










Home Science Challenges

October-December

To encourage and nurture the curiosity of science, we are providing a range of science experiments that the children can choose to carry out at home, with an adult, over the next half term. All your child will need to do, is work their way through each experiment and bring back the letter, ticked off to acknowledge that they have completed each. Those who complete the challenges will then be rewarded with a non-uniform day at the end of this term. Should the children like to share their accomplishments in the form of photographs or written up experiments, please send these into Miss Cook.

<p>1. Bake a cake</p> 	<p>2. Water Walking</p> 	<p>3. Pencil through a bag of water</p> 
<p>4. Instant ice</p> 	<p>5. Lava lamp</p> 	<p>6. Skittle patterns</p> 
<p>7. Balloon powered car</p> 	<p>8. Grow an avocado tree</p> 	<p>9. Experiment of your choice</p> 

Instructions to help you with some of the challenges:

2. Water Walking

- You will need: 6 containers of water (3 with clear water, 1 with red food colouring, 1 with blue colouring, and 1 with yellow colouring).
- Arrange them in a circle, alternating coloured and clear containers, and make bridges between the containers with folded paper towels.
- Watch the coloured water "walk" over the bridges and into the clear containers, mixing colours.

3. Pencil through a bag of water

- You will need: a bag of water and sharpened pencils.
- Pierce a bag of water with a sharpened pencil, you would think the water would all leak out. In fact, if you do it right, the polymers of the bag's plastic will re-seal around the pencil. See how many pencils you can pierce into the bag!

4. Instant ice

- Chill water in the freezer until it's almost frozen, then pour it over ice placed on an overturned ceramic bowl.
- Watch the transformation between the states of matter, and how ice crystals are formed.

5. Lava Lamp

- You will need: oil and water with food colouring.
- Pour them in together, however do not mix them and watch what happens.

6. Skittle Patterns

- You will need skittles and hot/warm water - do this with an adult.
- Set Skittles into a shallow bowl of water, and see how the colours swirl. Challenge yourself to create a pattern with the skittles.

7. Balloon Powered Car

- You will need: household recycled items, balloon, tape, straw and an empty juice carton.
- This project focuses mostly on the engineering side of STEM - create the car and attached the balloon to the top.
- Inflate the balloon through the straw and watch it go!

8. Grow an avocado tree

- You will need: avocado, tooth picks and glass of water.
- Peel the seed and suspend it over water with toothpicks.
- Monitor the changes and growth over time.