



Elm, Maple, Walnut Let's Plant It / Turn It Up

Lesson	IPC Learning Goal	NC Coverage	Activities	Resources / Vocabulary / Personal Goals
Entry Point		WALT understand what a plant is. What is a plant? Activity 1 On large sheets of sugar paper brainstorm everything you know about plants. Activity 2 Draw a picture of a plant. Share it with the class. Why is it a plant? Activity 3 Write the names of different plants you know of. Activity 4 What do you want to find out about plants? iPads Research facts about plants. Share ideas and knowledge.		
Knowledge Harvest		WALT identify different plants in our environment. <h1 style="margin: 0;">Trip to Mote Park</h1> Linked to Art – use their sketch books to draw plants with texture and tones. AT THE END OF THIS WEEK CHILDREN TO HAVE PLANTED SOME SEEDS SUNFLOWER CRESS STRAWBERRY TOMATO		
Big Picture		Plants grow in all corners of the globe – even in extremely hot and extremely cold places. This is good news for people and animals because without plants we couldn't live..		
Geography	2.03 Know how the nature of particular localities affect the lives of people		WALT use secondary sources to obtain geographical information Ask the children what they had for breakfast. Write it down ... Tally chart Ask ... Did anyone have a plant for breakfast? Discuss Look at what children had for breakfast.	

	<p>2.04 Know about the weather and climatic conditions in the host country and how they affect the environment and the lives of people living there</p> <p>2.09 Be able to use secondary sources to obtain geographical information</p> <p>2.11 Be able to communicate their geographical knowledge and understanding to ask and answer questions about geographical and environmental features</p> <p>2.12 Understand how places fit into a wider geographical context</p>		<p>What cereal is it? The children will choose one of the cereals and use the internet to find out about it.</p> <ul style="list-style-type: none"> • Where is it grown? • Can it grow in England? • How is it grown? • How does it get to my breakfast table? <p>The children will use the questions as headings to find out the information.</p> <p>EXT – the children could present how the cereal becomes their breakfast ie, PPT or a poster.</p> <p>Continue into the next lesson? Share information about the cereals.</p>	
International	<p>2.01 Know about some of the similarities and differences between</p>		<p>WALT identify activities and cultures which are different from but equal to their own</p> <p>Introduce the term 'cash crop' and explain what it means. Examples of cash crops are chocolate (cacao beans), tea, coffee, soya, palm oil and bananas.</p>	

	<p>the different home countries and between them and the host country</p> <p>2.02 Know about ways in which these similarities and differences affect the lives of people</p> <p>2.03 Be able to identify activities and cultures which are different from but equal to their own</p>		<p>Tell the children that sometimes the prices people get from selling their produce (cash crops) are too low for them to be able to earn a decent living.</p> <p>This is not fair and results in poorer families (and even children) having to work long hours to make enough money to survive.</p> <p>Ask the children to research the following:</p> <ul style="list-style-type: none"> • What is 'fair trade'? • Was your breakfast fair trade? • Does England produce cash crops? • Does England buy in cash crops? <p>fairtrade.org.uk/products/default.aspx</p> <p>How are the children going to record this?</p> <p>Role Play Information Text PPT Poster</p> <p>The children should be able to tell you why fair trade is fair, and how fair trade can make a positive difference to people's lives.</p>	
Science 1	<p>2.01a Be able to carry out simple investigations</p> <p>2.01b Be able to prepare a simple investigation which is fair, with one changing factor</p> <p>2.01c Be able to predict the outcome of investigations</p>		<p>WALT report findings from enquiries.</p> <p>Explain that we are going onto the field to look at the different plants that grow in our school environment.</p> <p>The children will find information through observation.</p> <p>Go through the statements so the children know what they will looking for.</p> <ul style="list-style-type: none"> • Do all the flowers open at the same time or do flowers on upper/lower branches open first? • Whereabouts on the branch do new leaves grow? Why? • Do the leaves turn to the Sun? • Are there any insects under the leaves or inside the flowers? • Place a sheet of white paper under the plant. Shake one of the branches gently – what do you find? • The approximate height and spread of the plant • The number of branches, leaves and flowers (or an estimate) • The size and shape of the leaves – rounded, serrated, palmate (like an open hand), needle-shaped, lobed • The colour, shape and size of any flowers 	

	<p>2.01d Be able to use simple scientific equipment</p> <p>2.01e Be able to test ideas using evidence from observation and measurement</p> <p>2.01f Be able to link evidence to broader scientific knowledge and understanding</p> <p>2.01g Be able to use evidence to draw conclusions</p> <p>2.02 Be able to gather information from simple texts</p>		<ul style="list-style-type: none"> • The colour, shape and size of any seeds • Any patterns in growth they observed <p>In small groups the children will have some of the photos of the plants to look for. They will use the statements above to find out information about the plants. They can draw pictures of the plants. The children can have tape measures to measure the leaves and heights of the plants etc.</p> <p>SCIENCE LESSON 3 PLANT SOME CRESS SEEDS IN PREPARATION FOR WEEK 3. Some in the cupboard Some in the fridge Some on the window ledge Some outside Make comparisons with the plants.</p> <p>Look at the photos of the plants and discuss them relating to the statements.</p> <p>What have we found out?</p>	
Science 2	<p>2.03 Understand the importance of collecting scientific evidence</p> <p>2.04 Understand some of the effects of what they learn on people's lives</p> <p>2.06 Know about processes and</p>		<p>WALT use evidence to draw conclusions</p> <p>Recap from lesson 1 about where plants might grow. Activity 1 Walk around the school grounds and discuss what plants are growing and why. The car park – more flowers, why, think about the position of the sun. The pirate ship, does anything grow there? Under trees Where are most flowers?</p> <p>Activity 2 <i>Mathematics link: use Venn diagrams and sorting hoops to group and sort pictures of different plants, e.g. plants with leaflets could form one group and plants with single leaves another group.</i> Have photos of different plants and sort them by where they might grow, features etc. Look at the sorting, what do children know?</p>	
Science 3			<p>WALT prepare a simple investigation which is fair, with one changing factor</p>	

	<p>conditions that have an effect on living things</p> <p>2.07 Know about the principles of nutrition, growth, movement and reproduction</p> <p>2.08 Know about the living things that are supported by different environments</p> <p>2.09 Know about ways in which animals and plants are suited to different environments</p>		<p>Look at the seeds growing in their different positions. What has happened? Discuss. Use thermometers to measure the temperature around the seedlings.</p> <p><i>Be able to use simple scientific equipment</i> I am investigating: What happens to the seedlings in different temperatures. I will change: The temperature because this is what I am testing. I will keep the same: Everything else – same amount of water, light, air 1. Investigate the effects of temperature, by putting seedlings: <ul style="list-style-type: none"> • In a warm cupboard • In a cold refrigerator 2. Investigate the effects of light by putting seedlings: <ul style="list-style-type: none"> • On a sunny windowsill • In a dark corner of the classroom 3. Investigate the effects of water by: <ul style="list-style-type: none"> • Varying the amount of water given • Giving no water 4. Investigate the effects of air by putting the seedlings: <ul style="list-style-type: none"> • In a container with an airtight lid • In a container without a lid The children will record their findings. LA – To complete an investigation sheet. Conclude on what are the best conditions for cress seeds to grow. </p>	
Science 4	<p>2.10 Know about the frequently occurring animals and plants that are supported by the environment around the school</p> <p>2.11 Know about food chains in the local environment</p> <p>2.21 Know about the effects that light, air,</p>		<p>WALT use evidence to draw conclusions</p> <p>Recall the previous task and ask the children: what do plants need in order to grow? (Water, light, air and warmth are basic needs.) Do plants need anything else? Invite ideas from the children. Plants will grow better in soil that is rich in nutrients and where they have enough room to grow. However, plants can grow almost anywhere - in tiny cracks in rocks, in the ocean, under the snow, in deserts, etc.</p> <p>Decide which category or categories you will enter,</p> <ul style="list-style-type: none"> • Tallest flower (sunflower) • Biggest flower head (hibiscus; sunflower) • Plant with the most flowers (sweet pea; bougainvillea) • Most fragrant plant (honeysuckle; lavender) <p>Outside The children will plant some seeds for the category they choose.</p>	

	water and temperature have on plants		Make observations of their plant. What do they notice? What has happened to your plant?	
Science 5	<p>2.22 Know about the functions of leaves</p> <p>2.23 Know about the life cycle of plants</p> <p>2.24 Be able to classify plants according to their features</p>		<p>WALT describe the function of different parts of flowering plants and trees.</p> <p>Ask - Why do plants need leaves when they can get nutrients from the soil?</p> <p>Activity 1 Look at a real, flowering houseplant in a pot. They should photograph or draw the plant and label the parts. Expose part of the root system so that they can observe the length and shape of the roots. The children should annotate their plant photograph/drawing to explain the function of each plant part. For example, the roots fix the plant in the soil and suck up water and nutrients from the soil. The stem supports the plant and carries water and nutrients to the leaves. The leaves make food for the plant, and the flowers produce pollen and seeds for fertilisation and reproduction. The children will use the internet for this.</p> <p>Activity 2 What information can you find out about these questions?</p> <ul style="list-style-type: none"> • Why do plants turn their leaves to the Sun? • How do leaves provide food for the plant? • What is photosynthesis? • Why do some plants lose their leaves in winter? • Why do some plants such as holly have spiky leaves? • Why does the nettle have stinging leaves? <p>Mathematics link: Do all fully grown holly leaves have the same number of spikes? Do all oak leaves have the same number of lobes? Do ash trees have the same number of leaves? Examine a collection of leaves from one or two trees of the same type to look for similarities and differences.</p>	
Science 6		-	<p>WALT explore and describe how water is transported within plants.</p> <p>What are the functions of the roots of a plant?</p> <p>Discuss They will need: A transparent plastic beaker Strips of absorbent paper or cloth Food colouring</p>	

			<p>1. Give groups of children a transparent plastic beaker each and some strips of absorbent paper or cloth.</p> <p>2. Tell the children to put a small amount of water in each beaker and colour it with a few drops of food colouring</p> <p>3 Next, they should place the paper/cloth strips in the water and watch what happens.</p> <p>This test will help to explain how water from the soil is absorbed by the roots.</p> <p>The children will draw a plant and demonstrate how the roots work with a labelled diagram and write information.</p> <p>EXT - What happens to the water once it's sucked up the stem? Explain what happens to the water.</p> <p>The children should also know that most of the water a plant sucks up evaporates into the atmosphere from the surface of the leaf. This process of evaporation (or transpiration) is speeded up on hot and windy days.</p>	
Science 7		-	<p>WALT describe the plant life cycle, especially the importance of the flower.</p> <p>How seeds are formed in the flower or fruit and then are scattered (or dispersed).</p> <p>Why do plants have to scatter their seeds?</p> <p>Ask the children to think of the many different ways in which plants disperse their seeds.</p> <p>The shape or design of the seed holds the clue. Study plants growing in the local area or school grounds and try to collect or photograph different types of seeds. On examining the seeds, can the children work out how they are most likely to be dispersed? Invite their ideas. Seeds with wings such as sycamore and ash are designed to 'fly' or glide. Poppies put their seeds in 'pepperpots' that are shaken out by the wind. Sticky seeds (burrs) cling to animals' fur and are carried far away by the animal. Some seeds are formed in fruit and are then eaten by birds, e.g. blackberries. The seeds are later planted in the bird's droppings!</p> <p>Draw the life cycle of a plant and label it</p> <p>crickweb.co.uk/ks2science.html#lifecycle5b – Crick Web has a life cycle chart that the children can create by dragging and dropping in the labels.</p> <p>EXT – Why is the flower important?</p> <p>Sequence the life cycle of a plant using pictures.</p>	

			In pairs explain the life cycle of a plant.	
Science 8			<p>WALT: Understand what soil is made from</p> <p>What is soil? Discuss Soil is made up of rocks that have been worn down (over many years by ice, rain and wind) and organic matter such as dead leaves and animals. Collect some different soil samples and rocks from the local area and try to match them up. (Garden centres are a good source of pebbles and rocks.) Find out the names of the rocks in your collection from books and the internet. Examine the rocks using hand-magnifiers and challenge the children to sort them into groups according to colour and texture and whether or not they contain crystals, fossils or other minerals. The children could devise tests of the soil samples they have collected to find out which holds the most or the least amount of water. They could do this for each soil sample by putting a measure of the soil in a beaker and then filling the beaker with water. When the water settles, they should measure the level of the water above the soil – this is the amount of water that is not absorbed by the soil. Make a note of any differences. Consider how different plants like different types of soil. This consideration is important for farmers who grow food crops. Potatoes like well-drained soil but rice prefers to stand in water. Talk about how farmers can improve their soil by adding fertilizers.</p> <p>EXT - They should draw bar graphs to show which type of soil holds the most water and which holds the least. Ask the children: can we make our own soil? Invite suggestions from the children. You could invite a gardener or possibly one of the parents to come in to school to talk about or demonstrate how composting works.</p>	
Science Lesson 9			<p>WALT use food chains to identify producers, predators and prey.</p> <p>Recall the plants you listed as growing in your locality in Task 1. Did you notice any evidence that these plants might provide food for small animals? For example, did you see holes or bite marks in the leaves where slugs or snails had been feeding? If possible, return to the site of your previous research to collect further evidence. Find some leaves with holes – what has made the holes? Find out through close observation – examine the plant at different times of the day to try to spot the animal that</p>	

			<p>is eating the plant. How many leaves on a particular plant have holes? Are the holes in the same place? What is a producer? What is a consumer? What is a predator? What is prey? What is a herbivore? What is a carnivore? What is an omnivore? The children will use the internet to research this. LA – Use pictures of animals to sort into herbivore, carnivore and omnivore. The children will draw a food chain.</p> <p>Ask the children to research three producers and three consumers found in the local area. Can they draw a simple food chain? Or, a more complex food web with two or more food chains joined together where different animals feed on the same plant?</p> <p>LA – use pictures to create a food chain.</p> <p>EXT – What if a particular plant died out. What would happen? Share the food chains.</p>	
Technology 1	<p>2.01 Know that the way in which products in everyday use are designed and made affects their usefulness</p> <p>2.02 Be able to design and make products to meet specific needs</p> <p>2.03 Be able to make usable plans</p>		<p>WALT present a product in an interesting way.</p> <p>Look at different obelisk designs.</p> <p>https://www.youtube.com/watch?v=WXznht0bxyp https://www.youtube.com/watch?v=l-ZrrCE-Fkk Tell the children they have been asked to design and plan an obelisk for the local gardens at the park. The flowers are in all different shapes and sizes. What will their obelisk look like? Be made out of? How big/tall will it be? Their plan needs to have measurement but not to scale.</p> <p>EXT – Go onto the back field. Can we make an obelisk with materials we can find? Share the plans</p>	

	<p>2.04 Be able to make and use labelled sketches as designs</p> <p>2.05 Be able to use simple tools and equipment with some accuracy</p> <p>2.07 Be able to identify the ways in which products in everyday use meet specific needs</p>			
Science	<p>2.01a Be able to carry out simple investigations 2.01b Be able to prepare a simple investigation which is fair, with one changing factor 2.01c Be able to predict the outcome of investigations 2.01d Be able to use simple scientific equipment 2.01e Be able to test ideas using evidence from observation and measurement 2.01f Be able to link evidence to</p>		<p>WALT be able to state that sounds are made by vibrations</p> <p><u>Investigate!</u> You can investigate the loudness or softness of a sound by making a sound machine out of a metal spoon, elastic band and string. Follow the instructions on 5B WS2 and have the students change the volume of the sound they hear from the spoon. You can also link this in with sound being able to travel through solids, liquids and gases, but this will be touched upon later. Make sure that you establish the link between the size of the vibration and the loudness of the sound.</p> <p><u>Investigation</u> Establish that sound is made by vibrations and the vibrations travel through the air. You can test this by constructing a drum out of a balloon cut in half and stretched over a beaker. If you have trouble fastening it then you can use an elastic band around the top of the beaker. You should place rice or small bits of paper and have a competition to see if they can get the rice to move only using their voice (solid notes work best), reinforce the fact that they are not allowed to blow! You can even turn it into a competition to see if anyone can find a note that makes them move the most (a resonant frequency). You can also use a percussion drum instead.</p>	

	broader scientific knowledge and understanding 2.01g Be able to use evidence to draw conclusions 2.02 Be able to gather information from simple texts		What does increasing the number of vibrations a second do to a sound? How do we make a sound louder? Get them to give examples	
Science			<p>WALT know how sounds travel to the ear.</p> <p>Display the power point of Sound traveling and discuss it. Then get the children to make a string telephones and test them out. Can any of them explain why you can hear the sound in the cup but not the air? You can tell them that sound does not like to jump between substances, so going from gas to solid will cause most of the sound to be reflected and vice versa (sound can be reflected in a solid or liquid too, it doesn't like crossing boundaries). This can also be demonstrated by using a metal railing. Get students to one end and tap the railing with a metal object such as a penny. If long enough then they should hear the sound in the solid before the sound in the air. Also the sound in the solid should be much louder. Why is this? The sound in the air has a much larger area to spread out into so most of it is lost and only a small proportion reaches your ears. Children first complete the sound traveling activity sheet. Cut out the pictures and captions to sequence how sound travels to the ear. Then they make their own string telephones. Children experiment with the string telephones. They explain how they could hear each other.</p>	
Science			<p>WALT be able to carry out simple investigations.</p> <p>Put out bottles. Blow across the top of a bottle, children do the same. What did you hear? (sound) We now know that sound is caused by vibrations – but what is vibrating in this instance to cause this sound? Is it the bottle or the air inside the bottle that is vibrating? (It's the air inside the bottle). Children perform an investigation in small groups. Each group should have four empty plastic drinks bottles. Children fill the bottle almost to the top with water and then blow across the top once again. What do you notice this time? (The sound has changed). Why? There is now less air in the bottle so the air vibrates more quickly when we blow across the top. If there is a shorter distance between the water and the top of the bottle, the sound vibrations and wavelengths will be shorter so this means a higher frequency and a higher pitch. Ask the children to investigate what happens to the sound when the water level changes. (Video-record this investigations so that they can later compare and listen to the changes in sound). Children draw diagrams and label it, so that it shows evidence of their understanding and investigations.</p>	