Year 2 Science Curriculum

	Autumn	
Curriculum focus/links	**Living things and their habitats**	**Animals including humans**
Scientist / Inventor Study		
Key Vocabulary	living – Animals and plants are living things. Living things need to have their basic needs met to survive. used to be alive – If something used to be alive, it means it used to be living but isn't any more. Now, it is dead. never alive – Things made out of metal, glass, plastic or rock were never living because they did not move by themselves, grow or need food. basic needs - Basic needs are things that living things need to stay alive (water, food, shelter). habitat – A habitat is the natural place in which something lives. A habitat provides living things with everything they need to survive such as food, shelter and water. microhabitat – A microhabitat is a very small habitat that minibeasts live in. depend – Living things in a habitat depend on each other to survive. This means they need each other to meet their basic needs. basic needs – Basic needs are things that living things need to stay alive (water, food, shelter). survive – To survive is to stay alive	Adult, develop, young, offspring, live young, hatchling, hatch, larvae, eggs, carnivore, herbivore, omnivore, mammal, reptile,Ss amphibian, fish, bird egg, metamorphosis, larva(e), pupa, chrysalis, baby, toddler, child, teenager, tadpole, froglet, duckling, hatchling. Grow, develop, life cycle, life stages, human, baby, toddler, child, adult, independent. living, alive, shelter, safety, space, air healthy, suitable, suited, conditions, survive, depend, protection habitat, microhabitat, minibeast, basic needs suitable, suited, healthy, conditions, survive, depend, protection, world, desert, ocean, polar, rainforest
Substantive Concepts	In this unit children will learn about a variety of habitats and the plants and animals that live there. They learn to tell the difference between things that are living, dead and things that have never been alive, and apply this in a range of contexts. They make observations of a local habitat and the creatures that live there, investigating conditions in local microhabitats and how they affect the minibeasts found within them. This unit allows children to research a range of global habitats and how the living things that live there are suited to their environments, and also provides an introduction to the idea of dependency between plant and animal species.	In this unit, children learn about how humans and other animals are born, grow and change, and what we need to survive and be healthy. Children classify different kinds of animal babies, learn about the basic needs that are shared by humans and animals, and research the differing needs of animals within our care. Focusing their own experiences, children explore the need for humans to eat a varied diet, to keep themselves clean, and to take regular exercise. Throughout the unit, the learning materials encourage children to make positive choices that contribute to a healthy lifestyle.

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	Prior Learning In the Y1 Plants and the Y1 Animals including Humans units, children have learnt to identify, name, compare and classify a variety of plants and animals. They should be able to name some plants, including deciduous and evergreen trees. They should also be able to name some common mammals, fish, birds, reptiles and amphibians and know that some are carnivores, some are herbivores and some are omnivores.	
Scientific Enquiry	Observing over Time Observe a single habitat or microhabitat over time and record what animals and plants are living there to see if it changes over time. (Lessons 2, 3 and 4) Pattern Seeking Make comparisons in habitats to answer a question, e.g. In which part of the field are there more daisies? Where do you see the most butterflies? (Lessons 2, 3 and 4) Record numbers of minibeasts living in two different microhabitats and notice relationships between microhabitats and what lives there. (Lessons 3 and 4) Identifying, Grouping and Classifying Sort things into groups of living, dead or never alive. (Lesson 1) Identify microhabitats and species of minibeast that live there. (Lessons 3 and 4) Group living things based on the habitat they are found in. (Lessons 2 and 5) Identify parts of a food chain. (Lesson 6) Sort living things into groups of carnivores, herbivores or omnivores. (Lesson 6) Comparative and Fair Testing Investigate which materials woodlice prefer to live under. (Lessons 3 and 4) Researching Use identification keys of plants and animals to identify living things in habitats. (Lessons 2, 3 and 4) Use the non-fiction materials provided to research a habitat. Find out the conditions of the habitat and which animals and plants live there. (Lessons 2 and 5) Use the non-fiction materials provided to research the diets of animals that live in different habitats to understand how they depend on each other. (Lessons 5 and 6) Adult Guidance Science	Observing over Time Look at life cycles of different animals and how animals change as they develop. (Lesson 2) Order a human life cycle and note the activities humans can do at each stage. (Lesson 3) Observe the effect exercise has on our bodies. (Lesson 5) Pattern Seeking Notice patterns in the groups of animals whose offspring look the same as their adults, e.g. Do all reptile offspring look the same as their adult? (Lesson 1) Look at stages of a human life cycle and what humans learn to do at each stage. Is there a stage in which humans learn the most things? (Lesson 3) Notice patterns in what activities make our heart rates faster and slower. (Lesson 5) Identifying, Grouping and Classifying Identify and pair adult animals and their offspring. Identify whether the offspring does or does not look like its adult. Sort into animal groups. (Lesson 1) Identify different stages of a variety of life cycles. (Lesson 2 and 3) Identify at which stages in a human life cycle humans can do different activities. Sort the activities into groups. (Lesson 3) Sort animals into groups based on whether they are carnivores, omnivores or herbivores. (Lesson 4) Group activities based on whether or not they will raise heart rate. (Lesson 5) Sort food into the correct food group. (Lesson 6) Identify which food groups food items belong in, in order to make a balanced meal. (Lesson 6) Comparative Testing Investigate the impact of food on exercise, e.g. Count how many star jumps you can do in 30 seconds before lunch and then after lunch. (Lesson 5) Researching Use the Awesome Offspring to Healthy Adults eBook to find out about animals and their offspring. (Lesson 1) Use the Awesome Offspring to Healthy Adults eBook to research and complete animal and human life cycles. (Lesson 2 and 3) Use the Awesome Offspring to Healthy Adults eBook to research how to look after a

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		pet in order to write a fact file. (Lesson 4) Use the Awesome Offspring to Healthy Adults eBook to find answers to questions about exercise. (Lesson 5) Use the Awesome Offspring to Healthy Adults eBook to find out about healthy eating. (Lesson 6) Use the Awesome Offspring to Healthy Adults eBook to find out about how to be hygienic. (Lesson 6) Science

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	Spring	
Curriculum focus/links	Uses of everyday materials	**British Science Week** **British Science Week** **https://www.britishscienceassociation.org/british-science-week** **Theme dependant**
Scientist / Inventor Study	Scientist study – Charles Macintosh **Significant individual** **Timeline of key events and fact file.**	
Key Vocabulary	**Materials** • **wood:** Used for furniture, doors, and pencils • **metal:** Used for coins, cutlery, and pipes • **plastic:** Used for bottles, toys, and packaging • **glass:** Used for windows, bottles, and mirrors • **paper/cardboard:** Used for books, boxes, and packaging • **fabric:** Used for clothes and curtains • **rock/brick:** Used for walls and buildings • **water:** Used for drinking, washing, and in many products **Properties** • **Hard/soft:** Describes how difficult it is to change the shape of a material • **Smooth/rough:** Describes the texture of a material's surface • **Transparent/opaque:** Describes whether light can pass through a material. Transparent materials let light through completely, while opaque materials do not • **Waterproof:** Describes whether a material can prevent water from passing through	

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	• **Absorbent:** Describes whether a material can soak up liquid easily • **Flexible:** Describes whether a material can bend easily • **Rigid:** Describes whether a material is stiff and does not bend easily • **Shiny/dull:** Describes how reflective a material is **Actions and changes** • **Squashing:** Changing the shape of a solid by pressing it together • **Bending:** Changing the shape of a material by curving it • **Stretching:** Changing the shape of a material by pulling it longer • **Twisting:** Changing the shape of a material by turning it • **Breaking/tearing:** The act of a material being pulled apart or snapped	
Substantive Concepts	Pupils should be taught to: identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	
Scientific Enquiry	Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass). They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials. Pupils might find out about people who have developed useful new materials, for example Charles Macintosh. Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.	

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	Summer	
Curriculum focus/links	Plants Scientist study – Jane Colden	Habitats – African Animals Scientist study – Jane Goodall
Scientist / Inventor Study	Scientist study – Jane Colden **Significant individual** **Timeline of key events and fact file.**	Scientist study – Jane Goodall **Significant individual** **Timeline of key events and fact file.**
Key Vocabulary	words relating to plants: mature, germination, growth, survive, healthy, shoot, seedling words relating to growth: water, light, (suitable) temperature, warmth, grow, healthy, cold, dark, wither, dry, limp, dry, green, yellow	words relating to habitats: live, habitat, micro-habitat (and examples e.g. under a leaf, under a stone or log) home, environment, suited, needs, (basic needs) satisfy, provide (provide for), provides, depend (on each other), variety, food, food chain, consumer, predator, prey, source (of food) water, air, shelter, safety, conditions (of habitats and microhabitats e.g. wet, dry, dark). Names of habitats e.g. woodland, seashore, desert, rainforest
Substantive Concepts	Pupils should be taught to: notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. **Scientific enquiry types** • **Observing over time:** Track the growth of the same plant over a period, recording changes weekly • **Comparative testing:** Set up a fair test to see how a single variable, like water or light, affects plant growth. For example, grow one plant with water and another without, or one in sunlight and one in a dark cupboard. • **Identifying, grouping, and classifying:** Observe different plants in a schoolyard or local park and group them based on their habitats, such as "plants that like shade" or "plants that grow in dry soil".	Pupils should be taught to: identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plants and animals in their habitats, including microhabitats describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **Key concepts for Year 2 scientific enquiry on African habitats** • **Habitat definition:** A habitat is a natural home where an animal or plant lives and has its basic needs met. • **Basic needs:** All habitats must provide food, water, shelter, and space for living things to survive and reproduce. • **African habitats:** Africa has diverse habitats, such as savannas, rainforests, and deserts, each supporting different plants and animals. • **Adaptation:** Animals have special features (adaptations) that help them live in their specific habitat. For example, a giraffe's long neck helps it reach high leaves in the savanna.

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	• **<u>Pattern seeking</u>:** Look for patterns in the observations. For instance, do all the plants in a shady area have large, broad leaves? Or do the plants in the sun have thinner leaves? • **<u>Researching</u>:** Use books, websites, or fact sheets to find out what specific plants need to survive.	• **Interdependence:** Plants and animals are interdependent. Plants provide food for herbivores, and animals help with pollination
Scientific Enquiry	Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy. During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment, performing simple tests , identifying and classifying, using their observations and ideas to suggest answers to questions. gathering and recording data to help in answering questions. Pupils in years 1 and 2 should explore the world around them and raise their own questions. They should experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions. They should use simple features to compare objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should begin to notice patterns and relationships. They should ask people questions and use simple secondary sources to find answers. They should use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out. With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language. These opportunities for working scientifically should be provided across years 1 and 2 so that the expectations in the programme of study can be met by the end of year 2. Pupils are not expected to cover each aspect for every area of study.	A Year 2 scientific enquiry about African habitats should focus on comparing different habitats within Africa, like the savanna and rainforest, and the animals and plants that live there. Key activities include researching what animals need to survive in these habitats (food, water, shelter) and creating simple food chains for each, demonstrating how living things are suited to their specific environments.