

Ice Balloons

Best for Ages

3+

Workspace

Flat indoor/outdoor surface

Is electricity required?

No

Description

Ice Balloons is a great way to explore freezing and melting! Inspired by the Exploratorium [Science Snack](#), this activity will help you investigate ice in new ways.

Materials

- **Ice:** can be frozen in ice trays, balloons, gloves, plastic food storage containers, etc.
- **Items to put on ice:** food coloring, vegetable/fruit juice, small toys, metal objects
- Salt, sugar, baking soda
- **Liquids:** vinegar, water, rubbing alcohol, juice, pickle brine, flavored drink mix
- **Scoop:** spoon, pipette
- **Bin:** bowl, tray, cookie sheet with raised edges
- Towels

Concepts Explored

- States of Matter
- Melting Points

What to Do

1. Start off by freezing water in your chosen container. If desired, place small toys in water and/or color with food coloring or natural dye, such as the juices from fruits and vegetables.
2. Once water is frozen, take it out of container and place it in your bin to catch any melting water.
3. If desired, color other liquids so they are easier to differentiate.
4. Explore melting the ice with your various solid and liquid materials, slowly scooping the different things onto the ice with a spoon or pipette.
5. Observe what happens to the ice with each new material. What makes the ice melt faster? Slower? What happens to the surface of the ice? What about the interior of the ice?
6. Have fun exploring, using your observation skills to take a deeper look in the beauty that is ice!



Ice Balloons

Troubleshooting Tips

- If you spill some of your materials, don't worry! Just grab a towel and wipe it up!
- Keep a container of water nearby to rinse off the ice balloon before starting your next investigation. You can also have additional pieces of ice to explore.
- Try looking at the ice in the dark using a flashlight! Do you notice anything new about your ice?



What material melts the ice the fastest? The slowest?

What words would you use to describe the way the water looks frozen inside?

What other materials could you try to make the ice behave differently?

What is Happening?

- Both salt and vinegar lowers the **melting point** of ice. Melting point is the temperature at which the solid form (ice) becomes a liquid (water). This makes salt and vinegar more effective at melting the ice than other materials like sugar or flavored drink mix.
- Ice is a great way to explore **states of matter**, or solids, liquids, and gases.. As the ice melts, it changes from a solid to a liquid. Solids hold their shape, while liquids take the form of their container. If you heated the liquid form, water, you would generate steam, a gas.

Taking it Forward

- Connecting this activity to the real world:
 - *Discuss why salt is used on the roads during winter months, and brainstorm the best ways to melt ice off car windshields*
- Try freezing different types of water: salt, seltzer, hot, cold
- Continue exploring ice with these books that may be available at your local library::
 - *Ice* by Arthur Geisert
 - *Ice Boy* by David Ezra Stein