

# Challenge: Disappearing Egg Shell!

Investigating is a great way to find out more about a subject. Scientists investigate all the time – why does something happen? How does it happen? What affects how fast or slow the change happens? It's good to ask questions as this will help you learn more. It's also good to try and think of the answer beforehand – try and come up with an explanation if you can, or make a prediction about what might happen and why. This makes a great science experiment, so here's a challenge to get you thinking (and speaking) like a scientist – the Great Disappearing Egg Shell Experiment! You could record your predictions as well as your observations. Ask an adult to help you – they could be your assistant!

- You will need:**
- An egg
  - White vinegar
  - Glass jar
  - Pencil and paper (optional)

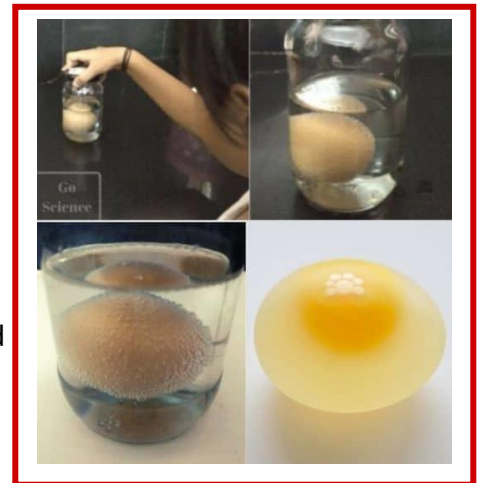
**Step 1:** Take your egg and gently put it in a glass jar so the shell doesn't crack, then put some white vinegar in the jar until the egg is covered (prediction 1: will your egg float or sink? Talk to your adult about why you think this. What did they predict? Who was right?)

**Step 2:** Leave your egg in the glass for a while (prediction 2: What do you think will happen?) Keep watching the egg and you should start to see tiny bubbles forming on the egg's shell. (Did you guess this would happen?) This is due to the release of CO<sub>2</sub> (carbon dioxide). This is similar to that chemical reaction which happens when you open a bottle or can of fizzy drink.

**Step 3:** Put the lid on the jar and keep it somewhere safe for 7 days. Keep checking on your egg and recording the changes you can see (prediction 3: what do you think will happen? What did your adult think would happen?) Something called 'osmosis' takes place making the egg start to swell and you should see the colour of the eggshell fades from brown. A scummy layer is formed on the surface and it is good to change the vinegar solution when you see this happening (but don't worry if you don't – it will still work)

**Step 4:** It's time to empty the vinegar from the jar and take the egg out. Wash off any remaining eggshell. You should be able to see the egg without eggshell. It should now be soft like a sponge and light in weight and it's probably swollen a little too. If the remaining eggshell is hard to remove, just add some fresh vinegar and wait a few more days. The soft egg should now feel rubbery to touch and you should be able to see through the egg which still contains the yolk. Why do you think this happened? Does your adult know why?

**Step 5:** The acid reacts with the shell and "eats" away at it. The shell is made up of calcium carbonate and this gets dissolved by the acid (vinegar). The egg also swells up, because some of the liquid seeps inside. Clever eh? Prediction 4: What do you think would happen if you added food colouring to the vinegar? Why not give it a try?



## Which skills will I be developing?

