



Children are born scientists - they love to explore and discover. There are many activities that you can enjoy doing at home with your little scientist.

## QUESTIONS

- What things float and what things sink?
- Why does it rain?
- Where does the rain come from?

## TRY THIS AT HOME

### Rain Bottles

See a video demonstration of this *Science Time* activity at [www.questacon.edu.au](http://www.questacon.edu.au)

### You will need

- Empty plastic bottles with lids
- Something to make holes in the lids
- Water

## WHAT TO DO

1. Put a few holes in the bottom of the bottle and one in the lid. Don't make the holes too big, otherwise the surface tension won't hold the water in the bottle.
2. Fill the bottle with water and put the lid on. Hold it over the sink or in the bath.
3. When you put your finger over the hole on the lid of the bottle no water comes out of the bottle.
4. When you lift your finger off the hole the rain flows out!

## WHAT'S HAPPENING?

- The water is held inside the bottle by a combination of air pressure and the surface tension of the water.



- When you cover the hole in the lid, air can't get in to fill the empty space. The air pressure inside the bottle drops a little. The higher air pressure around the bottle pushes against the bottle walls and against the holes in the bottom of the bottle. This stops any more water escaping. The surface tension of the water droplets also helps to seal the holes in the bottom of the bottle.
- When you take your finger off the lid hole, gravity attracts the water downwards. As water leaves the holes in the bottom of the bottle, air flows in through the lid's hole to take up the space being created.



## DISCOVER MORE

- Do you think it will work if we use bigger or smaller bottles?
- What happens if you put the holes in the side of the bottle?

## DID YOU KNOW

Water has something called "surface tension". Surface tension means that water molecules are always pushing and pulling each other which makes the water stick to itself and it takes some effort to pull water-drops apart.

## TRY THESE OTHER ACTIVITIES

- Float and Sink: Collect many different items from around the house to play with in the bath and see if they float or sink. Guess what will float before you try. Make sure not to use glass, electronics or anything else that might break in water.

## SING SONGS

Sing these songs with your child. Don't forget to do the actions if you know them!

### All the Fish are Swimming

All the fish are swimming in the water  
All the fish are swimming in the water, swimming in  
the water, swimming in the water.  
All the fish are swimming in the water, hi dee, hi dee,  
hi dee ho!

## READ BOOKS

Have fun finding more at your local library, book store or online.

- *Who sank the boat* by Pamela Allen
- *Alexander's outing* by Pamela Allen
- *Mr Archimedes' bath* by Pamela Allen
- *The magic school bus wet all over: A book about the water cycle* by Pat Relf and Carolyn Bracken

## GO ON AN EXCURSION

Go on a water excursion! Here are some suggestions if you are in the Canberra region.

- Questacon and splash around in Mini Q's Water Play.
- Play in the bath. There are a lot of water experiments you can do in the bath!
- Go swimming at your local pool and have fun playing in the water.
- Go for a walk around your local lake. Sail a boat on the water. Throw small pebbles in the water and watch what happens.

## INVESTIGATE WEBSITES

There are also many websites for children about water. We suggest you start with:

- **Questacon** Watch the *Science Time* Water video at [www.questacon.edu.au](http://www.questacon.edu.au)
- **Magic School Bus videos**  
[.ovguide.com/tv/the\\_magic\\_school\\_bus.htm](http://.ovguide.com/tv/the_magic_school_bus.htm)  
Goes up stream (S3 ep8) and Wet all over (S2 ep5)
- **Water cycle story** Drippy the raindrop (in child friendly words) [www.kimballmedia.com](http://www.kimballmedia.com)
- **Online story** I will not take a bath  
[www.storyplace.org](http://www.storyplace.org)