

SCIENCE FUN AT HOME



Have some fun at home with these science activities from **Science Sparks** and the **Primary Science Teaching Trust**



BEFORE YOU START! Please read through this with an adult:

- * Make sure you have read the 'IMPORTANT NOTICE' on the back of this page.
- * If you have a space outside that you can use safely, then you can do the 'Try this outdoors' activity outside. Don't worry if not as you could still do it indoors.
- * Talk to your adult about sharing the science you have done and if they want to share on social media, please tag **@ScienceSparks** and **@pstt_whyhow** and use **#ScienceFromHome**

SINK OR SWIM?

1 TRY THIS INDOORS ...

Fill a large bowl or container with water. One at a time, put the different things you have chosen to test into the water and watch to see which of them floats and which of them sinks.

Put the orange in the water. Does it float or sink? What happens when you peel the orange and put it back into the water? Does the orange float or sink? What about the peel?

WHAT DO YOU NOTICE? Things to talk about ...

What are your ideas about why some things float and others sink? Can you predict which things will float or sink? Why does an orange float with its skin on, but sink with its skin peeled off? Do other fruit or vegetables float or sink? What happens if you take off the skin?

You will need

- * Large bowl or container
- * Water
- * Selection of things to test, e.g. small toy, pencil, coin, cork, elastic band, candle, empty plastic bottle ...
- * A small orange
- * Paper, lollipop sticks, card, foil, sponge, playdough or plasticine
- * Lego pieces, coins or other small items



2

TRY THIS OUTDOORS ... MAKE A BOAT

Fill a large container with water. Make boats or rafts out of different materials, e.g. lollipop sticks, playdough, paper, sponge or aluminium foil. Float the boats in the water. Choose coins or pieces of lego and add these one at a time to each boat until the boat sinks. Count how many coins or lego pieces it took to sink each boat.

WHAT DO YOU NOTICE?

Things to talk about ...

Which material was best for making a boat? Why do you think this is? Which type of boat held the greatest number of coins/lego before it sank? Why does a ball of playdough or piece of foil sink, but will float when you make it into a boat? Why do big, heavy ships float?



3

WHAT IS THE SCIENCE?

Whether something floats or sinks depends on its density. If something has a lower density than water, it will float, and if it has a higher density than water it will sink. Density is how tightly packed the material inside an object is. Just because something is heavy does not necessarily mean it will sink. For example, a ship might be very heavy but if it is less dense than water, it will still float.

The orange peel has tiny air pockets in it which make the peel less dense than water, so it will float. The orange on without the peel is denser than water, and so it will sink. But when the peel is still attached to the orange it makes the orange less dense **overall**, so it will float.

4

MORE ACTIVITIES YOU COULD TRY

MAKE A SALT VOLCANO <https://wowscience.co.uk/resource/salt-volcano/>

MAKE A DENSITY JAR AND LEARN MORE ABOUT FLOATING LIQUIDS

<https://www.science-sparks.com/floating-and-density/>

MAKE A PAPER CLIP FLOAT ON WATER! <https://spark.iop.org/paperclip-afloat>

TAKE A SCIENCE SELFIE Maybe you could show other people what you have been doing?

IMPORTANT NOTICE: Science Sparks and The Primary Science Teaching Trust are not liable for the actions of activity of any person who uses the information in this resource or in any of the suggested further resources. Science Sparks and The Primary Science Teaching Trust assume no liability with regard to injuries or damage to property that may occur as a result of using the information and carrying out the practical activities contained in this resource or in any of the suggested further resources.

These activities are designed to be carried out by children working with a parent, guardian or other appropriate adult. The adult involved is fully responsible for ensuring that the activities are carried out safely.