

# The Power of Chemicals

SCIENCE WEEK

9-16 NOVEMBER 2014

Try these activities to demonstrate the power of chemicals and their reactions in nature.

THE POWER OF SCIENCE

## THE BOUNCING EGG AND THE BENDY BONE

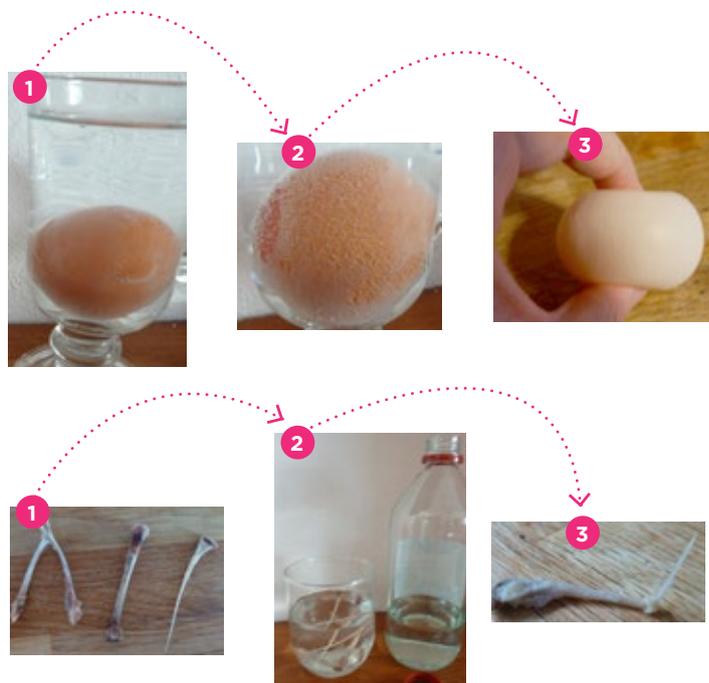
### YOU WILL NEED

Clear vinegar, glass containers, chicken's eggs, chicken bones ("left overs"), gloves (optional).

### BASIC INSTRUCTIONS

*Feel free to experiment!*

1. Place each egg in a glass container.
2. Place the chicken bones in a glass container.
3. Cover with clear vinegar.
4. Observe over the next 30 minutes.
5. Leave aside for a day, or up to a week if time allows.
6. Observe and take note of any changes.
7. Remove the egg from the glass and rinse off the vinegar.
8. Test the texture of the egg - press the surface of the egg.
9. VERY carefully bounce the "naked" egg on the worktop surface.
10. Remove the bones and twist them about to test their flexibility.
11. See if you can tie a knot in the needle bone or the wishbone.
12. (Reminder - wash your hands really well after handling cooked chicken bones and raw eggs).



### INVESTIGATE

- Collect some snail shells (empty of course) and find out if acid has an effect on them.
- Does acid have the same effect on the egg shell after an egg has been boiled?

## THE BOUNCING EGG AND THE BENDY BONE CONTINUED

### WHAT IS HAPPENING?

Eggshell is made from calcium (so is chalk). Vinegar is an acid. The acid removes the calcium, releasing carbon dioxide (that was the bubbles you saw gather on the shell). The shell is completely dissolved into the liquid, leaving the strong elastic membrane of the giant egg cell exposed.

In the case of the bone, the strong materials are removed by the acid. The flexible protein part of the bone is left behind, so we can bend it.

### EXPLORE MORE...

Read about tiny “zombie worms” who live deep in the ocean, whose diet is bones of dead whales, dissolved by acid in the worm’s mouth <http://ocean.si.edu/ocean-news/zombie-worms-crave-bone>

