



# Seaside's Science Spot

Try some of these science experiments, projects or activities at home this half-term. The aim of these activities is to allow you and your child/children to engage with fun, but simple activities at home that will promote their excitement and interest in this subject.

Each half-term we will update Seaside's Science Spot with a range of different activities to try at home. Most of these activities will require adult supervision, but this is an excellent opportunity for you to engage with your child's science learning beyond the classroom. We have included some information on the science behind each activity that you could also discuss.

We would love to see some photos or short videos of the science learning you have been getting involved in at home so we can share this on the school website. Please send any photos or videos to:

[schooladmin@seasideprimary.co.uk](mailto:schooladmin@seasideprimary.co.uk) – FAO Mr Nicholas

**Please note, by sending photos or videos to the above address, you are giving your permission for the school to use these on the school website.**

## Activity 1: Towering Success

The idea is to build a stable structure- but which shapes are best?

### You will need:

- A box of cocktail sticks
- Cheese cubes or marshmallows or jelly sweets- or a combination.



### Method for squares and cubes:

1. Start with 4 cocktail sticks and 4 sweets. Poke the cocktail sticks into the sweets to make a square with a sweet at each corner.
2. Poke another cocktail stick into the top of each sweet. Put a sweet on the top of each cocktail stick. Connect the sweets with sticks to make a cube. This takes 8 sweets and 12 cocktail sticks.

### Method for triangles and pyramids:

1. Start with 3 cocktail sticks and 3 sweets. Poke the cocktail sticks into the sweets to make a triangle.
2. Poke another cocktail stick into the top of each sweet. Bend those 3 sticks in towards the centre. Poke all 3 sticks into one sweet to make a 3-sided pyramid.

### What's the Science?

Structures remain standing because some parts are being pulled or stretched and other parts are being pushed or squashed.

### What's the big deal about triangles?

Well, squares collapse easily under compression. Four cocktail sticks joined in a square tend to collapse by giving way at their joints, their weakest points. A square can fold into a diamond – but it's different for triangles. The only way to change the angles of the triangle is by shortening one of the sides. So to make the triangle collapse you would have to push hard enough to break one of the cocktail sticks

## Activity 2: A troubled bubble?

### You will need:

- A small empty water bottle
- A bendy drinking straw
- Scissors
- Bubble solution
- Blu tack
- Baking powder or Bicarbonate of Soda
- Vinegar
- Teaspoon



### Method:

1. Cut the end off the straw so that it measures about 14cm.
2. Pull to extend the 'bendy bit', and angle the short end of the straw downwards.
3. Using scissors make several short cuts in the short end of the straw.
4. Wrap blu tak around the straw and place over the neck of the bottle.
5. Take the straw and blu tak off the bottle and leave to one side.
6. Dip the splayed end of the straw into the bubble solution.
7. Place 2 teaspoons of baking powder in the bottle.
8. Add a little vinegar and replace the blu tak and straw in the bottle quickly. Make sure there is a good seal.
9. A bubble should start to appear from the splayed end of the straw. If not, dip the end into the solution again.
10. As the bubble forms, blow gently to cause it to float away from the straw.

### What's the Science?

Baking powder and bicarbonate of soda produce carbon dioxide gas when mixed with an acid such as vinegar. This is a chemical reaction between an acid (vinegar) and a base (bicarbonate of soda).

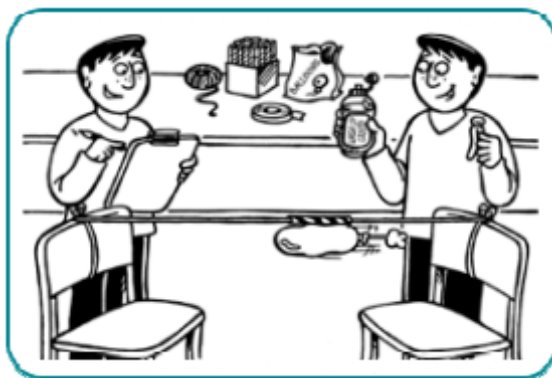
This means that the carbon dioxide inside your bubble is denser than air and the bubbles of carbon dioxide gas will fall rapidly.

Bubbles formed by blowing through a bubble blower also fall eventually, because our exhaled air contains a higher proportion of carbon dioxide (around 4%) than our inhaled air (0.04%). The bubbles filled with pure carbon dioxide fall much faster.

## Activity 3: Balloon Rocket

### You will need:

- A drinking straw
- A long balloon
- About 2m of string
- A clothes peg or bulldog clip
- Washing up liquid
- Sticky tape
- Two chairs about 2m apart



### Method:

1. Blow up the balloon, fold the neck and put a peg or clip to stop the air coming out.
2. Thread the string through the drinking straw
3. Tie each end of the string to 2 chairs. Make sure the string is at least 30cm off the ground.
4. Pull the straw to one end of the tied string and stick the straw lengthways to the balloon using sticky tape.
5. Remove the peg or clip and watch your rocket zoom away!
6. Measure how far it goes and then repeat the activity but this time RUB A LITTLE WASHING UP LIQUID ON THE STRING FIRST. Notice any difference?

### What's the Science?

When the air from the balloon rushes out backwards it propels the rocket forwards. If the friction between the string and the straw is high then the rocket will only go a short distance. However, if the friction is low then the rocket will go much further.

The washing up liquid acts as a lubricant on the string, which lowers the friction and makes the rocket go further.