YEAR 1

Topics left to cover this year: Plants, Seasonal Change

Other Topics: Animals Inc. Humans, Everyday Materials

Uncovered Topic Ideas:

PLANTS

- Go on a walk around your local area or a local wood and see if you can spot the different types of plants that we can see growing in Spring and Summer. Leaf Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_leaf_spotter_sheet.pdf Spring Flower Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_spring_flowers_spotter_sheet.pdf Summer Wildlife Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_summer_spotter_sheet.pdf
- When you go on a walk, collect a range of different plants and materials you find around a stick. When you get home, write about your journey through nature using your journey stick to help you remember your travels. http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_journey_stick.pdf
- Plant a seed and watch it grow (eg. a sunflower).

SEASONAL CHANGES

- Keep a weather diary. http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_weather_diary.pdf
- In the Spring and Summer we get warmer weather because the Sun is closer to the Earth. Sunshine increases the temperature. Using tin foil to reflect the sun, see if you can use sunlight to melt food in our current season. Use how much the sun has melted your food to decide which season we might be in. Instructions: https://www.stevespanglerscience.com/lab/experiments/solar-oven/

FLOATING AND SINKING

This used to be on the curriculum in Year 1 and there are some quite nice ideas so I thought I would pass them on anyway.

- Can you sink the boat? Tin foil normally floats but as we add more weight to it the downwards force becomes too much. Try different designs and see which works best. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/force-movement-experiments/sink-the-foil-boat/
- Dancing sultanas! Watch little air bubbles help sultanas raise to the top of a glass and then POP so that the sultanas sink back down again. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/force-movement-experiments/dancing-sultanas/

YEAR 2

Topics left to cover this year: Plants, Revisit Animals Inc. Humans

Other Topics: Living Things and their Habitats, Everyday Materials

Uncovered Topic Ideas:
PLANTS (and HABITATS): • Go on a walk around your local area or a local wood and see if you can spot the different types of plants that we can see growing in Spring and Summer. Leaf Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_leaf_spotter_sheet.pdf Spring Flower Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_spring_flowers_spotter_sheet.pdf Animal Home Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_animal_homes_spotter_sheet.pdf Animal Poo Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_animal_poo_spotter_sheet.pdf • Plant a seed or a bulb and watch it grow into a mature plant. Once it has grown, do different tests to see how it is affected. Eg. Put your plant by a window – which direction does it bend in and why? Put your plant in a dark place – what begins to happen to it and why? • Create a microhabitat for minibeasts by making a Minibeast palace: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_minibeast_palace.pdf Check on your palace after a week – has anyone moved in? You could also try attracting some butterflies to your garden by making a butterfly feeder: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_butterfly_feeder.pdf **ANIMALS INCLUDING HUMANS** • Exercise is really important to keep our bodies healthy. In particular, exercise helps our heart to pump our blood. Feel the effects of exercise by measuring your/an adults pulse for one minute, doing some exercise and then measuring the pulse again. What happens? • Why do we need to wash our hands? See for yourself why washing our hands is important for our hygiene by modelling what germs do when we wash our hands with soap. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/kitchen-chemistry-experiments/pepper-surface-tension/ Video Demonstration: https://www.youtube.com/watch?v=WVxMKpLLRoM • Is using water good enough? Test whether it is good enough to just use water when washing our hands through this simple experiment. Instructions: https://www.tes.com/teaching-resource/clean-hands-6054568

YEAR 3

Topics left to cover this year: Plants, Forces and Magnets

Other Topics: Animals Inc. Humans, Rocks, Light

Uncovered Topic Ideas:

PLANTS

- All plants need water to survive. Water is transported around all parts of a plant. See this process, known as 'transpiration', by trying out the Coloured Petals activity. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/botany-experiments/make-coloured-petals/ N.B. You can do this activity with a range of different plants including daisies that you pick and even celery!
- Water is transported around plants to keep them healthy and give them the nutrients they need. In leaves, the veins transport the water. Watch this video and replicate it yourself to create leaf skeletons which show each individual vein! Video demonstration and instructions: https://www.youtube.com/watch?v=yW-6H-aP5ys

FORCES

- Friction is a force that happens when one surface/object meets another while moving. It opposes this and can slow objects down or stop them moving – this can be useful when designing tires on bikes and cars. Either: Test which shoes in your house create the most friction (are hardest to move) over carpet OR which surface in your house creates the most friction with a trainer. Enquiry page: https://www.ogdentrust.com/resources/phizzi-enquiry-slippy-shoes
- Why are people told to leave an object in a wound if they are penetrated by something, eg. If an arrow is shot into their toe? It's all to do with friction! Once the hole is created, the friction of the object and your skin creates a temporary seal and stops the blood coming out. See this yourself by testing the Leak Proof Bag idea. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/water-science-activities/leak-proof-bag/
- Go on a magnetic material hunt. Using a fridge magnet (if you have one available), go around your house, get up close to different objects and test if they are magnetic. If the fridge magnet sticks to something (or something sticks to your fridge magnet) it must be made of a magnetic material. How many items that are magnetic can you find on your magnetic material hunt at home?
- If you find some magnetic materials on your hunt, why not make a magnet maze game. Instructions: https://www.science-sparks.com/mini-magnet-maze/ or https://www.science-sparks.com/lego-magnet-maze/
- Did you know that compasses work because of magnetism? Make your own compass using simple household materials to find true North in your home. Instructions: https://nationalmaglab.org/education/magnet-academy/try-at-home/make-a-compass

BBC Bitesize has loads of good explanation videos about the different forces.

YEAR 4

Topics left to cover this year: Sound (end of unit), Living Things and their Habitats

Other Topics: Animals Inc. Humans, States of Matter, Sound (part of unit), Electricity

Uncovered Topic Ideas:

SOUND (END OF UNIT)

- Investigate the relationship between volume and vibration strength. Instructions: https://www.outstandingscience.co.uk/index.php?action=view_page&page=purchase&product=osy4
- See the effects of sound waves traveling through the air in this simple investigation where sound waves actually make things move! Instructions and Video Demonstration: https://mocomi.com/can-sound-move-objects/

LIVING THINGS AND THEIR HABITATS

- An underwater habitat is very important for underwater creatures – but what happens when we pollute our waters? Simulate water pollution by filling a bowl with water and then adding different polluting materials to it (string/thread, cling film, oil, cotton wool). Now run your hand through the water. What happens to your hand? Why might this be dangerous for creatures that live in underwater habitats like the ocean?
- Filtration is one way that we can clear our oceans. It can also be very handy for making water drinkable for land animals! Create your own water filter at home to see how we can remove waste from our natural water sources. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/biology-environmental-science-projects/create-a-water-filter/
- Go on a walk around your local area or a local wood and see if you can spot the different types of animal habitats. Animal Home Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_animal_homes_spotter_sheet.pdf Animal Poo Spotter Sheet: http://www.treetoolsforschools.org.uk/activities/pdfs/pdf_animal_poo_spotter_sheet.pdf Can you spot any potential risks to that animal, eg. Urbanisation and Pollution? Draw a plan of how you could make your local environment better for the wildlife that lives there.
- Create a classification key for the wildlife in your local area – can your family use it to successfully identify different plants and animals?

YEAR 5 & 6

Year 5 Topics left to cover this year: Earth and Space, Forces

Year 5 Other Topics: Living Things and their Habitats, Animals Inc. Humans, Properties and Changes of Materials

Year 6 – Uncovered topics do not lend well to completion of practical activities at home (eg. electricity); as such, I recommend that practical activities are taken from the Year 5 activity list to embed learning. Other science tasks set (non-practical) could still relate to Year 6 objectives.

Uncovered Topic Ideas:

EARTH AND SPACE

- Rockets 'blast off' because hot air helps them to rise. Make a teabag rocket to see this for yourself (with adult supervision in an outdoor area). Instructions: https://www.fizzicseducation.com.au/150-science-experiments/space-science-projects/make-a-tea-bag-rocket/ Video demonstration: https://www.youtube.com/watch?v=VdzPix9CKck
- Why does the moon have craters? Model the meteorite strikes that happen on the moon at home. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/space-science-projects/model-meteorite-strikes/ What do you notice about the height you drop the rock and the size of the crater you create?
- Constellations are groups of stars and/or galaxies that astronomers use to map the sky. Model the constellations in the night sky at home. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/space-science-projects/constellations-in-a-canister/ (Film canister could be substituted for a toilet roll tube and a dark room – no bicarb is actually needed).

FORCES

- Gravity is a force that that pulls toward the centre of the Earth (downwards) and Isaac Newton's First Law of Motion says that once an object is moving it will continue moving in that direction unless a new force is applied. Prove this by completing the Egg Inertia challenge. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/force-movement-experiments/egg-inertia/ Video demonstration: https://www.youtube.com/watch?v=6gzCeXDhUAA
- Friction is a force that happens when one surface/object meets another while moving. It opposes this and can slow objects down or stop them moving – this can be useful when designing tires on bikes and cars. Either: Test which shoes in your house create the most friction (are hardest to move) over carpet OR which surface in your house creates the most friction with a trainer. Enquiry page: https://www.ogdentrust.com/resources/phizzi-enquiry-slippy-shoes
- Air resistance (drag) is a force that acts against gravity – as an object is pulled downwards, the air resistance pushes it upwards. Air resistance is how parachutes work. Test falling paper with a small surface area (scrunched up into a ball) and a large surface area (left as a flat sheet) when dropped from the same height – what do you notice about how quickly they fall? Use what you learn to design a parachute with good air resistance. You could make your design out of anything and test it out your window (with adult supervision). https://www.youtube.com/watch?v=w4Jgh9V9gwE
- **BONUS:** You learnt in Year 4 that liquids are made of molecules that all like to hold tightly to each other. When the water ends (because there is no water molecule to grab onto) it creates a surface (the top of the water which acts like skin or elastic) where the molecules hold even tighter to one another. Because these molecules are holding each other so tightly, they create a force called surface tension. Watch what happens when you change the surface tension of water by adding washing up liquid to it in the Soap Powered Boat experiment. Instructions: https://www.fizzicseducation.com.au/150-science-experiments/force-movement-experiments/soap-powered-boat/ Video demonstration: https://www.youtube.com/watch?v=kLLSJ9kRUHM

BBC Bitesize has loads of good explanation videos about the different forces.

ELECTRICITY:

- Explore static electricity by doing this simple experiment: https://www.stevespanglerscience.com/lab/experiments/static-flyer-flying-bag/