

Science Medium Term Plan - Year Two

Key Concept(s)	Key Question	Activities	Resources	Assessment
Animals including humans Autumn 1 (7 lessons)				
KC6	To understand that animals change as they grow	1. Look at powerpoint of animals and their young. Notice common terms e.g calf, cub, pup, kitten (common for mammals) chick (common for birds) larvae (common for insects)	Animal baby ppt (Lesson 1) Animals and their offspring real photos. (Lesson 2) Vocab Growing, Classify, Changes, offspring, young, parent, adult,	
KC6	To recognise and match animals and their offspring	2. Model matching parent and offspring and add labels. Independently match parents and offspring and add labels in books Read monkey puzzle at story time to reinforce.		
KC8	To know how offspring change as they grow into adults	3. Look at the animal powerpoint (Lesson 1) and discuss How do they change as they get older? Do they change colour/get bigger/ lose hair etc. How do humans change? Use powerpoint and compare to other animals.	Growing up powerpoint Vocab Baby, child, teenager, adult, elderly	
KC2	To find out what humans need to survive.	4. 3 basic needs- water, air and food. Watch video https://www.twinkl.co.uk/go/resource/tgv2-sc-30-quick-facts-what-we-need-for-survival-video Discuss need for shelter and sleep too. What is the difference between wants/needs?	Survival ppt Vocab Survival, Air, Food, Water, Needs and wants	
KC8	To describe what humans need to survive.	5. Recap previous session and make a poster about animal/human basic needs		
KC4	To know the importance of eating different types of food	6. Discuss why some foods are healthy/unhealthy. Why do we need to eat healthily? Talk about different food groups and why it is important to have some less than others. What kind of foods are in each food group?	Healthy living ppt Vocab Healthy, Unhealthy, Food groups	
KC8	To understand the importance of good hygiene	7. Look at the powerpoint and discuss personal hygiene. Why is it important? What does it include? Children will have a good understanding of hand washing	Hygiene ppt Vocab Hygiene, Hand washing, Clean	

Key Concept(s)	Key Question	Activities	Resources	Assessment
Living things and their habitats (food chains) Autumn 2 (5 lessons)				
KC6 KC7	To explore and compare things that are living, dead and have never been alive	<p>1. Introduce idea of 'living', 'dead' and 'never been alive'.</p> <p>Show children objects/pictures of objects which are easy to identify e.g. a plant, a bone and a plastic cup</p> <p>Watch video and address possible misconceptions e.g. leaves were once alive, but are now dead</p> <p>Sort pictures into 3 groups. Ask children to check the groups they have made with others in the class. <i>Have you sorted correctly? How do you know? Are you making any changes? Why? Explain.</i></p> <p>Photograph outcome and ask children to annotate in their books.</p>	<p>Pictures to sort into living/dead/never been alive</p> <p>Vocab living/dead/never been alive</p>	
KC4 KC8	To understand how animals get their food	<p>2. Look at video https://www.youtube.com/watch?v=MUKs9o1s8h8 pausing at key points to reinforce concepts/question understanding</p> <p>Describe how a simple food chain works and how animals obtain their food from plants and other animals.</p> <p>Discuss that a producer always starts off the food chain.</p> <p>Discuss what happens if an animal becomes extinct- the food chain breaks.</p> <p>Play food chain challenge (woodland, savannah or tundra)</p>	<p>Vocab Food chain, predator, habitat, dependence, consumer, producer, prey, extinct, energy</p>	
KC4 KC10	To describe how a food chain works	<p>3. Recap the parts of the food chain and reinforce vocab. Create a food chain together, starting with a producer (a producer always starts off the food chain) e.g. grass. What eats grass? What predator eats that prey?</p> <p>Use food chain cards to create own food chains. Photograph outcomes and ask children to annotate in their books</p>	<p>Food chain cards</p> <p>Vocab Food chain, predator, habitat, dependence, consumer, producer, prey, energy</p>	
KC6 KC8	To identify and name different sources of food in a food chain	<p>4. Know how a food chain is circular – the producer is eaten by a consumer, which is eaten by a predator. Eventually, all animals will die. When the final predator in a food chain dies, it is eaten by scavengers (other animals that find it, or insects that help the body decompose). When it dies and</p>	<p>Paper plates, food chain pictures</p> <p>Vocab Food chain, predator, habitat, dependence, consumer, producer,</p>	

decomposes, the energy in it goes back into the soil and new producers can then grow

Children create own circular food chains on paper plates:

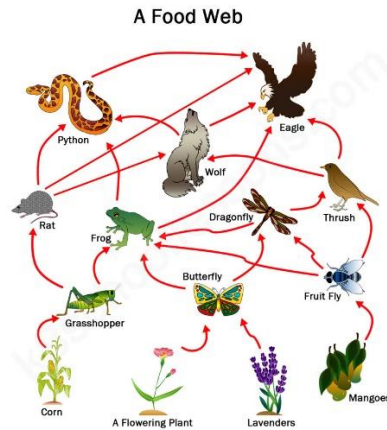


prey, energy, die, decompose, scavenger

KC10
KC8

To know about and understand a food web

5. Explain that in nature, there are often various different consumers/producers instead of one, and that this is called a **food web**:



Create a large class food web using pictures and string to show how energy is transferred

Picture cards, string
Vocab
Food web, predator, habitat, dependence, consumer, producer, prey, energy

Key Concept(s)	Key Question	Activities	Resources	Assessment
Living things and their habitats (habitats) Spring 1 (7 lessons)				
KC2 KC10	To identify the basic needs of plants	<p>1. Recap living/dead/never been alive from previous term. How do we know if something is alive?</p> <p>Introduce MRS GREN (movement, respiration, sensitivity, growth, reproduction, excretion, nutrition)</p> <p>Common misconception – plants don't move/excrete/'eat'</p> <p>Children sort pictures into living/not living, using terms to talk about them</p> <p>Use Song to reinforce</p>	<p>Pictures to sort</p> <p>Vocab movement, respiration (breathing), sensitivity (feel hot/cold, pain, touch etc), growth, reproduction, excretion (poo/wee), nutrition (food)</p>	
KC3 KC6	To know which habitats provide for animals basic needs	<p>2. Watch video, pausing to reinforce/question and introduce vocabulary</p> <p>In books, match pictures of animals to their habitat (underwater, desert, woodland)</p> <p>Answer habitat quiz as a class</p>	<p>Pictures of animals and habitats</p> <p>Vocab natural, habitat, organism (A habitat is a natural home of an organism)</p>	
KC10	To understand the term microhabitat	<p>3. Introduce microhabitats e.g. rock pool on a beach, log in a woodland</p> <p>Explain that we are going to make our own microhabitats for our school field/gardens at home. Watch video for ideas, then make and place outside (or take home and place in garden)</p> <div data-bbox="792 1054 1312 1353" data-label="Image"> <p>The image shows a collection of natural materials and cardboard tubes arranged on a wooden surface. Labels with white text identify the items: 'Twigs' (a bundle of dry sticks), 'Dried Leaves' (a pile of brown leaves), 'Pine Cones' (a few pine cones), and 'Cardboard Tubes (big or small)' (two stacks of white cardboard tubes). A pair of bright green gardening gloves is placed in the center of the arrangement.</p> </div>	<p>Cardboard tubes, scissors, leaves, twigs</p> <p>Vocab natural, habitat, organism, microhabitat, environment (A habitat is a natural home of an organism. A microhabitat is a small habitat that is different to the surrounding environment)</p>	

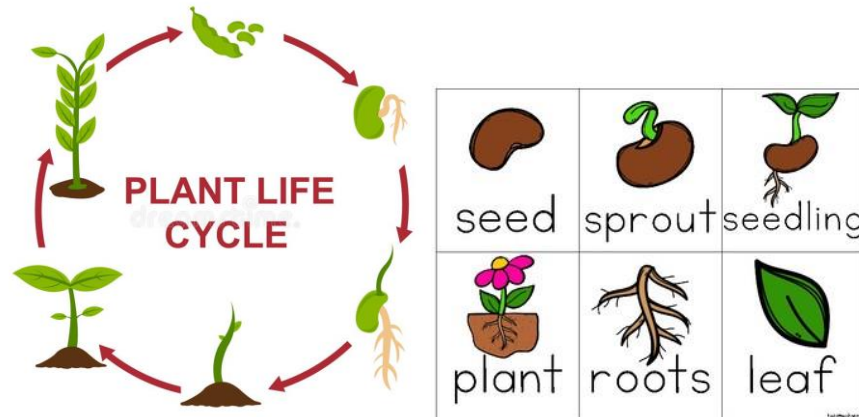
<p>KC2 KC9</p>	<p>To identify living things suited to a desert habitat</p>	<p>4. What do children know about deserts? What are they like? What might live there? Watch video and find new facts</p> <p>Match facts about desert organisms to their pictures (tortoise, cactus, fennec fox)</p> <p>Answer desert habitat quiz as a class</p>	<p>Facts and pictures for desert organisms (from video) - tortoise, cactus, fennec fox</p> <p>Vocab natural, habitat, organism, adapted, environment, dry, rainfall</p>	
<p>KC6 KC10</p>	<p>To know how a rainforest provides for plants and animals which live there</p>	<p>5. Look at picture of a rainforest and picture of a desert. What's different about these habitats?</p> <p>Watch video about rainforests, pausing to reinforce/question and introduce vocabulary</p> <p>Make poster about rainforest habitats, including organisms that live there and facts about them</p>	<p>picture of a rainforest and picture of a desert</p> <p>paper and pens for posters</p> <p>Vocab natural, habitat, organism, adapted, environment, hot, wet, temperate, tropic, rainfall</p>	
<p>KC2 KC10</p>	<p>To know the features of a Polar habitat and animals suited to live there</p>	<p>6. What do children know about the artic? What is it like? What might live there? Watch video and find new facts</p> <p>Introduce artic (north pole) and Antarctic (south pole) – the polar regions – and show on a globe. The arctic has life on the land and in the sea, but the Antarctic only has life in the water.</p> <p>Children read polar fact sheets and share facts with others in the class</p>	<p>Polar facts sheets</p> <p>Vocab natural, habitat, organism, adapted, environment, cold, dry, frozen, tundra, artic, Antarctic, polar regions</p>	
<p>KC8</p>	<p>To show understanding of plants and animals in their habitat</p>	<p>7. Children use knowledge of habitats to create a shoebox habitat in groups/pairs. Include pictures of organisms from that habitat and features</p>	<p>Shoeboxes, pictures of organisms found by children during the session, small world animals, art materials (e.g. paint, scissors,</p>	

of it. Explain how the plants and animals are adapted to life in that habitat as they create it



glue) children can also draw their own animals.

Key Concept(s)	Key Question	Activities	Resources	Assessment
Plants Spring 2 (8 lessons)				
KC8	To understand changes that occur during the 4 seasons	<p>1. Recap seasons and what happens in each season (focus on weather and climate). https://www.bbc.co.uk/bitesize/topics/zkvv4wx/articles/zcx3gk7</p> <p>Children split page in 4 and draw a picture of each season e.g. leaves turn brown in autumn, snow in winter</p> <p>Spend time talking about spring and what happens in spring – plants grow and baby animals are born</p>		
KC3 KC10	To identify and describe the basic structure of a plant	<p>Display plant images around the classroom. Children walk around and observe. Ask the children to notice the different parts of a plant. Are all plants the same?</p> <p>What parts do children know? Do they know the purpose of those parts? Are there any parts that can't be seen (e.g. roots)? Where are they? Why do plants have them?</p> <p>Part of a plant including fruit https://primaryleap.co.uk/activity/parts-of-a-plant/level-1</p> <p>Watch video</p> <p>Draw and label parts of a plant in books (give children a sheet if unable to draw the plant for themselves)</p> <p>As a class complete parts of a plant quiz</p>	Plants, diagram for labelling, quiz Vocab Stem, leaves, roots, flower, fruit, nutrients, chlorophyll	
KC3 KC8	To know how seeds grow into mature plants	<p>3. Look at life cycle of a plant diagram with labels removed: https://www.youtube.com/watch?v=T7cOmMzZvYc</p>	Life cycle diagram, labels	



Introduce terms seed, seedling, sprout, leaves, roots, flower. Children discuss in groups and match to diagram. Agree as a class and take photo of completed diagram. Stick in books for children to annotate

KC2
KC3

To find out what plants need to grow

4. Go on a plant hunt around school. Look at where different plants are growing - how much sunlight/ rain do they get? Take photos and stick in book with annotations.

KC2
KC9

To describe what plants need to grow

5. Talk about what they noticed when looking at where the plants were growing in previous session.

Sort cards (sun, air, water, light, warmth, soil, plant food) into 'need to grow' and 'don't need to grow'. Check for mistakes and clarify. Use ['what plants need to grow' powerpoint](#) if children unsure

Cards to sort (sun, air, water, light, warmth, soil, plant food), powerpoint



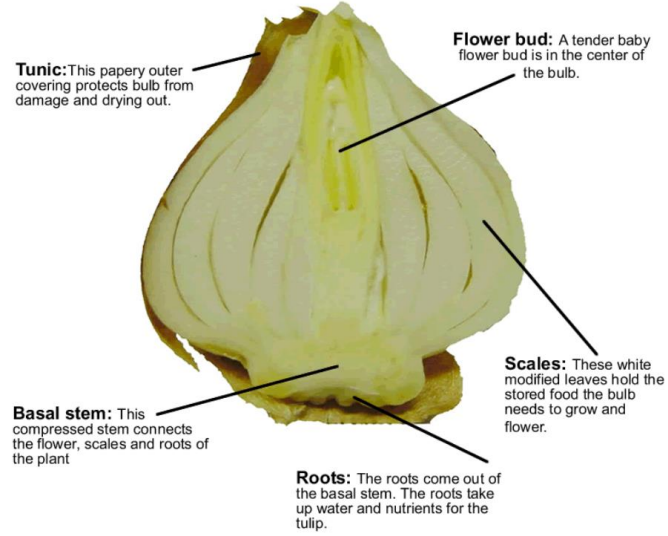
KC5

To grow a plant by providing for its needs

6. Recap what plants need (sunlight, water, air). Plant bean seeds in ziploc bags and predict what will happen.

Place in a sunny spot (e.g. stick to windows) and revisit during the term as they grow

Bean seeds, cotton wool or kitchen roll, Ziploc bags – place an order with DB two weeks in advance

		 		
<p>KC4 KC9</p>	<p>To know how plants grow from a bulb</p>	<p>7. Dissect a bulb and look at different parts of it. Use powerpoint to look at different parts and their purpose.</p> <p>Draw bulb and label the parts (sheet for those who struggle to draw it).</p>  <p>Tunic: This papery outer covering protects bulb from damage and drying out.</p> <p>Flower bud: A tender baby flower bud is in the center of the bulb.</p> <p>Scales: These white modified leaves hold the stored food the bulb needs to grow and flower.</p> <p>Basal stem: This compressed stem connects the flower, scales and roots of the plant</p> <p>Roots: The roots come out of the basal stem. The roots take up water and nutrients for the tulip.</p> <p>Use a bulb jar to watch growth of bulb and see the roots.</p>	<p>Parts of a bulb powerpoint, labelling parts of a bulb sheet, 2 hyacinth bulbs (one to dissect and one to grow), sharp knife, bulb jar</p> <p>Vocab Bulb, grow, dissect, flower bud, tunic, basal stem/plate, scales, roots</p>	
<p>KC4 KC9</p>	<p>To identify and name a variety of common plants</p>	<p>8. Look at common plant sheets. Have children heard of or seen any of the plants?</p>		

Cut up sheets and children put name and plant picture together for commonly known plants (e.g. daisy, poppy, foxglove)

Plantlife Wild flower spotter sheet Town species				Plantlife Wild flower spotter sheet Town species			
							
Daisy <i>Bellis perennis</i> Daisy-like flowers with yellow centres. Thrives in areas of grass that are regularly mowed or trampled.	Yarrow <i>Arnica montana</i> Daisy-like flowers, usually with flat, daisy-like petals. Grows in light grassy areas. Leaves are feathery.	White clover <i>Trifolium repens</i> Small white flowers in tight, globular clusters. Leaves are trifoliate with a white base.	Bramble <i>Rubus fruticosus</i> Dark, woody stems with serrated leaves and deep blue fruit. Spines can be light, prickly or hairy.	Common poppy <i>Papaver Rhoeas</i> Annual with striking red flowers found where soil has been disturbed, so often seen on waste ground and roadsides.	Opium poppy <i>Papaver somniferum</i> Annual with large blue-green leaves and large pink or other flowers. Edible popping seeds come from the plant.	Herb robert <i>Geranium robertianum</i> Pink flowers on stems that are hairy with a strong, herbaceous, somewhat medicinal smell.	Rosesbay willowherb <i>Chamaenerion angustifolium</i> A large plant that is tall, growing in clumps. The tall, upright flowers are followed by fluffy seeds. Also known as 'crowsfoot' as it colonises sites after fire.
							
Pimpernel <i>Impatiens parviflora</i> Rising to 1m tall, with many small, bell-shaped flowers. Often grows in wet, grassy areas.	Climbing buttercup <i>Ranunculus repens</i> A low, sprawling plant with many small, yellow flowers. It has a strong, unpleasant smell and is toxic.	Ox-eye daisy <i>Leucanthemum vulgare</i> A low, spreading plant with many small, white flowers with yellow centres. It has a strong, unpleasant smell and is toxic.	Sedum <i>Sedum spectabile</i> A perennial plant with red stems and spreading, succulent leaves. It has many small, star-shaped flowers.	Red dead-nettle <i>Lamium purpureum</i> Dead-nettles have square stems and opposite, pointed leaves. They have many small, tubular flowers.	Snapdragon <i>Antirrhinum majus</i> A common garden flower seen in a wide variety of habitats. It has many small, tubular flowers.	Butterfly-bush <i>Buddleia davidii</i> A large bush with long, drooping branches and many small, tubular flowers. It is very fragrant.	Purple toadflax <i>Linaria purpurea</i> Many of its leaves are bright green and are very hairy. It has many small, tubular flowers.
							
Welsh poppy <i>Meibomia camphorata</i> Large, nodding, yellow flowers with double, narrow leaves. It grows in gardens and other places.	Dandelion <i>Taraxacum officinale</i> Bright yellow flowers above a mass of deeply lobed leaves. The seed heads can pull away to reveal the root of the plant.	Tomato <i>Lycopersicon esculentum</i> A very popular annual with a red, fleshy fruit. It has many small, tubular flowers.	Scarlet pimpernel <i>Impatiens sanguinea</i> A small, upright plant with many small, tubular flowers.	Tidy-tweeds <i>Centaurea jacobaea</i> The 5-petaled flowers of this plant have a strong, sweet smell. It has many small, tubular flowers.	Green alkanet <i>Periclymenon longifolium</i> A large perennial with many small, tubular flowers.	Wild fenestrel <i>Epipactis atrorubens</i> It has a long, narrow leaf with many small, tubular flowers.	Spanish bluebell <i>Hyacinthoides non-scripta</i> Early spring flowers with bell-shaped, pale blue flowers with thin petals. It is the most common bluebell in the area.

Send sheets home ([download from here](#)) and ask them to take photos of any they find in the garden or when out on a walk

Key Concept(s)	Key Question	Activities	Resources	Assessment
Materials – Summer (8 lessons)				
KC10	To identify and name different types of materials	1. Introduce materials – what something is made from. Use powerpoint to introduce materials being natural or humanly made As a class complete natural or humanly made quiz	Material, natural, humanly made	
KC4	To know the difference between an object and the materials from which it is made	2. Go on a material hunt around the classroom/around school. Children to record which materials they found and what they were used for. Discuss how different materials can be used for same things e.g. spoon can be metal, plastic, wooden. And that the same material can be used for different things.	Material, object, property, wood, metal, plastic, glass, brick, rock, paper, cardboard	
KC5 KC10	To describe the properties of everyday materials	3. Identify uses of everyday materials. Model stem sentence – “This is an _____. It is made from _____ because.....” Build up a bank of vocabulary to describe the properties of materials Materials song	Material, object, property, wood, metal, plastic, glass, brick, rock, paper, cardboard, hard, soft, opaque, transparent, sturdy, brittle, stiff, flexible	

KC8	To understand the properties of everyday materials	<p>4. Revise how objects are made from materials, and give an example e.g. a window being made from glass.</p> <p>Ask children to name as many different materials as they can, and some examples of objects that are made from that material. Recap how a property of a material tells us something about it e.g. paper is bendy. Children to think of as many examples of properties of materials as they can.</p> <p>Give them a series of properties of materials with their definitions, but jumbled up so that the definition does not match the property. Children need to cut up the properties and their definitions and use the books and dictionaries to re-arrange them so that they match, and then stick them on A3 paper.</p>	<p>Materials and their properties cards, cut up</p> <p>Material, object, property, wood, metal, plastic, glass, brick, rock, paper, cardboard, hard, soft, opaque, transparent, sturdy, brittle, stiff, flexible</p>	
KC10	To understand the terms absorbent and waterproof	<p>5. Introduce 'absorbent' (soaks up liquid) and waterproof (keeps water out). Show items and ask children if they think they're absorbent or not. How can we find out?</p> <p>Plan an experiment as a class then carry out in groups. Take photos to stick in books and children annotate.</p>	<p>Cloth/sponge, plastic bag, foil, cardboard/paper, cotton wool, tissue</p> <p>Experiment, test, prove, find out, absorbent, water proof</p>	
KC3 KC9	To perform simple tests to find a waterproof material	<p>6. Discuss which materials would be best for waterproofing. Introduce experiment – what is the best material to make an umbrella out of?</p> <p>In groups decide how to carry out the experiment and what to use (from the materials available). Carry out with adult support by cutting a piece of the material to a given size and pouring water on it</p>	<p>Materials for investigation – paper, fabric, metal (tin foil), plastic (cling film), cardboard</p> <p>Bucket or sink to test waterproof in</p> <p>Sheet to record findings on</p>	
KC2	To find out about the properties of materials	<p>7. Recap how the properties of a material or an object describe its characteristics. Explain that scientists test the properties of materials to make sure that they are suitable for an object.</p> <p>Watch video of scientists testing materials</p>	<p>Plastic rulers, dice, pencils, glass jars, aluminium cans, clay, paper bags, china cups, rubber bands, paper clips, clothing and coins</p> <p>Table to record findings</p>	

Children to test the properties of a number of items and record what they find by adding ticks and crosses to a table with the following headings:

ITEM		CAN BE ...					
Object	Material	Bent	Twisted	Squashed	Stretched	Scratched	Ripped
Ruler							

Emphasise that children should not test the materials to extremes e.g. not try to snap the plastic rulers or rip the clothes

KC8

To know how investors create new things

8. Look at [Charles Macintosh](#) (video).
 Discuss how he developed the rain coat by making a fabric waterproof.
 Children fill in [Charles Macintosh fact sheet](#)

inventor