

Pick Up Ice with a String



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 **GUB Explorer Channel: Experiment with Ice**

KEY OBJECTIVES

1 To find out the effect of salt on the melting and freezing point of water.

INTRODUCTION

Did you ever wonder why they use salt to de-ice roads? Did you know that snow more readily sticks to pavement treated with salt? Why would this be the case? In this activity you will use the same principles to pick up ice cubes with a string. Is it possible to do this—without getting your hands cold? Do the activity and see what a pinch of salt can do.

GUIDING QUESTIONS

- How is ice formed?
- What happens when salt is sprinkled on ice?

MATERIALS/PREPARATION

- Empty Glass
- 2 Bowls
- 5-6 Pieces of Ice
- 1/2 Cup Water
- Piece of String
- 2 Teaspoon Salt

TOPICS

Chemistry matter

KEYWORDS

Freezing point melting

LEVEL

Early Learner Primary School

RESOURCE TYPE

Experiment

INTENDED AUDIENCE SIZE

Small group

MODE OF DELIVERY

Live online

TIME FOR ACTIVITY

20-30 min.

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TASKS/PROCEDURE

- 1 Pick 2 ice cubes and put each in the 2 separate empty bowls.
- 2 Sprinkle some salt on one and leave the other and then observe. Do they melt at the same rate? Which melts faster and why? Discuss with your fellow learners.
- 3 Put 5-6 pieces of ice into an empty glass or bowl.
- 4 Next, add the water into the glass.
- 5 Try to use the string to pick up a piece of ice. You will find that it isn't possible.
- 6 Next, lay the piece of string over the ice.
- 7 Sprinkle the salt over the string and wait for a minute.
- 8 After a minute has passed, pick up the string and watch what happens

FOSTERING DISCUSSIONS

In our first activity, you realized that the ice cube that we sprinkled salt melted way faster than the one without. So what does this tell you? That salt fastens the melting rate of ice.

When salt comes in contact with ice, it causes the ice to melt a little. The small amount of water from the melted ice and the salt combine together, lowering the freezing point of water. Saltwater has a lower freezing point than fresh water by about 4 Fahrenheit. This lowered freezing point makes it harder for water molecules to recrystallize into ice.

In this experiment, once the salt was added to the ice, the ice melted a little and then quickly refroze around the

string. This causes the ice to stick to the string when it is pulled out of the glass.

The same concept is used when you add salt to your driveway or sidewalk during the winter. The salt lowers the freezing point of water, causing it to melt so you can more easily remove it.

AUTHORS AND SOURCES

Submitted by Discovery Centre Kenya