SCIENCE WORLD BRITISH COLUMBIA
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Big Science for Little Hands @ Home

Young children naturally build knowledge by being curious about the world around them.

When you do science with your children, you can share their sense of wonder about the natural world. They'll develop self confidence when they ask and answer their own questions.

How to get the most out of your explorations:

- **Dress for the mess**
  Science explorations can be messy.
- **Take your time**
  Play for as long as the activity holds your child's interest.
  Don't rush towards the 'right' answer.
- **Be curious**
  Ask "What would happen if..." and then find out.
  Let your child's questions guide you.

5 **Mysterious Mixtures**
Science for 3-5 year-olds

Ooey Gooey Oobleck

Cornstarch and water make a fascinating mixture. For fun, we call it Oobleck.

The cornstarch is suspended in the water (instead of dissolving like sugar). Stirring it or squeezing it with force causes it to behave rather like a solid. When it's treated gently, it behaves more like a liquid.

What's happening? Applying a force to the Oobleck squeezes the water out from between the cornstarch bits. Pulling or pouring the Oobleck gently lets the water stay between the cornstarch bits.

Scientists call Oobleck a non-Newtonian fluid.

What You Need

- ☐ Tray, cake pan or large bowl
- ☐ Cornstarch
- ☐ Water

Hands-on

1. Combine equal parts water and cornstarch in the pan or bowl.
2. Get messy: stir, squeeze, pour, enjoy!

Hint

- Get Messy! Do this activity outside on a warm day or somewhere where mess is okay.
- Dispose of Oobleck in the garbage, not down the sink.
- For easy cleanup, allow spilled Oobleck to dry and then sweep up with a broom.

Questions to Ask

How does the Oobleck feel?

How long can you hold some in your hand?

What happens when you squeeze it?

What happens when you stir it quickly or slowly?

What Next?

- Try using spoons, sieves, spatulas and whisks in your Oobleck.
- Add more cornstarch or water to your mixture and observe how it changes.

Sweet Treat: Homemade Ice Cream

Dissolve sugar in milk then cool it down to make a delicious treat.

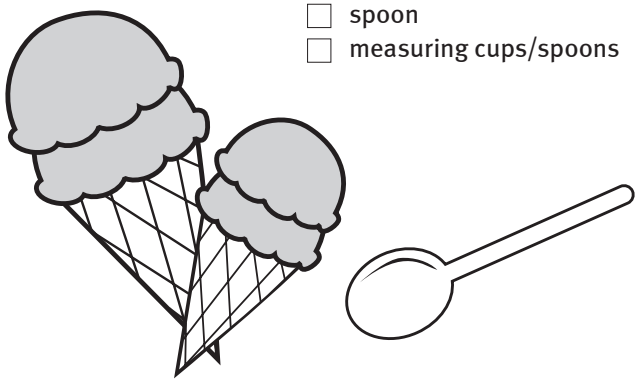
Fresh water freezes at zero degrees Celsius, but milk needs to be colder than that to freeze into ice cream. How can we make it colder?

When we add salt to ice, it dissolves in the water on the surface of the ice cubes. Salty water freezes at a much lower temperature than fresh water. The salt and ice mixture gets much colder than zero degrees Celsius. The mixture also cools milk enough to make your yummy treat.

What You Need

(per ½ cup serving):

- ☐ 50 mL (1/4 cup) 2% milk
- ☐ 50 mL (1/4 cup) whipping cream
- ☐ 25 mL (5 tsp) sugar
- ☐ 0.5 mL (1/8 tsp) vanilla or vanilla flavouring
- ☐ 100-175 mL (1/2 cup) salt
- ☐ 500 mL (2 cups) ice cubes
- ☐ one 1 L (1 quart) zip-top bag
- ☐ one 4 L (1 gallon) zip-top bag
- ☐ spoon
- ☐ measuring cups/spoons



Hands-on

1. Measure the sugar, milk, whipping cream and vanilla into the smaller zip-top bag.
2. Seal the bag securely.
3. Put the ice cubes into the larger zip-top bag.
4. Add salt to the bag of ice.
5. Place the sealed smaller bag inside the larger bag of ice and salt.
6. Seal the larger bag securely.
7. Gently rock the large bag from side to side. Caution, cold!
8. Shake and rock the bag for 5-10 minutes or until the contents of the smaller bag have solidified into ice cream.
9. Remove the small bag, open it, grab a spoon and enjoy!

Questions to Ask

What happens to the sugar when we add it to the milk?

What happens to the salt when we add it to the ice?

What are we making?

How does your bag feel?

What does your mixture taste like?

Hint

It is best to hold the large bag by the top seal or to have gloves or a cloth between the bag and your hands.

What Next?

- Experiment with making different ice cream flavours by adding chocolate, fruit or other flavourings.

Looking for more?

More science activities for young children can be found at

www.scienceworld.ca/preschool.html

This website has short videos, games and activities for 3-5 year olds

www.peepandthebigwideworld.com

Our favourite books:

Science Play by Jill Frankel Hauser
ISBN 1-885593-20-1

Science Arts by MaryAnn F. Kohl and Jean Potter
ISBN 0-935607-04-8