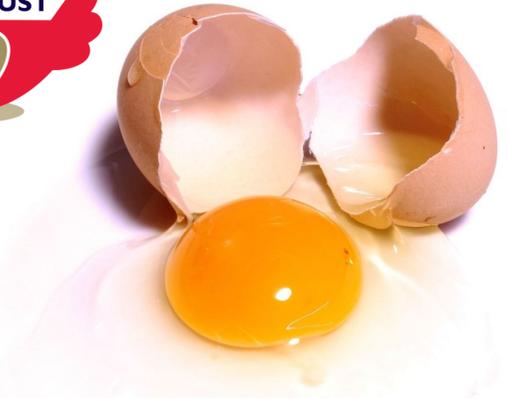


Eggy Experiments



Lab coats to the ready and
learn all about incredible eggs!

Notes for teachers/ parents:

Chicken eggs are great for experiments as they are easily available and very versatile.

Eggs are full of proteins. These change when you heat them, beat them, or mix them with other ingredients, meaning eggs can be used to display a variety of chemical reactions.

Eggs also can act as binding agents. As their proteins set, eggs bind ingredients together giving strength and stability, which is why they are used as an ingredient in so many foods! They can even help trap air, making foods like cakes and meringues light and fluffy.

Egg shells are mostly made of calcium carbonate. This means that they can be used in experiments to represent different carbon form, including rocks and even teeth!



Your task:

Take part in a range of egg-citing experiments! For all of the following experiments, we have made sure you can still eat the contents of the egg, to help prevent food waste.

You will need:

- BHWT Egg Experiments Sheets
- Materials for your Egg Experiments

IMPORTANT: Do not handle or eat eggs if you are allergic to them.



Taking this further:

There are lots more egg-based experiments that you can take part in. Just search 'egg experiments for kids' online for some inspiration!

Eggy Experiments



Eggshell Geodes

A natural geode forms when crystals deposit inside another mineral. Your mineral is the calcium carbonate of an egg shell. Geodes often take millions of years to form, but with this experiment, you can make your own in just a few days!

You will need:

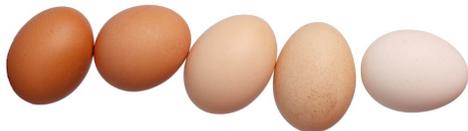
free-range eggs

salt
(sea salt or table salt)

food colouring

hot water

a small bowl
(that an egg can fit in)



Step One

Crack your eggs as close to the top as you can. Empty the egg and set the contents of the egg aside so you can eat the contents later.

Step Two

Carefully clean the inside of the egg and remove the membrane on the inside of the egg then leave to dry.

Step Three

Add your salt to hot water a bit at a time, stirring until it disappears. Keep adding salt until the water is super-saturated (this is when no more salt will dissolve).

Remember to ask an adult to help you.

Step Four

Add a couple of drops of food colouring to the water.

Step Five

Place your egg shell in the bowl and pour the colourful solution into the egg. Don't worry if it overflows!

Step Six

Place your egg shell in a warm place until the water has evaporated. Crystals will form inside the eggshells as the water evaporates.



Try making different colours!

If you try both table and sea salt, is there a difference in the crystal structure?

Eggy Experiments



Square Eggs

When you cook an egg, the proteins in the egg change to form a solid. This solid is mouldable like clay when it is hot, and becomes even more solid and rubbery when cooled. Find out what happens when you mould an egg before it cools down!

You will need:

free-range eggs

cardboard box

e.g. cereal box

elastic bands

scissors

ruler

tape

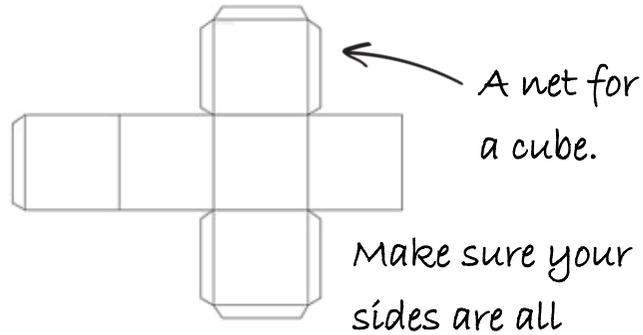
pan of boiling water

slotted spoon

paper towels

Step One

Create a net for a small box out of your cardboard. Each side of the box should be 4cm tall and 4cm wide.



Step Two

Tape together your net to make a small box. Remember to leave an open lid!

Step Three

Boil your egg for 10 minutes. Once it's done, remove from the pan with a slotted spoon. Remember to ask an adult to help you.

Step Four

While the egg is still warm, use the paper towels to help you remove the shell, being careful not to damage the egg inside.

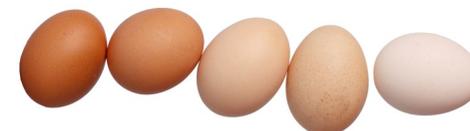
The eggs will be hot! Be careful when handling them.

Step Five

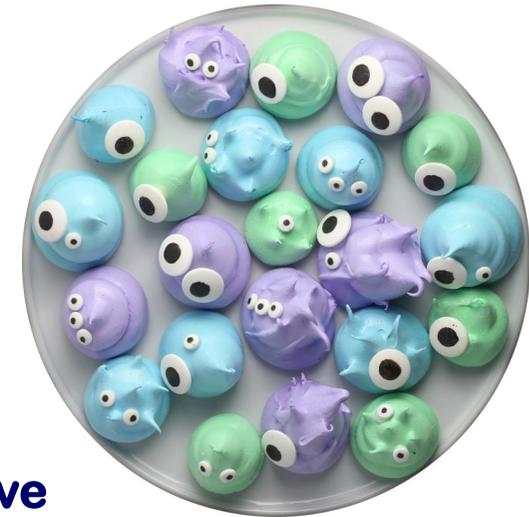
Place your peeled egg into your small box, pointy end down. Secure the lid shut with elastic bands. Leave in the fridge.

Step Six

After two hours, take the box out of the fridge. Remove egg from the box and it should be shaped like a cube!



Eggy Experiments



Making Monster Meringue

When you whisk an egg white, you trap lots of air bubbles between the proteins. This causes your egg white to fluff up into meringue. Make sure you don't get any yolk in your meringue mix though! The fats in the yolk can cause the structure of the white to change and make it harder to trap those essential air bubbles!

You will need:

3 free-range eggs

150g caster sugar

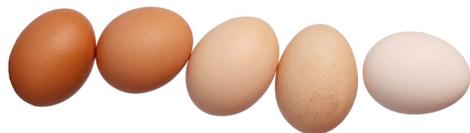
a large baking bowl

electric whisk

baking tray

food colouring

decorations (optional)



Step One

Pre-heat the oven to 110 °C , Gas Mark 1.

Step Two

Separate your eggs whites and yolks very carefully. You can keep the yolks to cook with later.

Step Three

Put the egg whites in a bowl and whisk slowly at first then faster. Whisk them until they are stiff and cloud like.

Step Four

Add the caster sugar, a spoon at a time whilst still whisking. Continue until the sugar is all added.

Step Five

Add a few drops of food colouring. If you want different colours, make sure you separate your egg whites out first.

Step Six

Spoon the meringues onto a baking tray lined with baking paper, and place them in the oven.

Remember to ask an adult to help you.

Step Seven

Bake for around 25-30 minutes. The meringues are ready when they're crispy on top and easily come off the baking paper.

This will be hot! Be careful when handling.

Step Eight

Once cooled, decorate to make them look like monsters and enjoy!