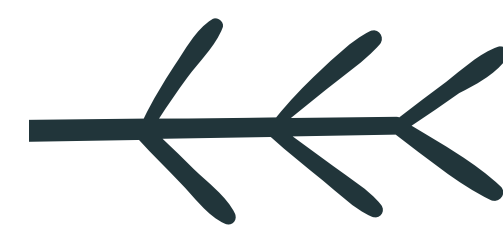


3 Add an ice cube to both cups. Watch the ice cubes melt. What is happening to each ice cube? After about a minute add food coloring to both cups. Pay close attention to the food coloring. What is the food coloring doing? Is the food coloring moving or staying still? Where is food coloring staying or moving?

4 Which one melted faster? Was it the one you guessed? Why do you think that one melted faster?



The Science Behind It



The one in the fresh water melted faster because of **convection** or the movement of a fluid when colder more dense substances sink and hotter less dense substances rise. In the fresh water, the colder water from the ice cube is more dense or more tightly packed because when things are colder their molecules get closer together. The warmer water is less dense because when things warm up their molecules get farther apart so it rises. This allows the cold water from the ice cube to go to the bottom of cup and the warm water to rise up and surround the ice cube, allowing it to melt faster. In the salt water, the cold fresh water from the ice cube is less dense than the salt water so the ice cube is surrounded by cold water and does not melt as quickly.