



Fun with Science

Cross-Curricular: Bouncy Ben's Barometer!

Bouncy Ben does not like to come out of his burrow if there is bad weather on the way. He has made a barometer for his burrow!

What is a barometer?

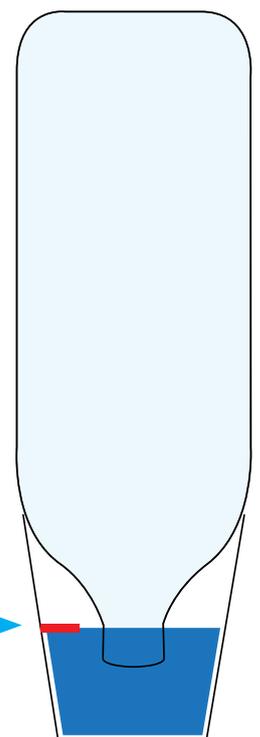
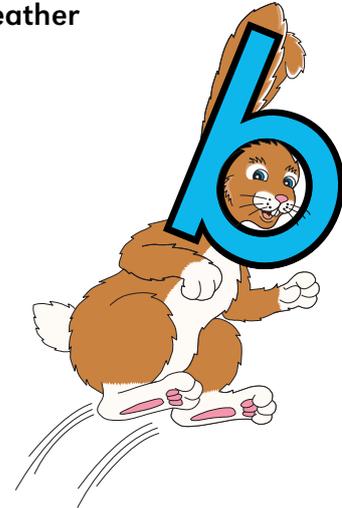
A **barometer** is a weather instrument that measures atmospheric pressure (the weight of the air in the atmosphere).

You will need

- A clear plastic cup
- Some water
- Some food colouring
- A 2 litre plastic bottle
- A marker pen

Instructions

1. Pour a few inches of water into a plastic cup. Add a few drops of food colouring. Bouncy Ben likes blue!
2. Place a plastic bottle upside down inside the cup as shown. The bottle opening must be below the waterline but not touching the bottom of the cup. Balance that bottle carefully in a spot that it can't be knocked! Use a marker and draw a line on the side of the cup to show the water level.
3. After a few days check the barometer again. If the weather has been bad the air pressure will have dropped. The level in the cup will have risen up.
4. When the weather gets better, the air pressure rises. The level in the cup will drop and the level in the bottle will rise up.
5. Bouncy Ben knows that when the level in the bottle is bigger, it's better weather and he can bounce out of his burrow!



Water level mark →

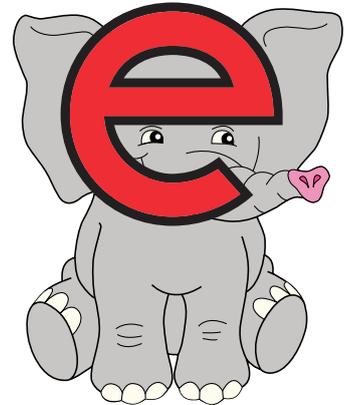


Cross-Curricular: Eddy Elephant's Expanding Universe!

Create your own expanding universe with this excellent space-themed experiment. Just follow the simple steps below!

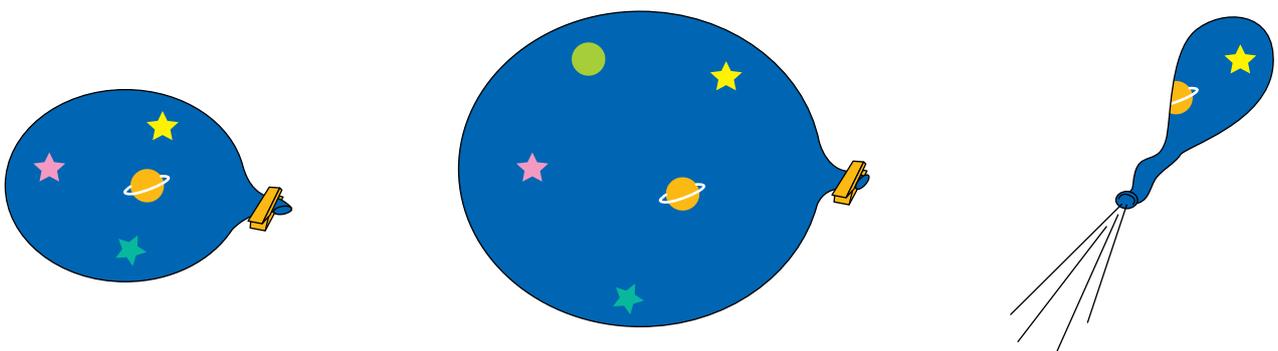
You will need

- A balloon
- A clothes peg (optional)
- Small stickers (stars and planets or any other theme that you like!)



Instructions

1. Blow up the balloon until it is about half full. Pinch the end closed using your clothes peg. Do not tie the balloon up.
2. Stick your stickers onto the balloon. Make sure you cover all of the available space. These stickers will be used to represent the planets of our solar system.
3. Once your stickers have been stuck down well, continue to blow the balloon up to its full size. Pinch the end closed again.
4. Talk about what happened to the 'planets' on the balloon. Did they move closer together, or further apart?
5. Explain that our universe expands in a similar way to the balloon. Planets, stars and galaxies all move further apart as the universe expands and grows.
6. Let go of the end of the balloon (or remove the peg), allowing the air to escape.
7. What happened to the balloon this time? Did it move forwards through the air? This is what happens when a rocket is launched. Hot air is expelled from the back of the rocket, which launches it into space - excellent!

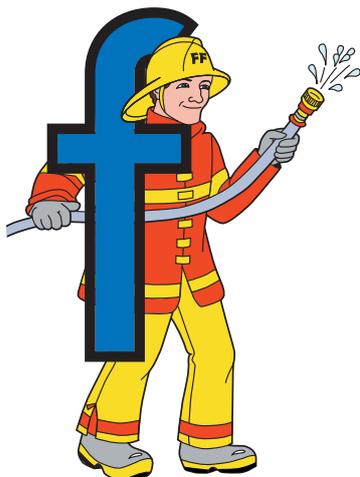


Eddy says...

How many planets are there in our solar system? Which do you think is the biggest?
Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto.



Sink or Float?



You will need

- 'Float' and 'Sink' cards (below)
- A large clear tub or container
- A small rock, pebble or marble
- A plastic cup
- A paper clip
- A coin
- A light plastic toy (e.g. a rubber duck)

Float:

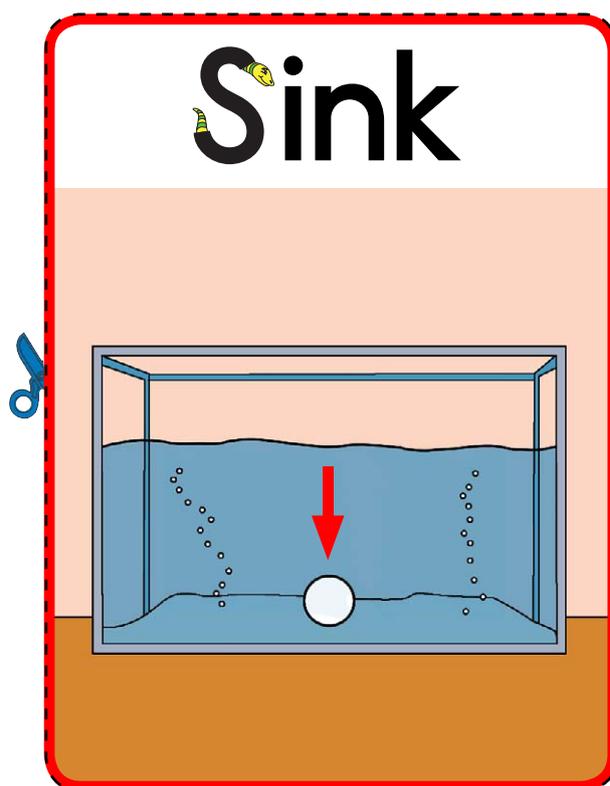
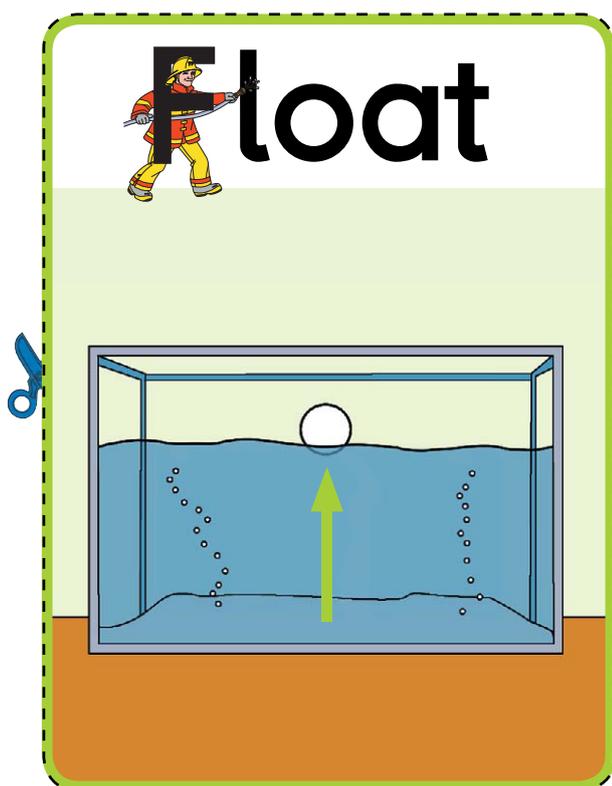
To rest or move on or near the surface of a liquid without sinking.

Sink:

To go down below the surface of something, to become submerged.

Instructions

1. Print out this sheet, then cut out the 'Float' and 'Sink' cards below and give them to your child.
2. Fill your tub with water.
3. Explain that you will be dropping your selection of items into the water, to see whether they will sink or float. Definitions of both of these words are provided in case your child is not sure what they mean. Ask your child to hold up the 'Float' card if they think the item will float, and the 'Sink' card if they think it will sink.
4. Put one item at a time into the water. When your child makes their prediction, talk about why they think the item will float/sink. You may like to write their predictions down and then talk about them some more when the experiment is over.



Impy Ink's Invisible Ink

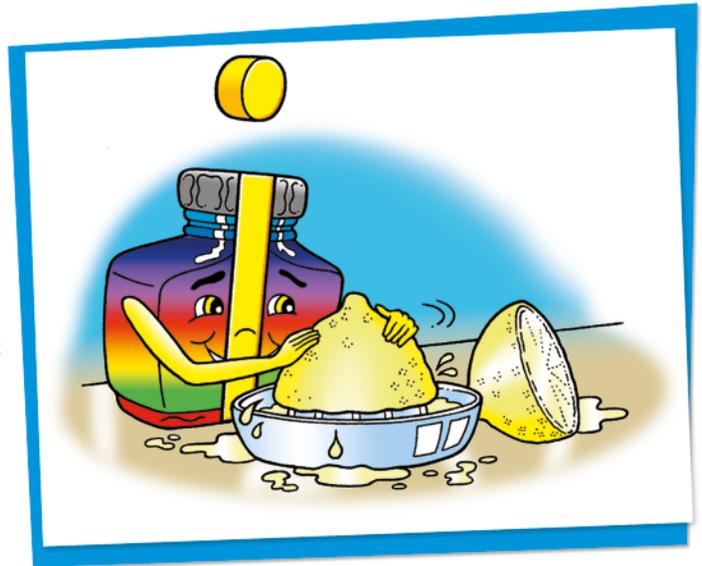
You will need:

- paper
- crayons
- a paintbrush
- a hairdryer
- lemons



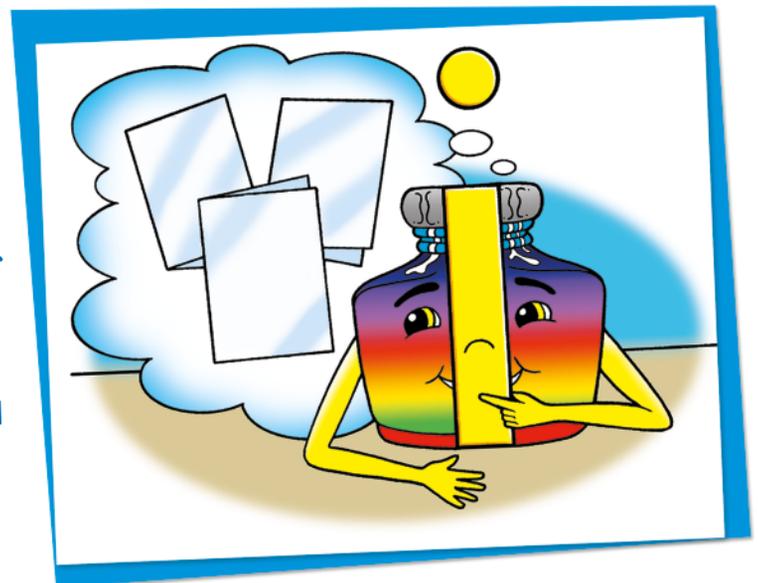
Impy thinks invisible ink is incredible!

1. Ask a grown-up to cut the lemons in half and squeeze the juice out of them. The lemon juice will be your invisible ink.



2. With your paintbrush, paint a picture on to your paper using your lemon juice invisible ink.

3. Now wait for your paper to dry. Have a think about what you can paint next.

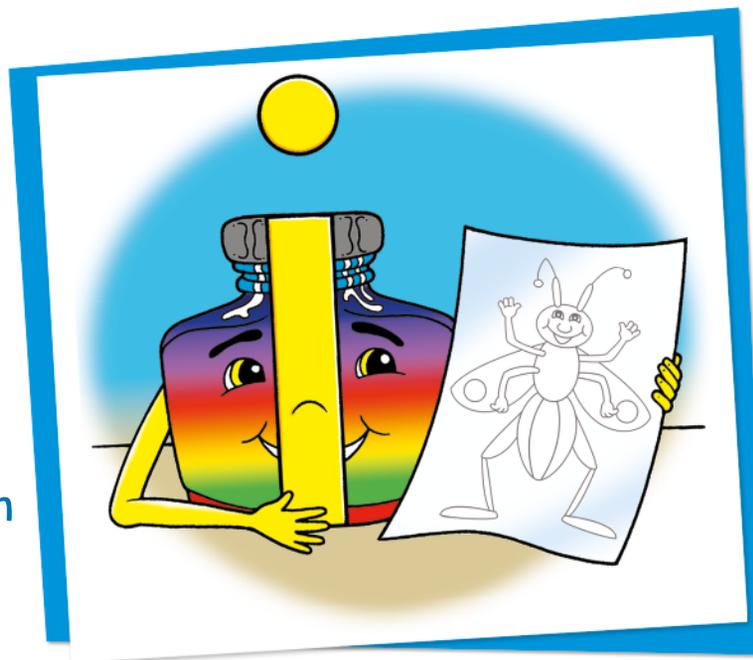




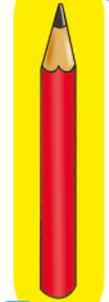
4. When your paper is dry, blow the hairdryer on to the area where you painted your picture. Be careful that your paper doesn't get too hot!

 Ask a grown-up to help you use the hairdryer.

5. Watch while your picture appears! Use crayons to decorate the rest of your paper with pretty patterns.



Tricky



Easy



Why not impress your friends with your invisible ink images!

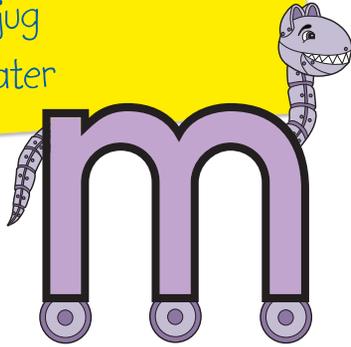


Impy Ink likes indigo ink the best. Which colour ink do you like?

Munching Mike's Milk Bottles

You will need:

- some glass bottles
- a spoon or pencil
- a jug
- water



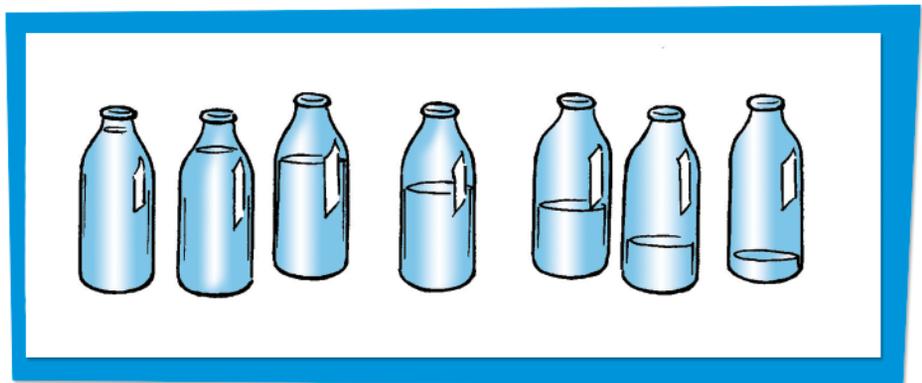
Make music with Munching Mike's milk bottles!

- 1.** Fill a jug with water from the tap.



- 2.** Carefully pour some water into each one of your milk bottles. Make sure you fill each bottle with a different amount of water.

- 3.** Arrange the milk bottles in a line.





4. Gently tap each bottle with your spoon and listen to the different sounds they make.

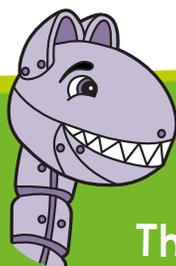
5. Experiment with the order you tap each bottle to make some music!



Tricky



Easy



Mike mentions...

This activity is a fun way to explore sound and introduce the concept of pitch in music. Small vibrations are made when you hit the glass, making sound waves travel through the water. More water means slower vibrations and a lower tone!

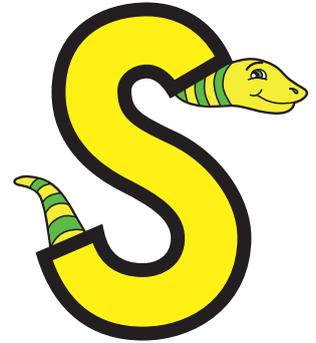


Cross-Curricular: Sammy Snake's Silly Slime!

Sammy Snake loves trying out new science experiments!
Follow the simple steps below to make some silly slime.

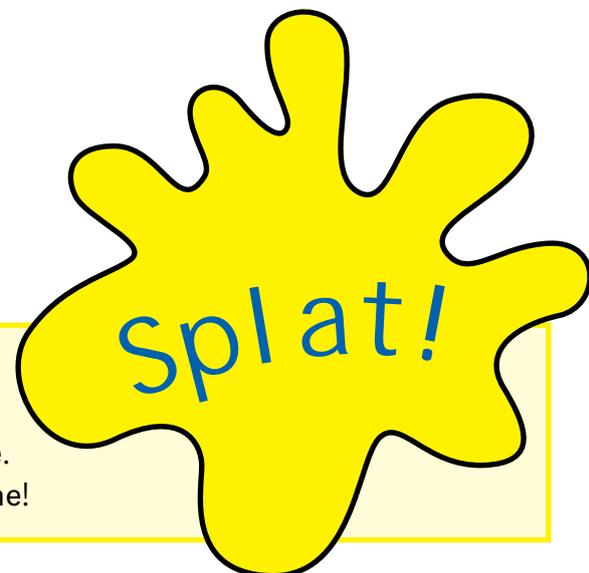
You will need

- 1/2 cup shampoo
- 1/4 cup cornflour
- Water
- Food colouring (Optional)



Instructions

1. Put the shampoo and cornflour into a bowl and mix well.
2. Add three drops of food colouring. (Optional)
3. Add 1 tablespoon of water and stir. Gradually add 5 more tablespoons of water, stirring well after each one.
4. If your slime is still super sticky, add some more cornflour and knead the slime until the texture improves.



Sammy says...

Add more water to your mixture for a wetter, stretchier slime.
Try adding some glitter to your mixture for super sparkly slime!

Sammy Snake's Static Snowstorm

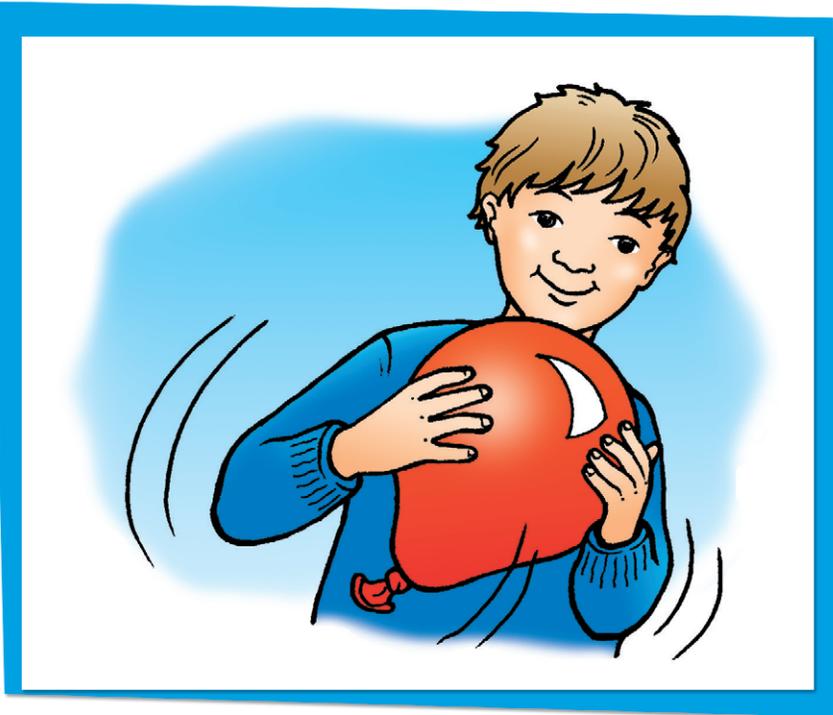
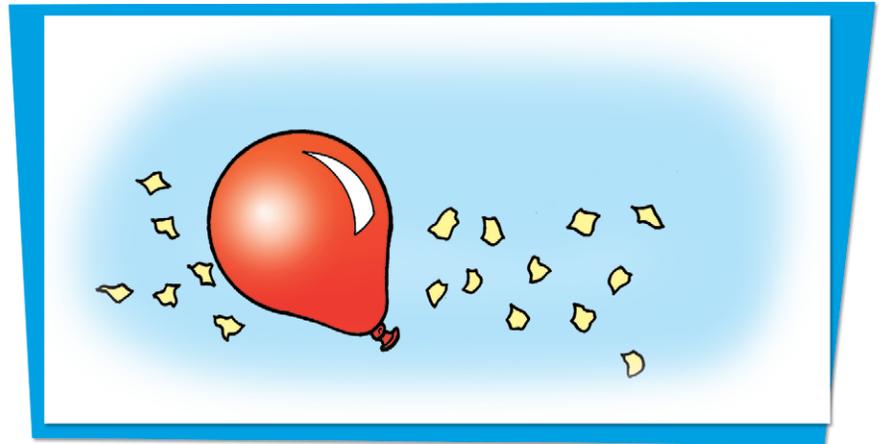
You will need:

- balloons
- tissue paper



Sammy Snake's snowstorm is superb!

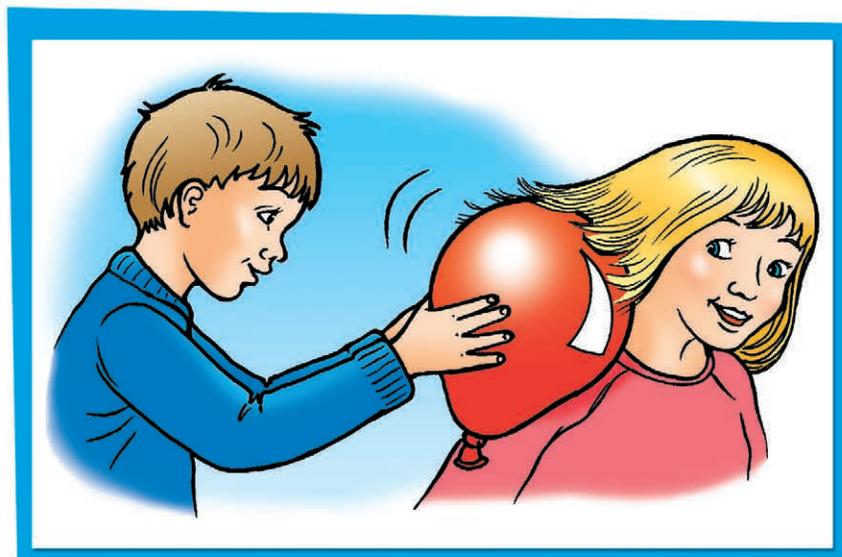
1. Ask an adult to blow up a balloon. Make some 'snow' by tearing some tissue paper into little pieces.



2. Rub the balloon several times on your sweater. Rub it quite fast until the balloon tries to stick. It is now charged with static electricity.



3. Hold the balloon near your tissue paper 'snow'. Look what happens! Recharge your balloon and you can play with your snowstorm again!



4. Rub the balloon again to recharge it. Now see what happens if you hold it against someone's hair!

Tricky

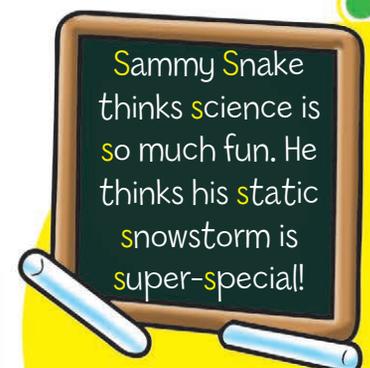


Easy



Sammy says...

Static electricity is not dangerous, like real electricity. Never play with real electricity. Instead have fun making your own static electricity with a balloon, like this.



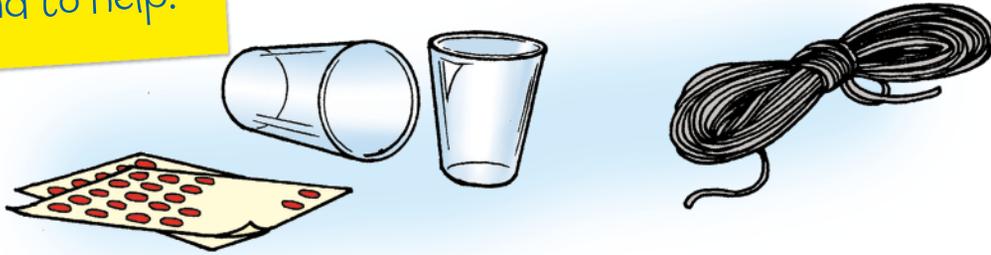
Sammy Snake thinks science is so much fun. He thinks his static snowstorm is super-special!

Talking Tess's Telephone

You will need:

- two plastic cups or yogurt pots
- thin string
- coloured dots
- a felt-tip pen
- a friend to help!

Talk to your friend using Tess's terrific telephone!



1. Stick the dots onto each plastic cup to make a 'key pad' for your telephone. Write numbers 0-9 on the dots.



2. Ask a grown-up to make a small hole in the bottom of each cup.

3. Thread the ends of the string through the holes in the cups. Tie a large knot in the end of each string.

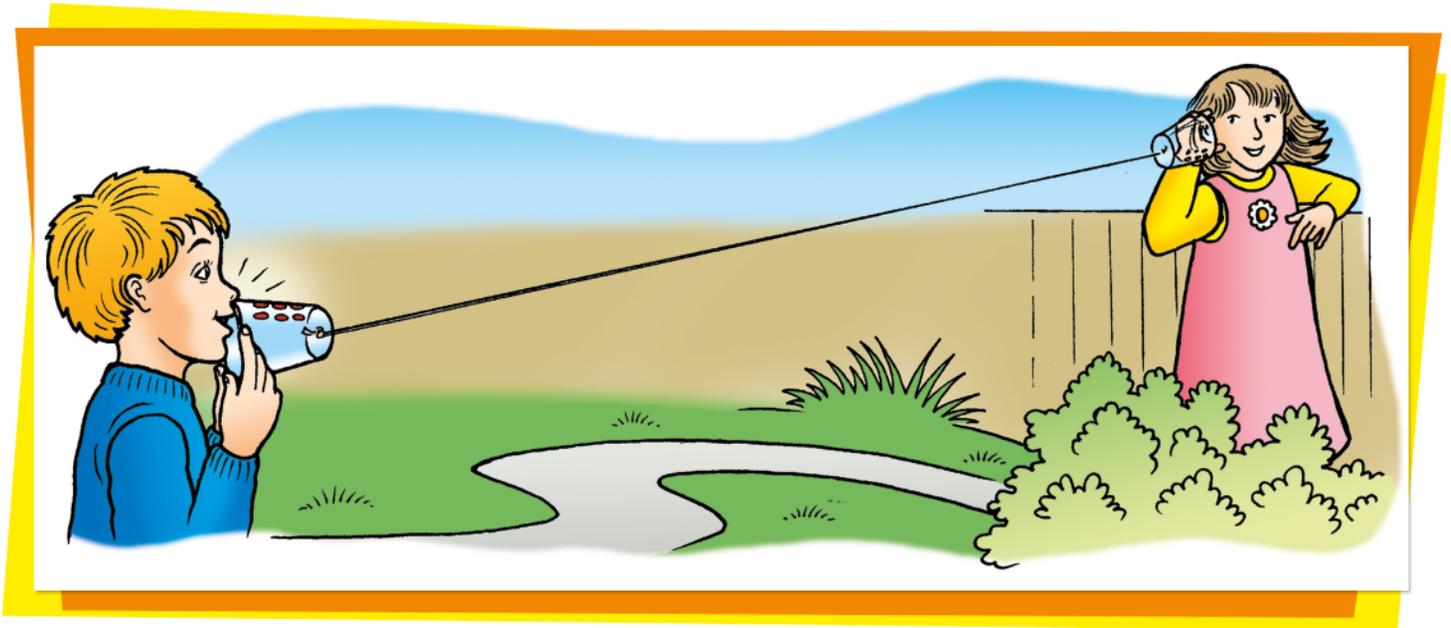




4. Give one cup to a friend and ask them to walk away until the string is stretched tight.

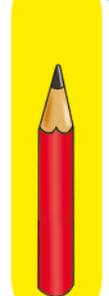


Always take care when using string.



5. Ask your friend to hold their cup to their ear as you speak into yours.

Tricky



Easy

Tess's Top Tip!



The telephone works well when the string is stretched tight and straight. Hold the cups at the rim so that the bottoms are free to vibrate.

Talking Tess likes talking to her friends on the telephone. Do you enjoy talking, too?

