



Rocking parrot

1. Cut out and colour Polly parrot.
2. Add some blu tak to her tail to make her heavier.
3. Balance her on a pencil.
4. Push her gently to make her rock back and forth.
5. How many times does she rock?
6. Change the weight of blu tak. How many times does she rock now?

Think about...

Change the length of Polly's tail. How many times does she rock?

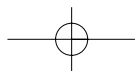
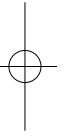
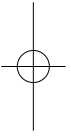
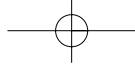
Change the weight on Polly's tail. How many times does she rock?

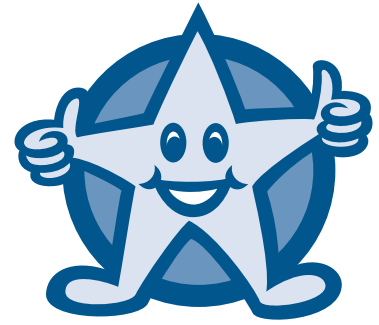
Complete the charts

Length of tail	Number of rocks

Weight on tail	Number of rocks

This activity may be photocopied.
This activity has been provided by Jess Cooke, Lenzie Academy, Glasgow





Making moon craters

1. Make sure your moon surface is smooth.
2. Drop one of the balls onto the moon's surface.
3. Draw what happens.
4. Drop a different ball onto the moon's surface.
5. Does it make a bigger or a smaller crater?
6. Drop some more balls and draw your moon surface.



Think about...

Drop one ball from different heights. How do different heights change the size of the crater.

Height of ball	Size of crater

Drop different sized balls from the same height. How do different balls change the size of the crater.

Size of ball	Size of crater

What do you think has caused all the craters on the moon?



Club leader's notes

EQUIPMENT

A large tray or similar container, flour, drinking chocolate powder, a sieve, newspaper, different size balls made out of plasticene, metre stick, cm rulers

BACKGROUND INFORMATION

The surface of the moon is covered with approximately circular depressions called craters. Most of these craters have been caused by impacts with meteorites in the distant past. This activity models how these craters were formed.

ACTION

1. Spread the newspaper on the floor.
2. Fill the tray with about 5cm of flour and make the surface as smooth as possible.
3. Sprinkle a thin, even layer of chocolate powder over the surface using the sieve.
4. Place the tray in the middle of the newspaper.
5. Drop plasticene balls into the tray to create craters.
6. Remove the 'meteorite' carefully before measuring the diameter of the crater.

ABOUT THE ACTIVITY

Depending on the age and ability of the children, this is an ideal activity for making comparisons, taking measurements, controlling variables (the height and the mass), drawing conclusions. At the simplest level, children can drop 'meteorites' to create a moon surface and draw the results. However, they may also be able to

- compare relative sizes; bigger than, smaller than
- measure the diameter of the meteorite and the diameter of the crater. The easiest way of measuring the diameter (or width) of a ball is to put a ruler on either side of the ball and use another ruler to measure the distance between them.
- drop meteorites of different sizes from the same height and measure the results
- drop meteorites of the same size from different heights and measure the results
- be aware of inaccurate results by repeating their tests several times
- draw conclusions about how to make craters of different sizes

SAFETY

Dropping balls into flour may cause particles to fly into the air. Make sure children are either wearing safety goggles or standing at a safe distance to prevent flour particles getting into their eyes.



Go with the flow

EQUIPMENT NEEDED: A small clear plastic bottle with a tight fitting lid, Water, Food colouring (optional), Sticky tape, Liquid soap that has glycol stearate in it (Check the ingredients on the label and make sure it is not glycol distearate)

Here's how to make a bottle full of swirly patterns

1. Fill the bottle about 1/4 full of liquid soap.
2. If it is a pale coloured liquid, add a couple of drops of food colouring to make the swirls easier to see.
3. Fill the bottle up very slowly with water. (If you fill it too quickly you get foam.) Make sure that the water fills the bottle right to the very top.
4. Screw the cap on the bottle tightly. Turn the bottle upside gently a few times to mix the soap and the water.
5. Dry the bottle and put sticky tape firmly round the cap to prevent leakages.

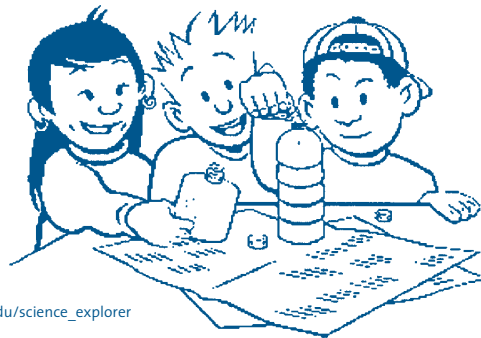


Twirl the bottle slowly. What do you see?

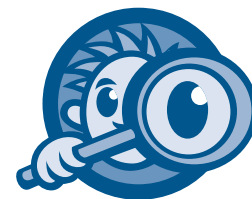
What happens when you stop twirling the bottle?

What happens when you spin it quickly?

What different patterns can you see?



This activity may be photocopied.
This activity has been adapted from www.exploratorium.edu/science_explorer



Club leader's notes

Go with the flow

BACKGROUND INFORMATION

Normally, you can't see how the water is moving inside a full jar of water. Water that's moving in one direction looks the same as water that's moving in another direction. Glycol stearate is the chemical that gives some soaps a pearly look and this lets you see patterns flow in the water. If the bottle is properly sealed it should last for ages!

ABOUT THE ACTIVITY

When you turn the bottle slowly you will see smooth streaks in the water. When layers of water are moving slowly and smoothly past each other, you get this pattern which is called laminar flow.

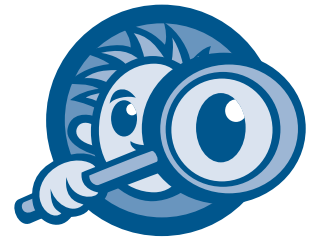
When you suddenly stop turning the bottle or when you turn it very fast, you may see lots of swirls and wavy patterns. When one layer of water moves rapidly past another layer of water it causes turbulence which you see as swirly patterns.

When people design aeroplanes, cars, boats, golf balls and other things that move through air or water, they study the patterns blowing air or flowing water make as the object moves through it. Differences in the flow of air or water can affect how well an aeroplane flies or how much mileage a car gets per litre.

SUGGESTED EXTENSION ACTIVITIES

Investigate different types of 'pearly' soaps and shampoos to see which produce the best results.

Investigate different ratios of soap to water to see which produce the best results. Roll your bottle down different slopes and time how long the swirly patterns last.



Rocket launch

EQUIPMENT: Balloons, paperclips, sellotape, tape measure, smooth thread (fishing line is ideal)

Make and test a balloon powered rocket

Blow up a balloon and let go. What happens? _____

Follow these instructions to control the direction in which your balloon travels.

1. Bend two paper clips to make two hooks.

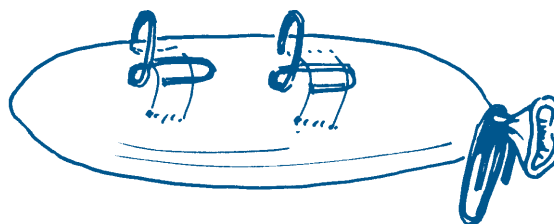


2. Blow up a balloon and sellotape the two hooks in a straight line to the 'top'.

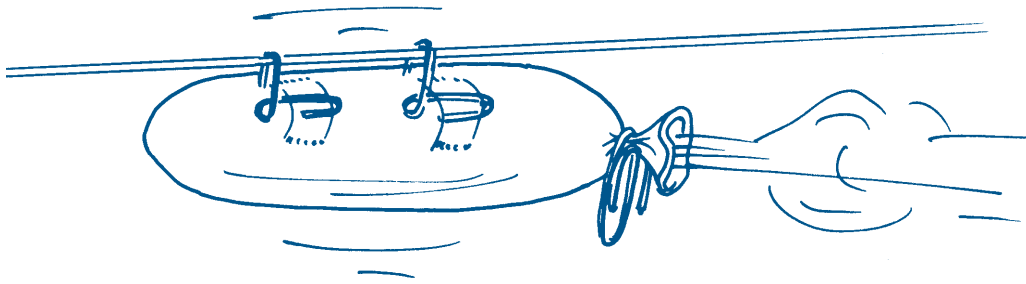


3. Fasten the thread horizontally across the room (making sure it is somewhere where people will not walk into it!)

4. Put the end of the balloon through the gap in another paper clip. This controls the flow of air from the balloon.



5. Attach the two hooks to the thread and let go.



What happens? _____

What modifications do you need to make for your rocket to travel further? _____

Now investigate your rocket

Investigate how far your balloon travels with different amounts of air inside.

How will you make your investigation fair? _____

How will you measure the amount of air in the balloon each time? _____

Record your results in a chart. What conclusions can you draw from your results?

Investigate how well your balloon travels up a sloping thread.