

10 science experiments to do with your child at home

1. Exploring density

Allow your child to further their sinking and floating knowledge by creating a density tower.

Equipment:

- A container (jar) or long glass
- Sunflower or vegetable oil
- Water
- Three small different weighted objects, for example, a key, a cherry tomatoe and a ping pong ball

Method:

Put the water in the container then add the oil and watch the liquids separate. Finally add your objects one at a time. What does your child observe?

Taking it further:

Try adding in different liquids, including milk and honey and explore what happens. Challenge your child to see how many different layers they can create.

2. Chemical reaction with citric acid

Encourage your child to explore how citric acid and baking soda react in an unusual way!

Equipment:

- Lemons (2 recommended)
- Baking soda
- Food colouring (optional)
- Dish soap (optional, makes the lava more froffy)
- Tray
- Cup and spoon

Method:

Cut off the base of your lemon to make a flat surface. Core the lemon. Mash the centre of your lemon with a spoon (don't let the lemon juice escape). Add food dye into your lemon (optional) and then a squeeze of dish soap into your lemon (optional). Add in a spoonful of baking soda. Watch the mixture fix and foam!

Taking it further:

Explore what happens when you alter the amounts of lemon juice and baking soda.

3. Make a Non-Newtonian fluid

Support your child to investigate if oobleck is a solid, a liquid or both.

Equipment:

- A bowl
- Two cups of cornstarch
- Food colouring
- One cup of water

Method:

Mix the ingredients together in a bowl. Explore and compare how the material behaves when you pour it and when force is applied to it.

Question to ask:

Is it a solid, a liquid or both? Why?

Taking it further:

Alter the amount of both ingredients and record the changes.

4. Creating sound

Explore how vibrations create sounds.

Equipment:

- Various bottles, cleaned
- Water

Method:

Fill each bottle with different amounts of water. Blow across the openings and hear the different sounds they create.

Challenge to ask:

Can you create music with the different sounds created?

Taking in further:

Record how the amount of water in the bottle changes the sound that they hear.

5. Crystallization

Make salt crystals at home and explore evaporation.

Equipment:

- Glass bowl
- One glass of water
- 4 teaspoons of table salt
- Magnifying glass
- Food colouring (optional)

Method:

Dissolve the salt in a glass of water. Pour some of the salt water into a glass bowl. Put the salt water in a warm place so that it evaporates. Use a magnifying glass to look at the crystals closely.

Questions to ask:

What do you notice about the shape and pattern of the crystals? Are they all the same?

Taking it further:

Record the amount of time it takes for the water to evaporate. Make small batches and place them in different parts of the house. Conclude which area led to the quickest evaporation time and why.

6. Investigate fingerprints

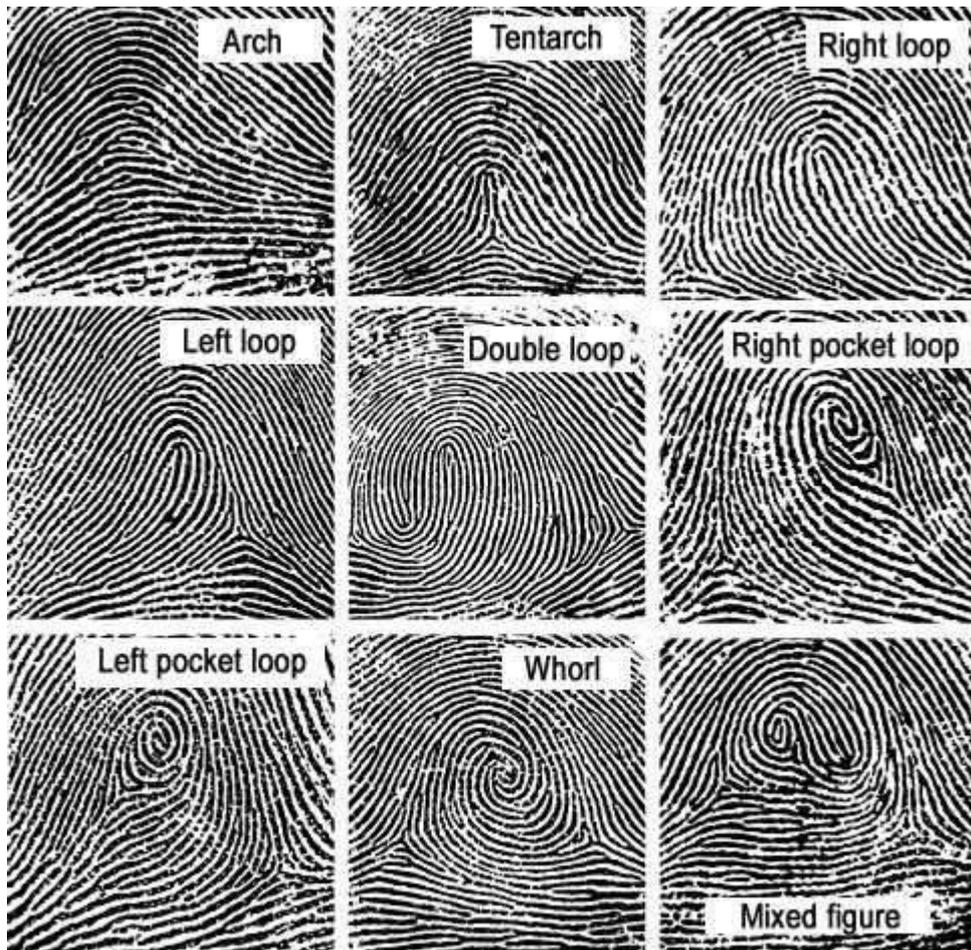
Do we all have the same fingerprints?

Equipment:

- Ink pad
- Magnifying glass
- Paper

Method:

Use the same finger for different family members and compare how they differ. Look at the patterns in each finger print. Why not use the guide below to help with pattern identification.



Taking it further:

Turn the activity into a mystery for your child to solve. Leave a fingerprint from one family member as evidence on something and ask your child to solve the mystery and find out who it belongs to by comparing the different fingerprints within the family.

7. Mixing and temperature

Which mixes colours faster, hot or cold water?

Equipment:

- 2 clear glasses filled with warm water
- 1 ice cube
- Food colouring

Method:

Place two glasses with warm water in them on a flat surface. Place an icecube in one of the glasses. Put food colouring in each glass. Watch and compare how the colour moves in each glass.

Question to ask:

What is the difference between the patterns they make and the speed of which each mixes?

Taking it further:

Alter how many ice cubes you add, monitoring the temperature of each experiment. Record the differences that take place.

8. Germ growing experiment

Investigate how germs grow.

Equipment:

- 1 slice of bread
- Container
- Paper

Method:

Cut the bread up into small squares. Wipe one bread square on the floor, one bread square between your hands and leave one as a control sample. Label each bread sample so you know which is which. Leave the bread samples in a container and record what happens over time.

Questions to ask:

What changes do you notice? Which has the most germs on it? How do you know and why?

Taking it further:

Test other parts of the house and outside also. Discuss how germs can be minimised.

9. Taste test

Create a taste test challenge for your child to explore their taste buds.

Equipment:

Any of the following..

- Blindfold (optional)
- Small bowls or plates
- Small lemon wedge
- Small lime wedge
- Small spoonful of vinegar
- Small spoonful of salt
- Small spoonful of sugar

Method:

Put each ingredient in a small bowl or plate. If your child wants to conduct the experiment without looking at the items you could blindfold them. Record the taste of each item, categorising them as either, sweet, bitter, salty or sour.

Taking it further:

The same experiment can be conducted but with the sense of smell. Categorise the scents that they smell and group the objects with similar scents.

10. Oxidisation

Investigate how pennies change over time due to oxidisation.

Equipment:

- 3 dull or dirty looking pennies
- ¼ cup of white vinegar
- 1 teaspoon of table salt
- Paper towel
- Small non metal bowl

Method:

Part 1:

Pour the vinegar and salt into a bowl and stir until dissolved. Put three pennies into the bowl for 30 seconds. Take the pennies out and rinse with water.

Part 2:

Put one of the pennies onto a dry paper towel, put the second one on a paper towel soaked with vinegar and dip the third penny in the salty vinegar water. Leave each to dry and observe what happens to each over several hours.

Question to ask:

What do you notice has changed?

Taking it further:

Predict which penny oxidized the quickest and why.