



High Touch High Tech®

Science Experiences That Come To You

Slushy Science

On a hot summer day, you can create your own Slushy! Invite some friends over, and mix up some different Slushy flavors. You can use juice or a fruit juice mix (such as Hawaiian punch or Kool-Aid.) Just follow these instructions, and have fun!

Supplies & Ingredients:

- Ice
- Rock salt
- Fruit juice or fruit juice mix (i.e. Hawaiian punch, Kool-Aid)
- Quart-size Ziploc Freezer Bags
- Sandwich-size Ziploc Bags
- Measuring cup
- Straws

Instructions:

1. Measure 1 cup of fruit juice. Pour fruit juice into sandwich-size Ziploc bag. Squeeze out excess air. (Securely zip bag to ensure it is closed!)
2. Place juice bag into quart-size Ziploc bag. Make sure the sandwich-size bag is closed!
3. Add approximately 10 ice cubes to the larger bag.
4. Measure 1 cup of rock salt. Pour the salt over the ice.
5. Seal the larger bag.
6. Shake the bag for at least 5 minutes. If working with some friends, make it a game! Toss the bag from person to person. When your hands get cold, toss the bag to someone else! (It's like "hot potato" with ice!)
7. After approximately 5 minutes of shaking, the liquid juice should start to solidify.
8. Carefully remove the slushy juice bag from the ice bag. Discard the ice.
9. Place your straw in the slushy and enjoy!!



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Quick Tip:

- Make sure your bags are tightly sealed. Otherwise, you'll taste a very salty slushy! Yuck!

The Science Behind It:

- Adding salt to ice lowers its freezing point. This means that the ice absorbs the heat from the juice, which is much warmer than the ice. As the ice absorbs the heat from the juice, the liquid starts to freeze!
- Sugar is important for a slushy. Sugar acts as an antifreeze in making a slushy. The sugar and water molecules bond together before the water completely freezes. Therefore, it is important that your juice has sugar.
- **Why is ice “sticky?”** When you touch ice, it immediately freezes the moisture in your skin. This makes the ice cube feel sticky!

Icy Desserts Around the World

Slushy

Ching bo leung – This is a Chinese dessert meaning “sweet soup.” *Ching bo leung* is a type of crushed ice served with sugar, water and various flavors. Some of the recipes include ginger, ginseng root or thinly sliced seaweed.

Cendol – In many parts of Southeast Asia, *cendol* is enjoyed as a dessert drink. Cendol is made from coconut milk, palm sugar, shaved ice, and jelly noodles from rice flour with green food coloring! Cendol has a very jelly-like consistency

Granita – Originating in Italy, granitas are a semi-frozen dessert with sugar, water, and various flavors. Granitas are similar to sorbets, with a slightly coarser texture.

Shaved Ice

Shaved ice – The Roman Emperor Nero sent slaves to nearby mountains to collect ice shavings. He then flavored the shaved ice with fruit and honey.

*In imperial Japan, the royalty would enjoy natural ice shavings as a luxury dessert.



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Snow cones – People in Canada and the US love to eat snowballs with fruit-flavored syrup.

Granizados – In Cuba, *granizados* are the local snow cone favorites. These are named after *granizo*, the Spanish word for hailstones. Granizados are often flavored with anise (a seed that tastes like licorice.)

Frío frío – In the Dominican Republic, snow cones are called *frio-frio*, the word for “cold.”

Hawaiian shaved ice – This frozen dessert is often topped with condensed milk and azuki beans.

Raspados – In Spanish, *raspar* means “scrape.” In Mexico, Raspa is a type of “scraped” ice with fruit flavors, leche (sweetened milk with cinnamon), *picosito* (lemon and chili powder), cucumber or pistachio.

Piragua – In Puerto Rico, neighborhoods often have street vendors selling pyramid shaped shaved ice cones. *Pira* designates “pyramids,” and *agua* means “water.”

Sno-ball – In New Orleans, sno-balls are made with finely shaved ice and flavored cane sugar. Sno-balls differ from snow cones because of the finely shaved, fluffy ice. Snow cones are more coarse and crunchy. The flavoring on a sno-ball is dispersed throughout the fluffy ice. (A snow cone’s flavor tends to sink to the bottom.)

Barad – In Israel, *barad* is found at street vendors. *Barad* means “hail” in Hebrew.

Chuski – In India, *chuski* is shaved ice with fruits, condensed milk, and additional flavors, like rose. *Chuski* means “ball of ice.”

Asia – There are many variations of shaved ice desserts in East and Southeast Asia. Solid ingredients, such as jellies and red bean paste, are added to provide texture. Sweetened condensed milk is usually added to sweeten the shaved ice dessert.



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Summer Slushy

It's almost summer, and we love to have picnics, grill, and enjoy barbeque! Maybe you are at the pool, the park, the beach or in your backyard. What's more fun than making a Summer Slushy to go with your barbeque sandwich? You can impress all of your friends.

Juice Ideas:

- Pink lemonade
- Watermelon
- Apple cider
- Orange
- Pineapple

Try freezing soda in ice cube trays. (Try root beer or Dr. Pepper.) Once it is frozen, ask an adult to use a blender to make a Soda Slushy!

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