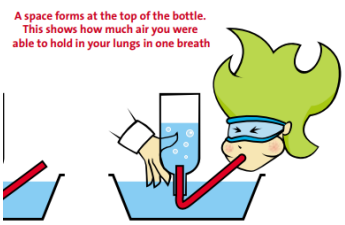
Ideas for supporting science at home/outside of school with living things

Name of activity	Objective or area covered	Method and equipment needed	Suitable age range
Exercise your heart	The heart Pulses Keeping healthy	An adult's heart rate is around 70 beats per minute, and a child's is a bit higher. (A mouse's is about 500 per minute, and an elephant's 25!). Heart rate increases with exercise so that more of the oxygen carried in the blood can reach the muscles. The fitter you are, the quicker your heart rate returns to normal. Where is your heart? What does it do? (Heart pumps blood to all parts of the body.) Why is it so important? (The blood brings oxygen to the muscles.) What is your heart rate? How would we measure it? Do you notice anything about your heart rate after you have been running? Or when you are frightened? Ask your child to take their own pulse. They can count the number of beats in 30 seconds and double this to get the number of beats per minute. They should record this. Then allow them to run around or skip for 5 minutes and record their pulse using the same method. Finally let them rest for a few minutes and then take their pulse again and record it. How long did it take to return to the normal rate? Discuss with the children what happened to their pulse rate after exercise. Did it increase, stay the same or fall?	Year 5/6
Growing tomatoes (or any veg!)	Plants	Tomato seed from garden centres. Choose Bush or varieties suitable for container production like BALCONI, TOTEM or TUMBLER. Seed count is available on the packet (90% germination/survival rate). Small flower pots or old yogurt containers Larger pot (4 litre container) Seed and potting compost Plant food Canes to support plants The time span of this project will last from seed sowing in February through to the summer holidays. 1. Sow seed individually in old yogurt containers. Follow instructions on seed packet as to sowing procedure. 2. Keep in well-lit warm windowsill, water as necessary. 3. Re-pot into a larger container using full strength potting compost once the plant is approx. 10 cm tall. 4. Start using liquid fertiliser with each watering, following instructions on plant food container. 5. Support plant with canes if necessary as the plant grows.	All ages with support.
How much air can my lungs hold?	Circulatory system	Large basin of water, Large plastic bottle (4 to 5 litre) with cap, Plastic tubing, Old towels for mopping up. Measuring the Capacity of Your Lungs: Fill the plastic bottle with water and put on the lid. Turn it upside down in the basin of water and remove the lid. Put one end of the tube into the bottle (careful not to let any air in). Take a big breath and then blow into the tube until you cannot breathe out any more. What happens?	Year 6

			
Investigating fruit	Plants, living things	What fruits do you know? Are they all the same colour? Size? Do they feel the same? Do they taste the same? Can you describe the taste of any fruit? Do you grow any fruit at home? How do they grow? (Trees – apple, pear, plum; Plants – strawberries; Bushes: blackberries, gooseberries.) What about bananas? Do we grow them here in Ireland? Why not? Do you think fruit is good or bad for you? • Feel the different fruit and describe how they feel (e.g. rough/smooth, hard/soft) • Look at them and describe their colour, shape, etc. • Look at them through a magnifying glass (if available) and describe any more detail which they might see • Cut up the fruit with a plastic knife • Describe the inside of the fruit; smell the fruit and describe the smell; taste the fruit and describe the taste	Nursery, Reception, Year 1
Make a bird feeder	Living things, food chains, omnivores, herbivores, carnivores	500ml empty plastic bottle with cap scissors Pencil Twine (50cm) Sunflower seeds 1. Prod the bottle with your scissors to make several holes all around the bottle. 2. Make two holes opposite each other about a third of the way up the bottle. 3. Push the pencil through both of these holes . This will act as a perch for the birds. 4. Make two holes opposite each other near the top of the bottle. 5. Thread the twine through the two holes. Make a loop to hang off a branch of a tree. 6. Fill the bottle with the sunflower seeds and put the lid on the bottle. You can also fill the bottle with peanuts (not dry roasted or salted peanuts) Well done, this is your bird feeder. Hang your bird feeder on a tree where you can view the birds from your house. Make sure to hang the bird feeder out of reach of any cats! Be patient, it may take the birds a couple of days to start eating from your feeder. Enjoy watching the birds feed. Expect to see birds like Chaffinches, Bluetits and Sparrows feed from your hanging feeder.	Year 1/ 2/3

Ideas for supporting science at home/outside of school with states of matter

Name of activity	Objective or area covered	Method and equipment needed	Suitable age range
Craft	Distinguish between an object and the material from which it is made.	Making a pot out of clay / item of clothing out of material and discuss the difference between the thing that is being made and what it is made of.	Year 1
Cooking	Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)	Making chocolate shapes, rice crispy cakes etc. (anything that will allow the children to observe the heating and cooling of chocolate). Making ice lollies using fruit juices and observing the process of freezing and melting.	Year 4
Cake Decorating	Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	Making icing using icing sugar. Experiment using different amounts of sugar and water, looking at the consistency of the icing.	Year 5
Making a Cup of Tea	Identify the part played by evaporation and condensation. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	Learn how to make a cup of tea with an adult. Observe the steam coming out of the kettle (condensation), adding sugar and stirring (dissolving)	Year 4 and 5

Ideas for supporting Physics at home/outside of school

Name of activity	Objective or area covered	Method and equipment needed	Suitable age range
Identify the properties of everyday materials around the house	distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	Range of materials e.g. wood, plastic, glass, metal, water, and rock	5 - 7
Recycling materials at home, discussing why and which materials are recyclable	identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	Range of materials	5 - 7
Making ice lollies	find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	Water Fruit flavouring	5 – 7
Den building Make a den that is both strong and waterproof!	compare and group together a variety of everyday materials on the basis of their simple physical properties (waterproof and non-waterproof	Sticks Leaves Logs etc.	5 – 7