

## ACID SHELLS

(Teacher's Guide)

Be a Scientist: explore the effect of acid on egg shells!

**AIM:** This experiment looks at the effects of acid on egg shells and could be used to discuss environmental conditions and the effects of acidic water on animal survival

### Step 1 – Eggy experiment

Put one egg into each cup. Cover one egg with vinegar, cover one with water and leave the third egg dry as a control. Label the cups, cover with cling film and make observation notes.

*You should see bubbles forming on the shell in the vinegar. These are **carbon dioxide** bubbles produced in the chemical reaction between the shell and vinegar.*

### Step 2 – Study the results

After 24 hours look back and make more observations. What has happened? *The shell in vinegar has begun to disappear – it will be whiter and powdery.* The egg in water should look completely normal as shell doesn't react with water.

### Step 3 – More vinegar...

Carefully pour out the vinegar and add another cup of fresh vinegar to the egg. Leave for another 24 hours and see what happens! *The egg will become shell-less and rubbery!* You could drop the egg from increasing heights to see how robust it is. Do this in a washing up bowl to avoid too much mess! Measure and record your results!

### Things to think about afterwards...

What do you think this has to do with ocean animals? One impact of climate change is **ocean acidification**. Obviously the vinegar is a very concentrated acid so a bit exaggerated but something similar is happening to the oceans. One of the largest impacts is on coral reefs. Why do you think this is? Coral is very sensitive and incredibly important to the ocean ecosystem. What can we do?

### Extension activities:

Learn about ocean ecosystems- They are amazing!

### What you'll need:

- 3 eggs
- 2 cups of vinegar
- 1 cup of water
- 3 cups (clear)
- Cling film



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