

# Science homework

- You have to choose **4** experiments from the choices on the next 10 pages.
- Read the instructions, make sure you check with parents before you start, ask for equipment from your science teacher if you don't have it at home.
- Then...have a go!
- If you cannot get the equipment or it isn't possible for you to do the experiment, watch 4 of the video links on the slides.
- Next – produce a report on what you found out. This can be in one of the following formats:
  - Poster
  - Newspaper report
  - Storyboard
  - Vlog(Video blog)

<b>Success criteria</b>	
Warm	You have <b>observed</b> or safely <b>participated</b> in the experiment
Hot	You have <b>outlined</b> the steps of the experiment.
Scorching	You have <b>identified</b> what you have learnt from the experiment.

# Fire extinguisher

## You will need:

Jug  
Water  
Matches  
Small candle  
Plate  
Clean and empty jar  
3 coins the same size  
Blue tac/playdoh.

REMEMBER!  
Ask parents first and  
check before you use  
matches or a candle.



<https://www.youtube.com/watch?v=RMAb1wbQMo>

## Instructions:

1. Put a small lump of blue tac/playdoh in the centre of a plate and stick a candle into it so it stands up-right.
2. Put three coins around the candle. They will support the rim of the jar.
3. Pour water onto the plate so it covers the coins.
4. Light the candle and put the jar over it so it rests on the coins.
5. Watch what happens to the water and the candle.

# Crystals

## You will need:

- Fridge
- Oven
- Table salt
- Epsom salts
- 2 glasses
- Jug
- 2 teaspoons
- 4 saucers
- Water

## REMEMBER!

Ask parents first and check before you use the oven.



<https://www.youtube.com/watch?v=gWAnzrCtlww>

## Instructions:

1. Half fill two glasses with warm water. In 1 glass add 3 teaspoons of table salt and in the other add 3 teaspoons of Epsom salt. Stir each until the salt dissolves
2. Pour a little of the table salt solution onto two saucers and leave 1 in a warm place for 3 days.
3. Put the other saucer in the oven at 140°C/gas mark 1 for 15 mins.
4. Pour some Epsom salt onto two saucers again put 1 in a warm place for a few days.
5. Put the other saucer in the fridge for an hour.

# Bottle rocket

## You will need:

- 200/300ml Fruit Shoot bottle
- Fizzy headache or vitamin tablets (Alka-Seltzer or Berocca)
- Mug that allows upside-down bottle to fit inside, with lid touching bottom.
- Warm water form the tap

## REMEMBER!

Ask parents first and check before you do this experiment.



<https://www.youtube.com/watch?v=gWAnzrCtlww>

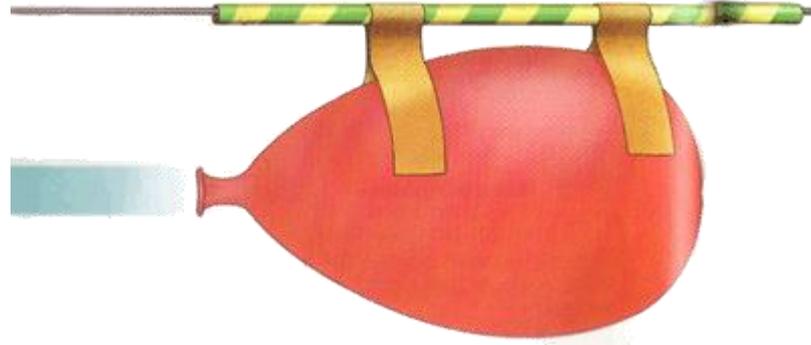
## Instructions:

1. Unscrew the lid of your bottle and make sure pop up lid is firmly pressed down.
2. Half-fill the bottle with warm water. Break two fizzy tablets in half and drop them into the bottle.
3. Quickly screw lid back on firmly, give bottle a quick shake and place upside down in mug.
4. Stand back and wait
5. Try again with warm water-what difference does it make?
6. **Allow at least three minutes to pass before checking the rocket**

# Rocket balloons.

## You will need:

2 chairs  
2 balloons  
2 straws  
Some string  
Sticky tape  
Paper clips  
Tape measure.



<https://www.youtube.com/watch?v=KMX7zgaLC0w>

## Instructions:

1. Cut two lengths of string, each about 5 meters long and thread a straw into each piece of string.
2. Tie or stick the sting to the two chairs and pull the chairs apart so that the sting is taut.
3. Blow up one balloon completely, and the other balloon only half full of air. Twist the ends and attach a paper clip to stop the air from escaping.
4. Pull the straws to one end of the string and attach the booms using sticky tape.
5. Carefully remove each paperclip. Make sure the neck of the balloon isn't sticking together. Let the balloons go and watch how far they travel.

# DIY Water Bottle Snake Bubble



## Equipment

- Dish Soap
- Water bottle
- Sock
- Water

<https://www.youtube.com/watch?v=G18f45Lo0nw>

## Method

1. Cut a  $\frac{1}{4}$  off the end of the water bottle
2. Place the sock over the cut out section of your water bottle
3. Add a little squirt of dish soap to a small container of water. Grab a spoon and give your bubble mix a good stir.
4. Dip your water bottle with the sock end into the dish soap and water solution you have made
5. Blow on the mouth part of the water bottle, and see what happens!



# Electric balloons

## You will need:

Work surface  
3 balloons  
Sock or glove  
Tissue paper  
Metal spoon  
1m cotton thread  
Water  
Scissors



<https://www.youtube.com/watch?v=RU SXy32JagA>

## Instructions:

1. Blow up a balloon and rub it on something woollen, eg. a sock/glove.
2. Move the balloon over small scraps of paper and see what happens.
3. Wet a spoon and rub it over the surface of the balloon. Try it again with the paper and see what happens.

# A colour symphony



## Equipment

- Dish Soap
- Flat tray
- Food Colouring
- Whole milk

<https://www.youtube.com/watch?v=rqQSIEViNpk>

## Method

1. Carefully pour the milk into the tray so that it just covers the bottom
2. Add about 6-8 drops of different coloured food colouring onto the milk in different spots
3. Add about 5 drops of the liquid soap onto the drops of food colouring and watch the show! Or you could put dish soap on a cotton bud and place it into the milk and see what happens.
4. To clean up, simply pour the coloured milk down the drain. (don't drink it!)



# Blowing Tricks



## Equipment

Work surface

Small balloon

Large plastic drinks bottle

Card tube

Sandwich bag

Scissors

## Method

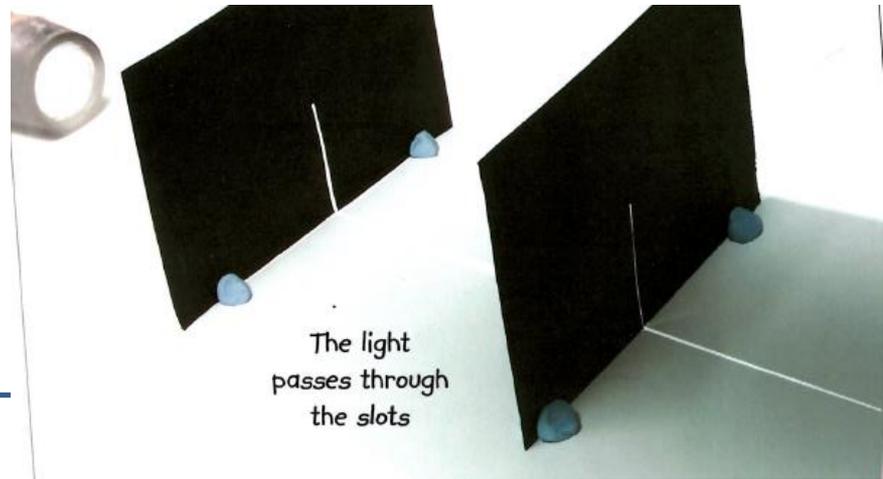
1. Remove the cap of a large plastic drinks bottle and then carefully cut off the bottom of the bottle.
2. Blow the balloon up to the size of a ping-pong ball and drop it into the neck of the bottle.
3. Blow up the bottle neck and try to blow the balloon out of the bottle.
4. Can you blow it out?



## You will need:

Work surface  
thin A4 card (any colour)  
scissors  
modelling clay or sticky  
tack  
torch  
small mirror

# Ray of Light



## Instructions:

Cut a piece of A4 card in half. Hold the pieces together and cut a slot 5 cm deep in one of the long edges.

Stand one of the pieces of card on its slotted edge. Support it with four pieces of sticky tack or modelling clay near the corners.

Stand the other piece of card on its slotted edge, parallel to the first piece and about 15 cm away from it.

Support it with four pieces of modelling clay. The slots in the cards should be roughly opposite each other.

Switch off the lights, or close the curtains to make the room dark. Shine a torch through one of the slots from about 10 cm away. Move the torch from side to side to make the ray pass through both sides. What does the light do?

Replace one piece of card with a mirror, with its reflecting side facing the remaining card. Shine the torch through the slot towards the mirror. Does the light stop?

Explain why.

# Blow some music!

## What you need

8 plastic drinking straws  
sticky tape  
scissors  
a ruler  
pen or pencil



<https://www.kidspot.com.au/things-to-do/activity-articles/make-a-straw-flute/news-story/c76ad8388ccb866800f9539f96673b13>

## Instructions:

Start by cutting your first straw at 20cm. Then the next straw will be cut 2cm shorter, at 18cm. Cut each straw 2cm shorter than the last until you have cut them all.

Line up your straws longest to shortest.

Sticky tape them together in that pan flute formation.

You should blow across the top of the straws to get a sound. What types of sounds can you get from different lengths of straws?