



# Seaside's Science Spot

Try some of these science investigations, 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: Green Pennies

### You will need:

- A saucer
- Some paper towels
- Vinegar
- 3-5 pennies

### Method:

1. Arrange the paper towels into a wad on your saucer.
2. Pour enough vinegar into the saucer to cover the paper towel.
3. Place the pennies on top of the wet paper towel and leave for a few hours.



### What's the Science?

Vinegar is an acid that has the chemical name of 'acetic acid'. Part of this acid combines with the copper of the pennies to form a green coating that is composed of copper acetate. Oxygen must be present for this chemical reaction to occur. Oxygen comes from the air, and this is why the tops of the coins turn green but the bottoms do not.

## Activity 2: Make your own thermometer

### You will need:

- An empty small plastic squeeze bottle
- A plastic straw
- Modelling clay
- Water
- Food colouring
- A marker pen



### Method:

1. Fill the empty plastic bottle one quarter full of water.
2. Add a few drops of food colouring.
3. Push a straw through the hole in the top of the bottle. Create a seal using clay or blutak.
4. Blow through the straw so that the water bubbles. If you hear a hissing sound, re-seal.
5. Blow bubbles through the water until it rises half way up the bottle.
6. Lift your bottle so that it is at eye level and make a mark on the outside of the bottle to show the level of water in the straw.
7. This mark shows the level of water in the straw at room temperature.
8. Now place the bottle in the fridge. What happens?
9. Place it somewhere warm. What happens?

### What's the Science?

The thermometer works because as the temperature rises, the air inside the bottle expands and pushes the water up the straw. At cooler temperatures, the air in the bottle contracts and the water drops.

Liquids take up less space when they are cold and more space when they are warm. In practice water would not be a good liquid to use, as it would freeze at temperatures below 0°C.

## Activity 3: Simply Nuts!

Q- What are the chances of picking out a Brazil nut when you plunge your hand into a jar of mixed nuts without looking?

A- Considerably better if you tap the jar on the table a few times first. But why?

You will need:

- A jar of mixed nuts
- A tabletop
- A hand!

Method:

1. Unscrew the lid of the jar and see which nuts are on the surface. There's sure to be at least one Brazil nut.
2. Push the Brazil nuts down below the surface.
3. Screw the lid back on and give it a gentle thump on the table a few times.
4. Now look inside again... How did that happen?



### What's the Science?

The Brazil nut(s) are larger than the other nuts in the jar. As you tap the jar the Brazils move upwards which allows the other smaller nuts to fall beneath it and take up the space it leaves. Since the Brazil nut is fairly smooth, the friction between it and the other nuts is low which makes it easier for other nuts to slip beneath it. As you continue to shake the jar the Brazil nut will gradually move upwards until it is finally sitting on the surface. Cunning eh?