









Home Science Challenges – AP2



Last term it was amazing to see the love for science grow across the school. To continue to inspire the curiosity of science, there are 6 more challenges for this term for the children to complete at home, should they wish to explore them.

The challenges consist of your child working their way through each experiment and bringing back this letter, ticked off to acknowledge that they have completed each. All children who **complete all 6 challenges** will be rewarded at the end of this term. Therefore, the challenges will need to be completed before the Easter Holidays. Last term we had an amazing amount of photo entries sent in and written experiments brought into school. It would be fantastic to see more of these this term. These entries can be sent into school via the office/class teachers and digital entries can be sent to the office email address, who will kindly pass these on.

I look forward to seeing and hearing all about the science experiments. Miss Cook

<p>1. Salt Crystals</p> 	<p>2. Floating and Sinking</p> <p>CAN YOU MAKE A LEMON SINK?</p> 	<p>3. Planting</p>  <p>This can be planting anything of your choice and helping it grow. If you require a bulb to plant, please ask at the school office for one.</p>
<p>4. Sundial</p> <p>MAKE A SUNDIAL</p> 	<p>5. Float a Boat (STEM challenge)</p> <p>FLOAT A BOAT STEM CHALLENGE</p> <p>CHALLENGE 1 Does it float?</p> <p>CHALLENGE 2 How many coins can the boat hold?</p> <p>CHALLENGE 3 How far can the boat travel in 10 seconds?</p> 	<p>6. Star Gazing</p>  <p>Can be completed at home or on Mr Bates' Star Gazing evening. We are hoping to reschedule a date soon.</p>

Instructions to help you with some of the challenges:

1. Salt Crystals

You will need: table salt, jug or bowl, 500ml of warm water, spoon, plate and food colouring (optional)

- Put about 500ml of warm water into the jug.
- Stir in a large spoonful of salt and stir until it is all dissolved (when you can't see or feel the grains any more)
- Keep stirring in salt a spoon at a time, until you reach the point where no more salt will dissolve (we call this a **saturated solution**).
- Pour a small amount of the salty mixture onto a flat bowl or plate and leave somewhere warm. Outside in the sun is ideal. After a few days you should see crystals appear.

2. Floating and sinking experiment

You will need: large bowl of water, objects to test (anything you like, but good to pick some solid and some hollow objects)

- Fill the bowl/ container/ sink about $\frac{3}{4}$ full of water.
- Gently place the objects on the water; some objects will float when you gently put them on the water but sink when you drop them.
- Can you predict which objects will float and which will sink? Can you design a table for recording your results?

4. Create a sundial

You will need: a sunny spot, pen or chalk, straw or stick, plasticine (or something similar)

- A **sundial** measures time by the position of the sun and usually has markings for each hour of sunlight. **Sundials** have something in the centre which casts a shadow over the markings showing what the time is. There are lots of ways to make a simple sundial, you can draw around your shadow from the same central point at different times throughout the day, use stones or even just a simple straw or stick.

5. Float a boat

You will need: recycling / art materials of your choice.

Choose a challenge, design and build your boat and then start testing!

- BOAT STEM CHALLENGE 1:** Does the boat float? Fill a container of water and test to see if the boats float. If they do not float, try adding corks or long balloons to the bottle or change the shape.
- BOAT CHALLENGE 2:** How many coins/small figures can the boat hold? A simple twist to this challenge is to add the coins to one end then all in the middle and then spread them out.
- BOAT CHALLENGE 3:** How long does the boat take to cover a set distance?

6. Star Gazing

- Take a look at the stars, planets and constellations in the night's sky. What can you see? Optional use of telescopes, binoculars or Night Sky phone or iPad apps to aid your enjoyment of the stars and planets. Can you draw what you saw in the night's sky?

Please note this website can help you during most of the experiments: <https://www.science-sparks.com/category/science-experiments-for-kids/>