



3 Show them how to dip the pH test paper into the liquid and watch it change colour (they might have to wipe the excess liquid off to see the colour properly!). Encourage them to compare the test-paper colour to their chart to see

what the pH number is. Below 7 and the liquid is acidic; above 7 and it's an alkali. Once everyone has finished, compare your findings.

The science bit: the paper reacts with the liquid in different ways,

depending on whether it's an acid or alkali. Acids include things like lemon juice or the liquid in car batteries. Acidic food can cause our teeth to erode, if we don't neutralise it (by drinking some milk or chewing gum, for example).

Experiment 2

DIY solar system

What you need

- a map of the solar system
- nine balls or balloons of different sizes
- access to the internet
- a large outside space
- a tape measure
- chalk

What you do

1 Gather the Scientists around the map of the solar system and make sure everyone is familiar with all the planets (you could refer back to pages 12 and 13 of *Lab Book*.) Put your balls and/or balloons in size order, then assign the balls/balloons the names of planets from smallest to

largest: Mercury, Mars, Venus, Earth, Neptune, Uranus, Saturn and Jupiter. Finally, call the largest ball/balloon the Sun. Go on the internet to find out how quickly each planet goes around the Sun (make sure you supervise internet access).

2 Ask each Scientist to choose a planet or Sun. Put the Sun in the middle of your outside space and draw eight concentric circles around the Sun on the floor with the chalk. Station the other planets in the order of their orbits, and then ask the Scientists to orbit the sun according to how quickly their planet goes. They should all go anticlockwise.

3 For a few seconds, encourage the Scientists to turn around as they orbit, to represent the spin of the planets. The Sun and all the planets except Venus and Uranus should go anticlockwise. Venus and Uranus should go clockwise. (Don't do this for long, as the Scientists will get dizzy and may fall over!)

4 You could also explore the comparative distances the planets are from the Sun. Find a chart of distances online and use a scale of 1 AU to 1 m. AU stands for Astronomical Unit and is the distance the Earth is from the Sun. Your Earth would be 1 m from your Sun; Neptune would be 30 m away!

The science bit: the solar system was formed when a giant molecular cloud collapsed. As it collapsed the cloud started to rotate faster and faster, flattening into a disc, with everything spinning around a proto-star. Gravity gathered dust and gas together into larger objects – the planets. There may have been lots of planets, but they got destroyed or merged together into larger bodies.

