



St. John's Catholic School Weekly Home Learning Project



**We would love to see photographs of you work so please email your class teachers!
You might win a Star of the Week prize next week!**

The focus for this week is **SCIENCE AT HOME**

Discovery Questions

I wonder if...

I wonder how...

I wonder why...

I wonder where...

I wonder what...



What do you think will happen?



Explain what happened.



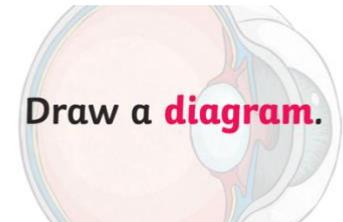
Write down your **measurements**
and **observations** carefully.

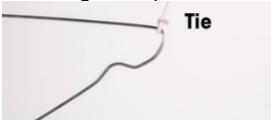


What will you **change** each time?



Draw a **diagram**.



Class	Early Years	KS 1	Lower KS2. Years 3 and 4	Upper KS2 Years 5 and 6
<p>To start why not try a virtual tour of the Science Museum here. Have you been to Wonderlab in the Science Museum? Take a look at Wonderlab highlights here.</p>				
<p>Activity 1</p> <p>Science Fun at Home with the Science Museum</p>	<p>How do you bring objects to life?</p> <p style="text-align: center;">SEE LINK WONDER</p>  <p>This short animation from the Science Museum introduces a tool to spark discussion and help young children develop their observational skills.</p> <p><u>Go into a room.</u> What do you see? Point to one thing. Can you look at this from different angles? Talk about colour, shape, size, material.</p> <p><u>Go outside on a walk or in the garden/ on the balcony.</u> What do you see? Point to one thing. Can you look at this from different angles? Talk about colour, shape, size, material.</p> <p>Do not underestimate the importance of talking with your child. You do not need to record anything, make anything – just let your child take the lead. What do they notice?</p>	<p>Ear Gongs – discovering that sound is made by vibrating objects.</p> <p>You need: scissors, string, a metal coat hanger or spoon.</p>  <p>Wrap the other end of string around your finger.</p>  <p>Put your fingers in your ears Boing!</p>  <p>Lean forward so the coat hanger hangs down without resting on anything. Then knock it against a chair or table, to make it vibrate.</p> <p>What do you hear? Swap the coat hanger for items made of different materials and compare sounds.</p> <p>Here is an information leaflet with more detail, including the scientific background for adults to help your child understand that sounds are made from vibrating objects.</p>	<p>Instant Ice-cream – discovering how to create ice crystals</p> <p>You need: a small and larger freezer bag, milk (can be flavoured), 2 trays of ice cubes, salt and gloves.</p>  <p>Pour ½ cup milk into small bag and seal tight. Put ice into the large bag, then add 6 tablespoons of salt. <i>The salt lowers the freezing point of the ice, and you will see the ice begin to melt.</i> Place the small zip-lock bag inside the large bag with the ice and salt, and seal the large bag.</p>  <p>Put on gloves – shake and squeeze the bag for 5 minutes..... enjoy your ice cream!</p> <p>Here is an information leaflet with more detail, including the scientific background for adults to help your child understand about the freezing point.</p>	<p>Spaghetti structures</p> <p>You need: Long spaghetti, marshmallows</p>  <p>Push a piece of spaghetti deep inside a marshmallow.</p>  <p>Keep adding spaghetti and marshmallows to build a structure however you want. But remember that triangle shapes are very strong. Test your structure's strength by balancing an object on top. Experiment with different shapes.</p> <p>Here is an information leaflet with more detail, including the scientific background to help you understand more about structures and gravity.</p>

Have a look at these experiments you can do in the Kitchen. **Children – always ask a parent to help you find what you need!**
 If you don't have what is needed – do look at the experiments for other year groups as they can work for all year groups. The scientific explanation of WHY may be more difficult to understand, but it is about having fun and wondering WHY things happen.

Everyone will want to try the Early Years Skittles investigation!

<p>Activity 2</p> <p>Science in the Kitchen</p>	<p>Skittles rainbow experiment</p> <p>You need: 1 pack of Skittles, 1/4 cup warm water, white plate</p> <p>Activity: Arrange the Skittles in a single row, making a coloured pattern around the edge of the plate. Pour over enough warm water to cover all the Skittles and the plate itself. Watch and wait as a rainbow appears on the plate, the colours will move towards the middle and create a whirl of colour.</p> <p>Colourful milk swirl experiment</p> <p>You need: 1 cup full-cream milk, 4 different food colourings, Washing up liquid, bowl</p> <p>Activity: Pour the milk into the bowl. Place one drop of each of your colours into the milk, keeping the drops close together. Add a drop of washing up liquid to the mix and watch the colours swirl around.</p> <p>Talk about this. Use this as an inspiration for art. Take photographs!</p>	<p>Cleaning by chemistry</p> <p>You need: Old 1p or 2p coins, ½ cup white vinegar, Plastic bowl, ½ teaspoon salt</p> <p>Activity: Mix the salt and vinegar in the bowl. Place the coins in the mixture and leave for 5 minutes. Remove the coins and clean them with ordinary water. They should be gleaming now!</p> <p><i>Why?</i> <i>The mixture of vinegar and salt produces a reaction that removes the layer of a substance called copper oxide from the coins and you have them as good as new!</i></p> <p>Rain cloud in a jar</p> <p>You need: 1 jar, water, shaving foam, blue food colouring</p> <p>Activity: Fill your jar about 3/4 full with water. Use the shaving foam to create a cloud on top of the water. Let the foam settle a bit. Now drop food colouring into the 'cloud' slowly. As your cloud fills up, the food colouring will fall down into the water creating a rain-like effect.</p> <p><i>How do clouds work?</i> <i>Those tiny drops of water floating in the air form clouds. When clouds get so full of water that they can't hold any more, the water falls back to the ground as rain.</i></p>	<p>Wave in a bottle experiment</p> <p>You need: empty plastic bottle and cap, vegetable oil, water, food colouring</p> <p>Activity: Wash a bottle - take off the label. Fill the bottle with 3/4 cup of water. Add a few drops of food colouring. Pour 1 cup of oil into the bottle. Screw the cap on. Roll the bottle on its side and let it settle for a few minutes. <i>The water will sink to the bottom and the oil will rise to the top.</i> Now tip the bottle backwards and forwards and make some waves. <i>The waves will be bigger at one end of the bottle and smaller at the other.</i></p> <p><i>Why?</i> <i>Your bottle wave is like an ocean wave. Water moves up and down and doesn't go forward as the wave goes through the water. The friction between water and wind makes a wave. Longer waves travel faster than shorter ones and go further before friction makes them disappear.</i></p> <p>Floating egg experiment</p> <p>You need: egg in its shell (it can be boiled or raw), an almost full glass of water, 1 tsp salt</p> <p>Activity: Place the egg into the glass of water. <i>Initially the egg will sink to the bottom.</i> Pour in two teaspoons of salt and stir carefully around the egg. Continue to add the salt and stir until the egg rises. <i>Eventually the egg will float as salt water is denser than fresh water and the egg will weigh less than the water.</i></p>	<p>Bouncing Raisins</p> <p>You need: a tall clear glass or jar, water, vinegar, bicarbonate of soda, 8+ raisins</p> <p>Activity: ½ fill your glass or jar with water. Add vinegar and bicarbonate of soda to the water. <i>The mixture will begin to fizz.</i> Drop the raisins one at a time into the glass. <i>The raisins may initially sink to the bottom but eventually they will rise up and then sink, then rise again. You should be able to watch the raisins bounce for up to an hour.</i></p> <p>Balloon fizz inflator</p> <p>You need: Small plastic bottle, funnel, 1/2 cup vinegar, Small balloon, Bicarbonate of soda, Teaspoon</p> <p>Activity: Take the uninflated balloon and stretch it out a few times with your hands. Place the funnel in the balloon opening and pour in enough bicarbonate of soda to fill it halfway. Remove the funnel. Pour the vinegar slowly into the bottle. Carefully pull the opening of the balloon over the opening of the bottle. <i>Try not to let any bicarbonate fall into the bottle.</i> Lift the balloon up so that the bicarbonate of soda falls through the opening into the bottle and mixes with the vinegar.</p> <p><i>Why?</i> <i>The combination of the bicarbonate of soda and the vinegar creates a gas called carbon dioxide. The gas expands, filling the bottle before moving into the balloon and inflating it.</i></p>
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Activity 3

Making salt crystals – an activity for all ages!

SALTY SCIENCE



You will need

- * Warm water
- * Salt
- * Large jug or container
- * Several different shaped and sized small containers
- * Coloured plastic plate or shallow dish

1 TRY THIS INDOORS CRYSTALS

Put about half a litre of warm water into the jug. Stir in a large spoon of salt until you can no longer see all the grains of salt which means they have dissolved. Keep on stirring in salt, a spoon at a time, until you reach the point where no more salt will dissolve. Then pour a small amount onto a flat coloured plate or tray and leave the plate somewhere warm.

WHAT DO YOU NOTICE?

Things to talk about ...

Over the next few days have a close look at what is happening on the plate. What do you notice? Where do you think the water is going? Can you see the salt again? Does it look the same as the salt that you started with? What is the same about it? What is different about it?

What happens if you use a colour dye? Can you make coloured crystals?

Try some other investigations from this website here

SCIENCE FUN AT HOME