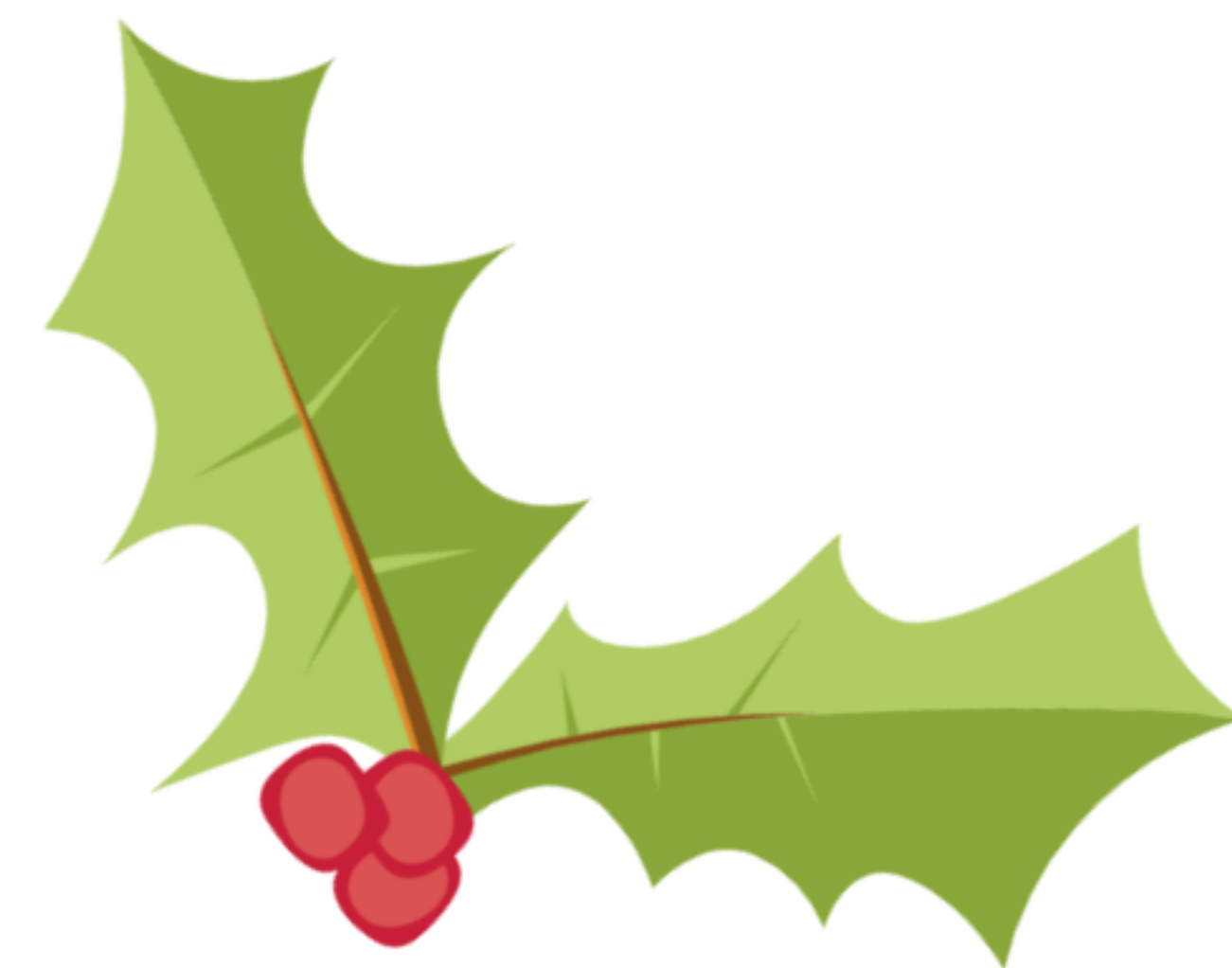
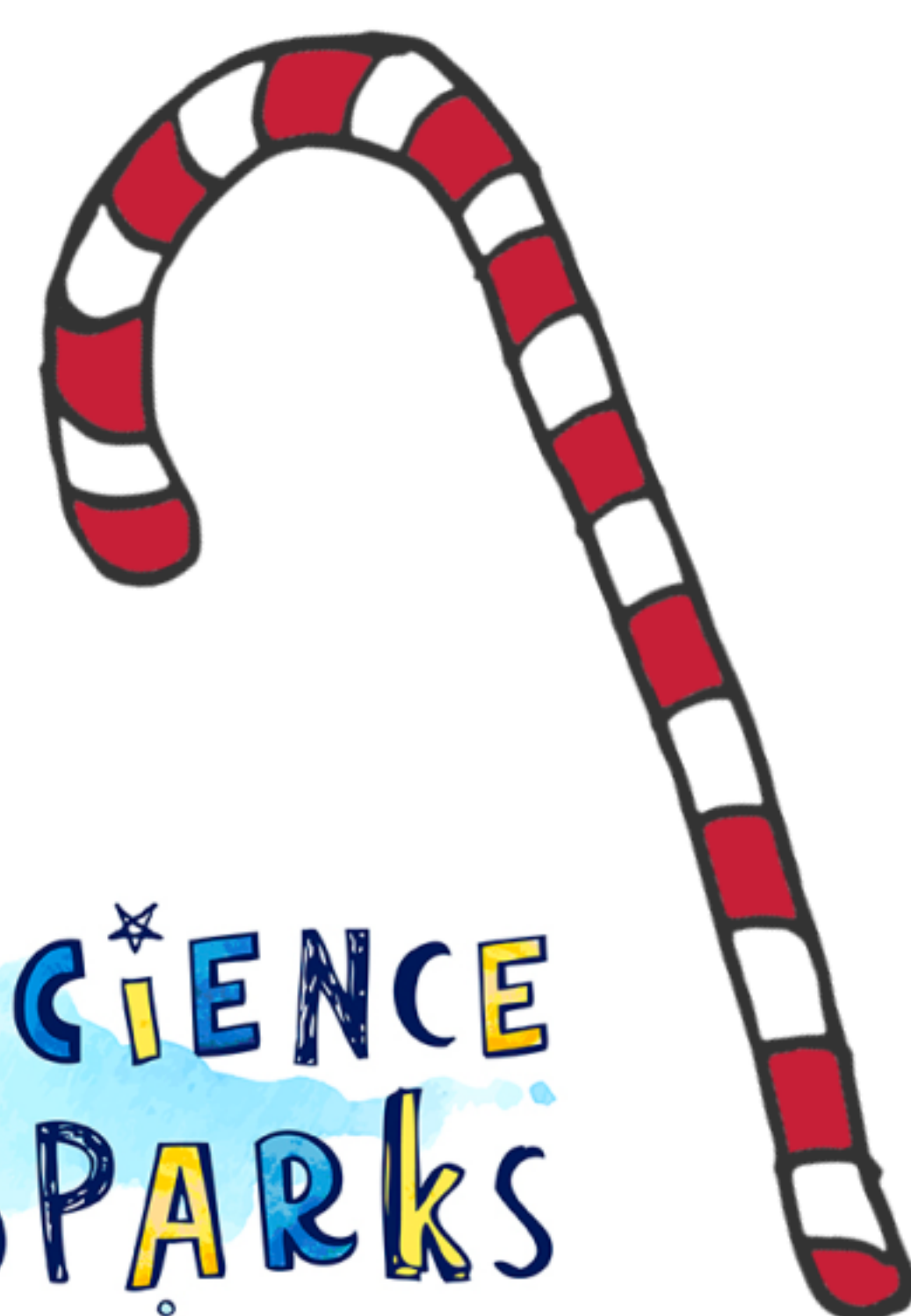




ELF



EXPERIMENTS



BUILD AN ELF RAFT



You'll need:

Lolly sticks

Tape

Corks

Card/foil etc



Instructions

The elves need to cross a river,
can you design and build a raft
that won't sink?

Once you've built your raft
test it in a bowl of water.
Can it hold the weight of a
small elf or present
without sinking?

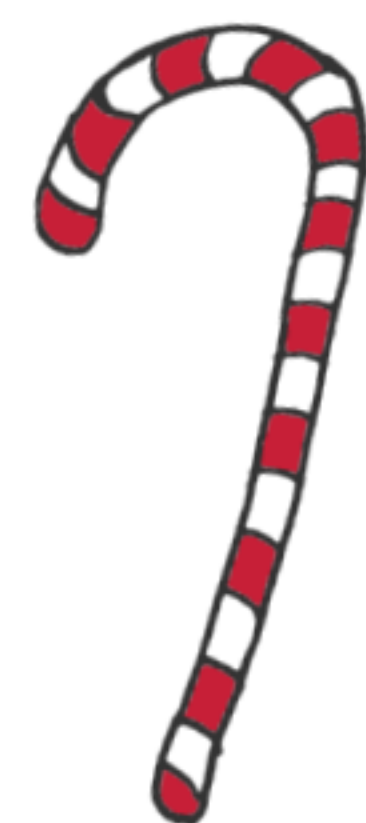


ELF NOTES





ELF



FIREWORKS

You'll need

Vegetable or sunflower oil

Warm water

Food colouring

Glass or jar



Instructions

Fill the glass or jar about 3/4 full of warm water.

Carefully pour a small layer of oil onto the surface of the water and leave to settle. Note that oil and water don't mix!

Carefully drop small amounts of food colouring into the jar. You should see the food colouring drop through the oil into the water leaving colourful trails behind.

Why does it work?

Food colouring is more dense than water so sinks to the bottom of the glass leaving trails (resembling fireworks) as some of the colour diffuses into the water.

The water based food colouring forms a bead shape in the oil as oil is hydrophobic (water hating).

Oil molecules are more attracted to each other than water molecules so repel the food colouring . Surface tension between water molecules pulls them into the coloured spheres you see in the oil.

ELF NOTES



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OPTICAL ELF ILLUSIONS

You'll need

White cardboard
Pencils or colouring pens
Straw or pencil
Scissors
Glue/tape



Instructions

Cut out two squares from a sheet of white cardboard.

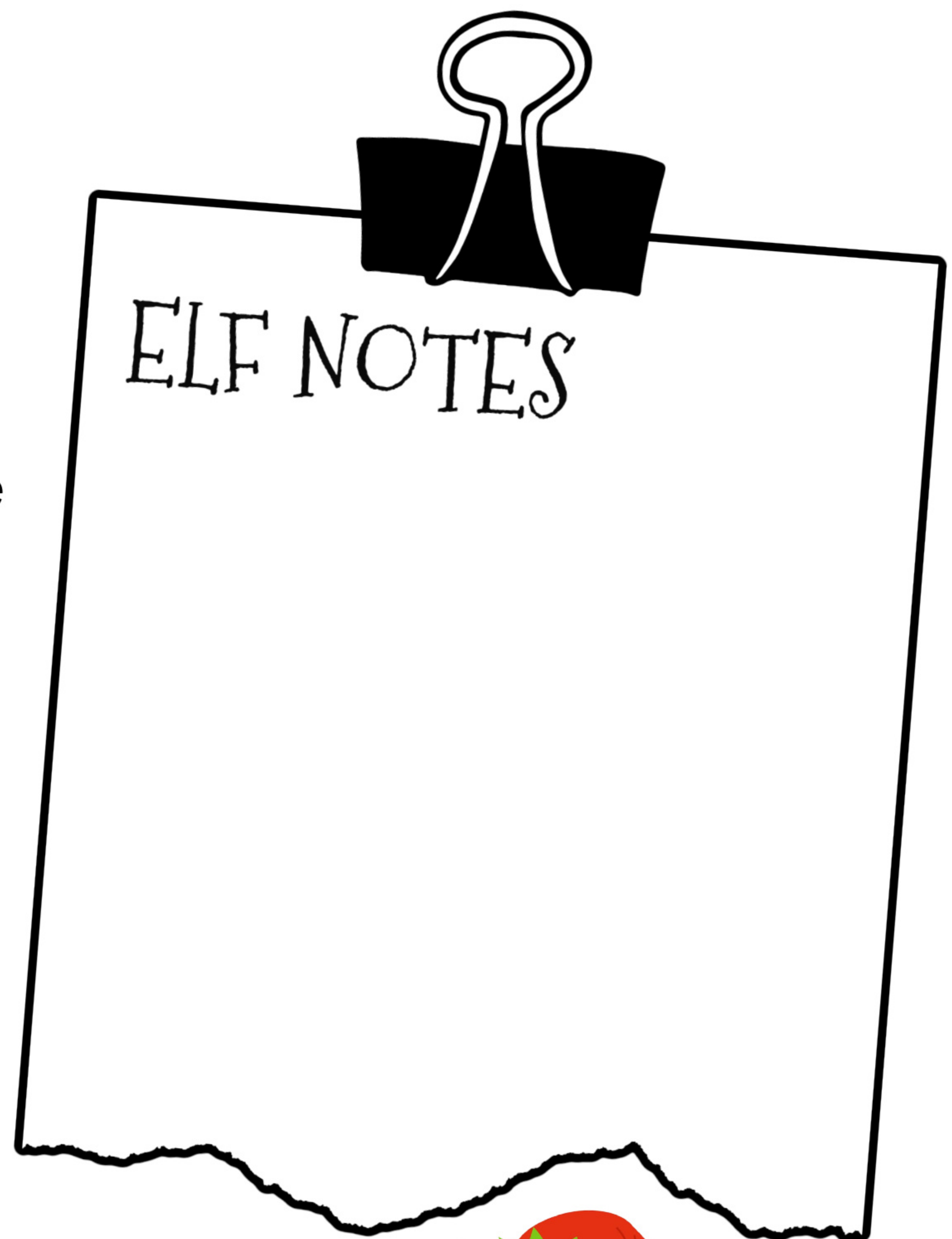
Draw a Christmas tree on one piece of card and a decorations for the tree on the other piece.

Glue or sellotape a pencil or straw in between the two pictures.

Hold the pencil between your palms and rub your hands to make the picture spin around.

The decorations should look like they are on the tree as it spins.

As the paper spins, your eyes see one image after the other so quickly that your brain can't separate them. This means you see the decorations on the tree!



EXPANDING?

ELF SWEETS

You'll need

Gummy sweets

Water

Shallow tray or plate



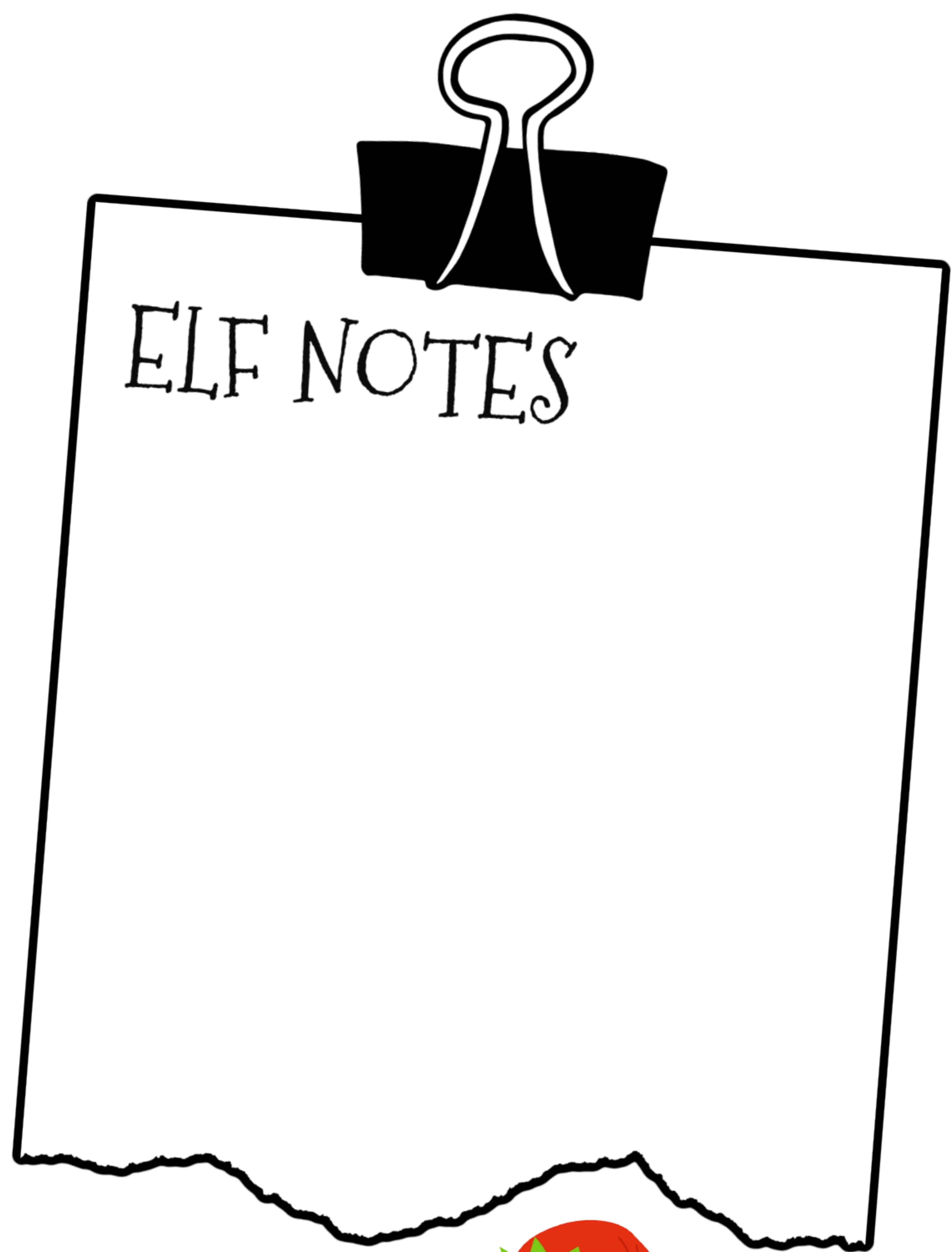
Instructions

Place gummy sweets in the centre of a shallow tray or plate.

Carefully pour water over the top.

After a few hours the sweets should look much bigger.

The gummy sweets absorb the water and expand! They may be bigger but probably don't taste as good as the flavour is diluted.



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JUMPING CANDY CANES

You'll need:

Balloon

Hair or wool jumper

Tissue paper - cut into candy cane shapes



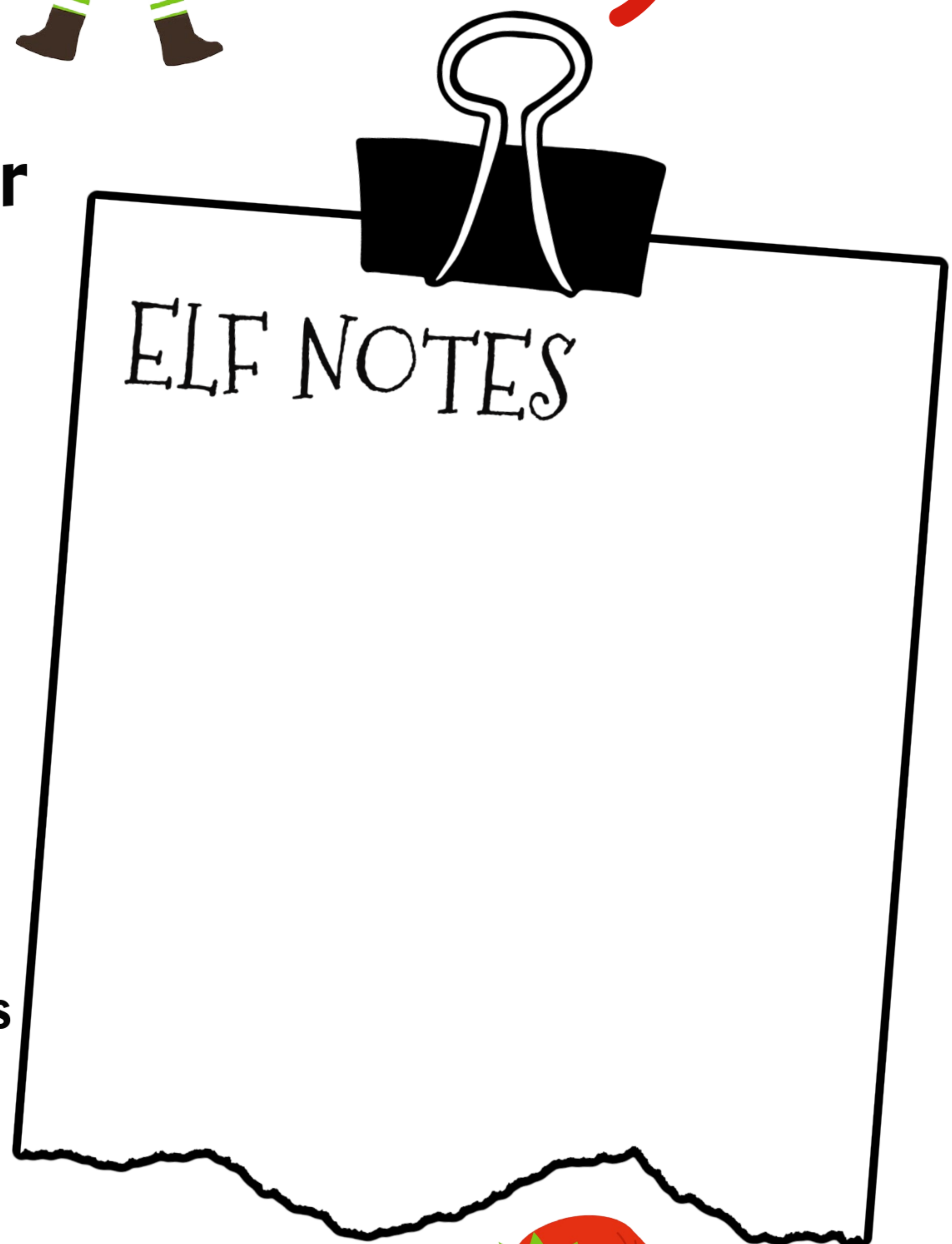
Instructions

Rub the balloon on your hair or jumper.

Hold the balloon over the tissue paper candy canes and watch as they jump up to the balloon.

Why does it work?

Rubbing the balloon on a wool jumper or hair charges it with static electricity. This attracts the tissue paper making it jump up to the balloon where it will stay until the charge wears off.



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COLOURFUL? SKITTLES

You'll need

Skittles

White plate

Warm water



Instructions

Place the skittles around the edge of the plate.

Carefully pour warm water over the top.

Watch as the colours spread through the water!

ELF NOTES

Skittles are coated in food colouring and sugar. When you pour water over the skittles the coloured coating dissolves and diffuses through the water.



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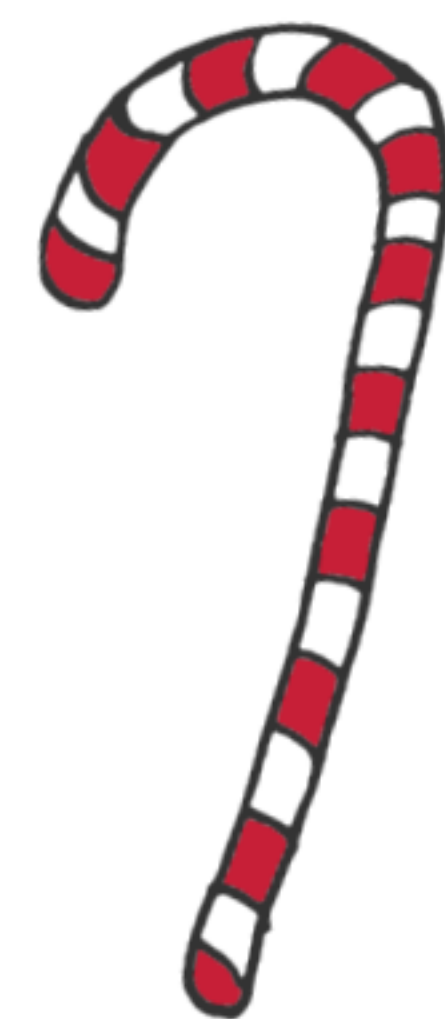
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ELF HOT CHOCOLATE

You'll need:

Hot Chocolate
Candy Canes
Marshmallows
Timer



Instructions

Can you time how long it takes the marshmallows to melt in your hot chocolate?

Try again with cold milk? What happens this time?

What happens to the candy cane if you use it as a stirrer in the warm drink?

ELF NOTES



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FROST ON A CAN

You'll need

A clean empty can
Ice
Water
Salt
Spoon



Instructions

Fill the tin can with ice.

Add water until it reaches the top.

Drop in about 3 tablespoons of salt.

Wait and watch the frost form. If it doesn't work, add more salt and ice.

Why does it work?

Initially the temperature of the icy water in the can will be around the freezing point of water 0°C . However, for frost to form it needs to be even colder. Salt lowers the freezing point of ice, making the ice melt. To do this it draws heat from the surroundings (in this case the tin can). The salt reduces the temperature on the surface of the can to below 0°C which makes the water vapour in the air condense and freeze on the surface!!



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Name of elf _____



ELF EXPERIMENTS

Investigation _____

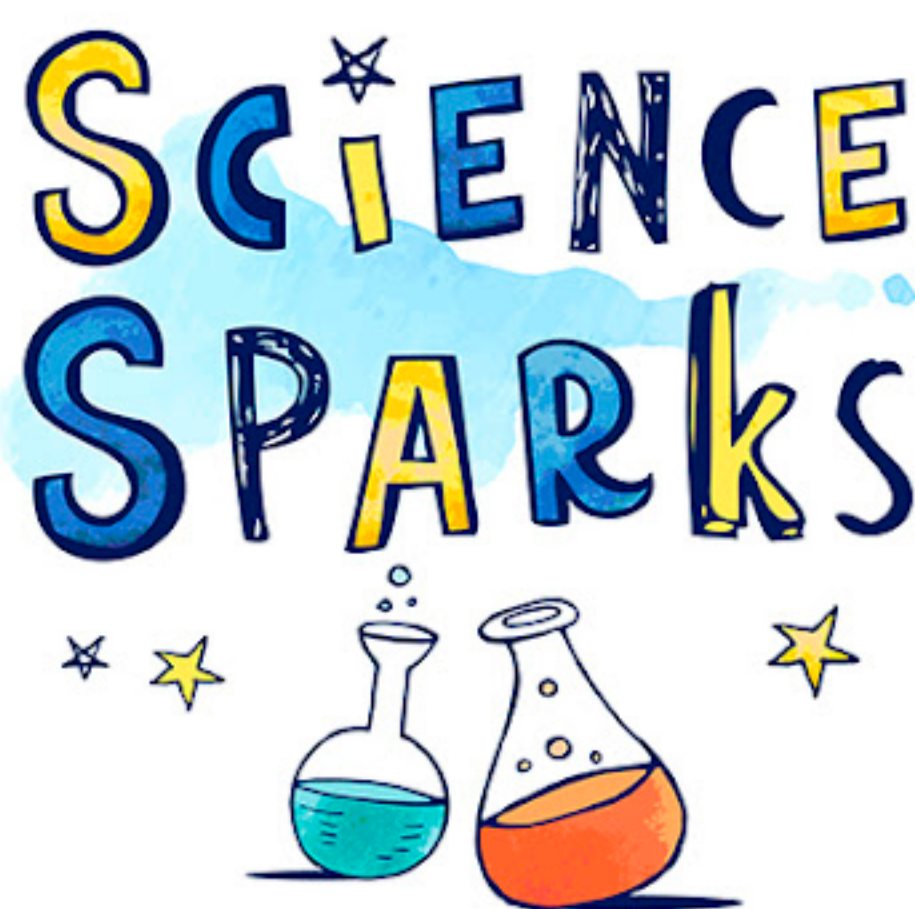
Hypothesis _____

Materials

Method

Results

Conclusion



Next time I will.....

