

LKS2 Cycle 2 – Autumn 1 and 2

Builds on KS1 Living Things and Their Habitats

- Know how to identify whether things are alive, dead or have never lived.
- Know how to explore and compare the differences between things that are living, dead, and things that have never been alive.
- Know how to name different plants and animals and describe how they are suited to different habitats.
- Know how 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.
- Know how to identify and name a variety of plants and animals in their habitats, including micro-habitats.
- Know how to 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.

Types of Knowledge	Disciplinary Knowledge	Substantive Knowledge	Vocabulary	Experience
Will study...	Working scientifically – knowledge of how scientific knowledge is generated and grows.	The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.		
A SCIENTIST studying Biology– Living Things and their Habitats     	I can I can make systematic and careful observations over time, looking at similarities and differences. I can ask questions surrounding patterns I have found in data. I can gather, record, classify and present data in a variety of ways to help in answering questions. I can set up simple practical enquiries, comparative and fair tests. I can use secondary sources with adult support to help clarify results seen. I can ask relevant questions and use different types of scientific enquiries to answer them using scientific language from the national curriculum. I can develop a deeper understanding through talk, asking questions about scientific phenomena, analysing functions and interactions more systematically.	I know I know that living things can be grouped in a variety of ways. I know how to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. I know that environments can change and that this can sometimes pose dangers and have an impact on living things.	Classification, mammals, reptile, amphibian, bird, fish, vertebrate, invertebrate, key.	Classifying living things. Research into endangered animals and their habitats. Name the 5 classes of vertebrates. Give examples of a class of invertebrate. Can you identify the different types of trees based on their key features? What is a food chain? How do we describe an animal at the top of the food chain? Are animals ever both predator and prey? How can we identify different living things into their classes? Find different ways of classifying living things. What is similar/different between different food chains? Which living things do you think are more likely to survive and why? Can I create a glossary of key terms about producers and consumers? Research into the subcategories of classes of animals and what key features classifies them as that type of animal.

	I can take measurements, using a range of scientific equipment, with increasing accuracy and precision. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can use results to draw simple conclusions, make predictions for new values and suggest improvements. I can classify, group and present data in a series of ways to help in answering questions. I can identify differences, similarities or changes related to simple scientific ideas and processes. I can use straightforward scientific evidence to answer questions or to support my findings.			What is more dangerous to living things, sudden or gradual change?
--	---	--	--	---

LKS2 Cycle 2 – Spring 1

Types of Knowledge Will study...	Disciplinary Knowledge Working scientifically – knowledge of how scientific knowledge is generated and grows.	Substantive Knowledge The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.	Vocabulary	Experience
A SCIENTIST studying Physics – Electricity  Physical World and Space    	I can Make systematic and careful observations over time, looking at similarities and differences. Ask questions surrounding patterns I have found in data. Gather, record, classify and present data in a variety of ways to help in answering questions. Set up simple practical enquiries, comparative and fair tests. Use secondary sources with adult support to help clarify results seen. Ask relevant questions and use different types of scientific enquiries to answer them using scientific language from the national curriculum. Develop a deeper understanding through talk, asking questions about scientific phenomena, analysing functions and interactions more systematically. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	I know I know electrical appliances need a source of electricity to work. I know how to identify common appliances that run on electricity. I know a complete circuit is needed for an electric current to flow. I know how to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. I know whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. I know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. I know some common conductors and insulators, and associate metals with being good conductors.	Bulb, cell, batteries, wires, circuit, conductor, insulator, switch, light source, components, devices, electrode, buzzer, crocodile clip, voltage, current.	Build a circuit. Fair testing with the use of conductors and insulators. Draw diagrams of circuits. Identify sources of light. What is a circuit? What is a component? What is a conductor/insulator? Which materials are conductors/insulators? What is the difference? How can the bulb be made dimmer/brighter in a circuit? Do all batteries have the same power? What can stop components from working in a circuit? Are all conductors metal? Are these materials electrical conductors or insulators? How does a switch work? How do electric cars work? (Research linked to D&T project).

	Use results to draw simple conclusions, make predictions for new values and suggest improvements. Classify, group and present data in a series of ways to help in answering questions. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support my findings.			
--	---	--	--	--

LKS2 Cycle 2 – Summer 1				
Types of Knowledge Will study...	Disciplinary Knowledge Working scientifically – knowledge of how scientific knowledge is generated and grows.	Substantive Knowledge The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.	Vocabulary	Experience
A SCIENTIST studying Physics – Sound  Physical World and Space  	I can Make systematic and careful observations over time, looking at similarities and differences. Ask questions surrounding patterns I have found in data. Gather, record, classify and present data in a variety of ways to help in answering questions. Set up simple practical enquiries, comparative and fair tests. Use secondary sources with adult support to help clarify results seen.	I know I know how sounds are made, associating some of them with something vibrating. I know that sounds get fainter the further they are from the source. I know that vibrations from sounds travel through a medium to the ear. I know the volume of a sound can be changed.	pitch, frequency, loudness, volume, solid, liquid, gas, particle, vibration, dissipate, propagate, impact, distance, energy.	How sound is made. How it travels through gases, liquids and solids. What happens when materials vibrate How pitch is related to frequency How distance effects pitch. How do sounds start? What is frequency? What is pitch? What is volume? What happens when materials vibrate? Does sound travel at the same speed all the time? How is pitch related to frequency? Does distance/length of a material effect the pitch of sound?

 Data Analysis  Explanations	Ask relevant questions and use different types of scientific enquiries to answer them using scientific language from the national curriculum. Develop a deeper understanding through talk, asking questions about scientific phenomena, analysing functions and interactions more systematically. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use results to draw simple conclusions, make predictions for new values and suggest improvements. Classify, group and present data in a series of ways to help in answering questions. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support my findings.	I know how to investigate that some materials reflect sound and some absorb sound. I know how to find patterns between the pitch of a sound and features of the object that produced it. I know how to find patterns between the volume of a sound and the strength of the vibrations that produced it.		Is a material more likely to conduct sound if it is denser? Is pitch and loudness the same thing? What happens to the loudness of a sound as it gets further from its source? Do we hear a sound the moment it is made? Can sound travel through solids, liquids and gases? Does sound travel faster in the air than solids?
--	---	--	--	--

LKS2 Cycle 2– Summer 2

Builds on Y1 and 2 Animals including Humans

- describe and compare observable features of animals from a range of groups.
- group animals according to what they eat .
- identify and name a variety of common animals including fish, amphibians, reptiles, mammals and birds.
- identify and name a variety of common animals that are carnivores, herbivores and omnivores.
- locate parts of the human body, including those related to the senses.
- name and locate parts of the human body, including those related to the senses and describe them.
- describe the basic needs of animals for survival and the main changes as offspring from young animals, including humans, grow into adults.
- use simple food chains to describe these relationships.
- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

describe the basic needs of animals, including humans, for survival (water, food and air).

Types of Knowledge	Disciplinary Knowledge	Substantive Knowledge	Vocabulary	Experience
Will study...	Working scientifically – knowledge of how scientific knowledge is generated and grows.	The scientific knowledge and conceptual understanding – the concepts, laws, theories and models.		
A SCIENTIST studying Biology – Animals including Humans.     	will understand ... Make systematic and careful observations over time, looking at similarities and differences. Ask questions surrounding patterns I have found in data. Gather, record, classify and present data in a variety of ways to help in answering questions. Set up simple practical enquiries, comparative and fair tests. Use secondary sources with adult support to help clarify results seen. Ask relevant questions and use different types of scientific enquiries to answer them using scientific language from the national curriculum. Develop a deeper understanding through talk, asking questions about scientific phenomena, analysing functions and interactions more systematically.	I know I know the names and sequence of key organs in the digestive system. I know how to describe the simple functions of the basic parts of the digestive system in humans. I know how to identify the different types of teeth in humans and their simple functions. I know the difference between the shape and function of human teeth. I know how to keep their teeth healthy. I know what decays human teeth.	food chain, predator, prey, consumer, producer, environment, habitat, carnivore, herbivore, omnivore, saliva, intestine, molar , incisor, canines, pr molar, rectum ,digest oesophagus , stomach small intestine, large intestine, stools producer, predator, prey	Identifying and labelling digestive organs . Finding out about tooth decay and how to look after their teeth. Making models of human and animals teeth. Investigating decay using eggs and different liquids. Comparing toothpastes. Are bones flexible? What are the names and functions of some of our bones? Name some of the key muscles in our body. What happens to muscles when you exercise them? What are the different nutrient groups and the food types in each group? Which animals are carnivores, herbivores and omnivores? What is the purpose of a digestive system? Where does digestion start? What are the names for all the organs involved in the digestive system? How long is the intestine? What are teeth made of? What does brushing your teeth do?

	Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use results to draw simple conclusions, make predictions for new values and suggest improvements. Classify, group and present data in a series of ways to help in answering questions. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support my findings.	I know the role of teeth in human digestive system. I know how to construct and interpret a variety of food chains, identifying producers, predators and prey.		What is the purpose of each type of tooth? Do all animals have a skeleton? How do muscles contract and relax? Is all milk healthy? Do all animals have the same digestive system? Can bones be weakened? How much vitamin C does juice really contain? What impact do different drinks have on our teeth? What happens if you eat too many sugary foods? Do human babies have more bones than human adults? What effect does acid have on teeth? How does plaque build up on teeth and what is the effect? What are the different functions of bones and what do they contain? What is an x-ray? Which insect has the strongest legs? Which animals have similar muscles to humans? Are all weight loss diets healthy? Are all fats bad for you? What happens to you if you don't get enough of each nutrient group. Why do we chew our food? How do dentists fix broken teeth? Is tooth loss permanent in all animals?
--	---	--	--	---