Year Group 2

Term 1

Everyday Materials

Living things and their habitat | Everyday materials | Plants | Animals including humans

Enquiry Question	What happens to different materials when you bend, twist or stretch?		
Scientific Enquiry	• Identify and classify materials its uses and properties • Observe and record observations • Perform simple tests by recognising and answering questions in different ways.		
NC Objectives	• Identify and **compare the suitability** of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock and paper. • Find out about how the shapes of solid objects made from some materials can be changes by squashing, bending, twisting and stretching.		
Curriculum Coherence	**Prior Knowledge** • Distinguish between an **object and the material** from which it is made. (Y1) • **Identify and name** a variety of every day materials, including wood, plastic, glass metal, water and rock.(Y1) • Describe simple **physical properties** of a variety of everyday materials. **Comparing and grouping** on physical properties.	**Future Learning** Develop knowledge of solids, liquids and gases. Compare materials based on properties including: hardness, solubility, transparency, conductivity and response to magnets. (Y5) Demonstrate that dissolving, mixing and changes or state can reversable and irreversible explaining that some result in the formation of new materials. (Y5)	
	Vocabulary Material, property, Obstacle, Construction, Stretchy, elastic, force, bend.	**High Quality Text** 	**Misconceptions** Materials can only be used for one purpose	**Assessment/Outcomes** Retrieval Practice Written Task Online Platform

Year Group 2

Term 1

Everyday Materials

Living things and their habitat 

Everyday materials 

Plants 

Animals including humans 

Unit Summary: This unit '**Uses of everyday materials**' takes children through six lessons where they learn how 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**. They also learn how to **find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.** The lessons have been written in sequence and are designed to challenge children to recall the knowledge and skills they have covered in the previous lesson(s). **This is the third unit the children have covered on materials and builds on the knowledge they have covered during year 1**	
Knowledge Sequence	Lesson 1 – What materials are best for…? During the lesson the children are recapping on their knowledge and understanding of different types of materials. They review the difference between a material and an object. The children will need to consider why certain materials are used to make certain objects, what makes them suitable. Consider the properties of the shape, cost and ease of construction. DE Lesson 1
	Lesson 2 – What materials are best for making a bridge? Within this lesson the children are encouraged to use the knowledge they have gathered from their Y1 unit and the first lesson to consider the properties of certain materials and why they might be best suited for the construction of certain objects or structures. The children will need to use their knowledge of natural and man-made materials and consider the properties that make it suitable. The children will select from the materials available and consider how the construction process and support the materials DE lesson 2
	Lesson 3 – What happens to a material when you stretch, pull or twist? During this lesson the focus shifts to look at the property of stretching or twisting. The children will investigate which material is able to stretch the most. Is the material man-made or natural? Are all man-made materials stretchy? When might these materials be used? DE lesson 3
	Lesson 4 – How do materials change their shape? This lesson progresses the children's learning to consider how a material will change their shape**.** The children will consider the idea that a solid will hold its shape but that by applying a force, it can change its shape. Opportunities will be provided for the children to apply forces to different materials to consider what happens to its shape. They will use the terms: bending, stretching, twisting, squashing**.** DE Lesson 4
	Lesson 5 – What materials is best for….? Next up the children begin to look at the features and properties of different materials to keep someone warm and dry? They will look at the Scientist Charles Macintosh who created the first waterproof material and how his has been adapted to allow materials to remain lightweight but also waterproof. The children will investigate different materials and the properties that will make a good coat for a site inspector. DE Lesson 5
	Lesson 6 – How does mixing materials impact a structure? During this final lesson in the sequence, the children consider how materials and their properties can be adjusted and developed through mixing materials. This can include improving the weight, flexibility and durability. They will link their learning to their knowledge of Josh McAdam. The children will investigate what happens when materials are added to a solid – does this improve the strength of the material? DE Lesson 6
Aspiration	Your key knowledge will help you to be one of the following: structural engineer, builder, Building site inspector, crane driver, Supply chain manager.
Scientist/Historical figure	Charles Macintosh - Charles Macintosh | Raincoat inventor, Rubber Chemistry, Industrial Revolution | Britannica– Inventor of the waterproof clothing and later the Macintosh coat.

Year Group 2

Term 2

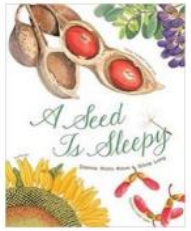
Plants

Living things and their habitat

Everyday materials

Plants

Animals including humans

Enquiry Question	What do plants need to grow?			
Scientific Enquiry	To be able to ask and answer questions in different ways. Observe closely using simple equipment. To be able to gather and record data to help answer different questions.			
NC Objectives	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and suitable temperature to grow and stay healthy.			
Curriculum Coherence	**Prior Knowledge:** Identify and name a variety of common wild & garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.		**Future Learning:** Identify and describe the functions of different parts of the flowering plant. (Y3) Explore the requirements for growth (air, light, water, nutrients) how this varies from plant to plant. Investigate how water is transported.	
	Vocabulary Photosynthesis, Carbon Dioxide, Oxygen, Glucose, Pollination, Germination, Crop, Forest.	**High Quality Text** 	**Misconceptions** All plants start out as seeds. Seeds and bulbs need sunlight to germinate:	**Assessment/outcomes** Retrieval Practice Written Task Online Platform

Year Group 2

Term 2

Plants

Living things and their habitat 

Everyday materials 

Plants 

Animals including humans 

Unit Summary: This unit '**Plants**' takes children through six lessons where they learn how to: **observe and describe how seeds and bulbs grow into mature plants;** and **find out and describe how plants need water, light and suitable temperature to grow and stay healthy.** The lessons have been written in sequence and are designed to challenge children to recall the knowledge and skills they have covered in the previous lesson(s). **This second unit on plants and builds on the knowledge children have covered during their unit on plants in year 1.**

Knowledge Sequence	Lesson 1 – Do all plants grow from seeds? During the lesson the children are going Recap on Year 1 learning about seeds and plants. Do the children remember that plants start as a seed, then a seedling, a young plant and then an adult plant? Show the children a selection of seeds and a selection of bulbs. Ask the children to identify the differences and similarities between the seeds and bulbs they can see. Children will then dissect the seeds and bulbs to look at the internal structure, label and compare. DE Lesson 1
	Lesson 2 – What do plants need to grow? Within this lesson the children will use all of their knowledge so far to consider what a plant might need to grow. The children will carry out different tests so you can gather results as a class. Some children should test the effects of water and no water; light (natural light, artificial light and no light); temperature (next to a radiator, room temperature and freezer) or amounts of soil. Discuss with the children the need for a control plant - how should they set up this plant? DE lesson 2
	Lesson 3 – How do we keep plants healthy? During this lesson have a look at the children's experiments to see how the plants are growing so far. Look at the control plant. Discuss the important elements the control plant is receiving: space to grow (soil), water, sunlight and a suitable temperature. During the session, the children will go on to explore and explain how plants make their own food through photosynthesis. DE lesson 3
	Lesson 4 – What is the life cycle of the plant? This lesson the children review their understanding of photosynthesis remind them that this is the process by which plants produce their own energy using the suns light. Next up go through the process of a seed germinating. Firstly, the seed germinates to become a seedling. It then grows to a young plant and produces flowers and pollen. Discuss the dispersal of pollen by wind, bees and animals. DE Lesson 4
	Lesson 5 – What do plants need to stay healthy? This lesson provides the opportunity for children to think back to the experiment the children set up in Lesson 2. What questions did the children ask? Which element did they change to see how it affected the growth of their plant? Have a look at the control plant and discuss how it has changed. Discuss with a partner how their own plant has changed. Does it look healthy? Children to orally present their experiment to the class and say what has happened and why. DE Lesson 5
	Lesson 6 – How do plants adapt? During this final lesson in the sequence, we will explore plants that live in different habitats? Are any plants living in the desert? Do you think plants can live underwater? What do you think are the problems for plants living in these habitats? We will use this to explore pupils knowledge of plant growth. DE Lesson 6
Aspiration	Your key knowledge will help you to be one of the following: Farmer, gamekeeper, horticulture, food scientist, Landscape gardener.
Scientist/Historical figure	Poppy Okotcha - Home | Poppy Okotcha Horticulturalist

Year Group 2

Term 3

Living things and their habitats

Living things and their habitat

Everyday materials

Plants

Animals including humans

Enquiry Question	Where do they live and how do they survive?			
Scientific Enquiry	To be able to ask questions and recognise they can be answered in different ways. To be able to identify and classify.			
NC Objectives	Explore and compare the differences between things that are **living, dead and things that have never been alive.** 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 names a variety of plants and animals** in their habitats, including micro-habitats. Describe **how animals obtain their food** from plants and other animals using the idea of a simple **food chain** and identify the source of the food.			
Curriculum Coherence	**Prior Knowledge**		**Future Learning** Recognise that living things can be grouped in different ways. (Y4) Explore and use classification keys to help group and identify & name a range of living things. (Y4) Recognise that **environments can change** and that this can pose dangers to living things. (Y4)	
	Vocabulary Reproduce, excrete, respire, habitat, microhabitat, survive, producer, consumer	**High Quality Text**  	**Misconceptions** A habitat is an animal's 'home' All animals can survive in the same habitat.	**Assessment/outcomes** Retrieval Practice Written Task Online Platform

Year Group 2

Term 3

Living things and their habitats

Living things and their habitat  Everyday materials  Plants  Animals including humans 

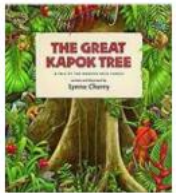
Unit Summary: This unit '**Living things and their habitats**' takes children through six lessons where they: explore and compare the differences between things that are living, dead, and things that have never been alive. They learn how to identify and name a variety of plants and animals in their habitats, including microhabitats; and 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.	
Knowledge Sequence	Lesson 1 – Am I living, dead or never alive? During the lesson the children are explore what processes do living things all have in common? Moving, reproducing, sensing, growing, respiring, excretion and nutrition - MRS GREN. We compare the things that are similar and different between plants and animals and how we can distinguish if something has never been alive or is dead. DE Lesson 1
	Lesson 2 – What is a microhabitat? Within this lesson the children will explore the question What is a habitat? What is the difference between a habitat and a microhabitat? Ensure the children understand that a habitat is a large area, such as the ocean, a forest or a desert, whereas a microhabitat is a much smaller area that can be found within a habitat. DE lesson 2
	Lesson 3 – What makes a good microhabitat? During this lesson the children will begin to apply their knowledge from the previous lesson to explore what would make a good microhabitat. Present the question: what conditions could we create so that animals and plants could survive in our playground or wildlife area? To design a suitable microhabitat, we need to consider the needs of the living things that will be living in it, this might include: the location, soil, plants, water, shelter, diversity and access to things like food. DE lesson 3
	Lesson 4 – Animals need food to survive in their habitat – what might this be? This lesson progresses the children's learning to consider Discuss with the children that animals will only live somewhere if they have enough to eat. The types of food that animals eat to survive in their habitats can vary greatly depending on the animal species and its location. Introduce the children to the terms producer and consumer and consider these for different habitats. DE Lesson 4
	Lesson 5 – What is a food chain? This lesson provides the opportunity for children to Think about the animals the children researched in the previous session - what did they eat? Thinking back to previous learning in Year 1, can they remember what each of these terms means - herbivore, carnivore and omnivore? Explain the idea of a food chain; e.g. grass to cow to human. The children should use their knowledge of what animals eat to show how a food chain works. A food chain is a sequence of organisms, where each organism is the food source of the next in the chain. The energy flow in a food chain is unidirectional, being transferred from lower to higher trophic levels DE Lesson 5
	Lesson 6 – How does the food get from the farm to the supermarket? During this final lesson in the sequence, ask the children if they know how most of our food is provided and where it comes from. Show the children how most of our food comes from a farm and the processes it goes through to reach our plates. Visit the local farm to explore this in real life. DE Lesson 6
Aspiration	Your key knowledge will help you to be one of the following: Animal care worker, Vet, Dog Trainer, Bee Keeper, Rural Surveyor
Scientist/Historical figure	William Kirby - Reverend William Kirby, the Father of Modern… | The Linnean Society

Year Group 2

Term 4

Living things and their habitats 2

Living things and their habitat | Everyday materials | Plants | Animals including humans

Enquiry Question	Are all habitats the same?		
Scientific Enquiry	• To be able to ask questions and recognise they can be answered in different ways. • To be able to gather and record data to help answer questions. • To be able to identify and classify.		
NC Objectives	• Explore and compare the differences between things that are **living, dead and things that have never been alive.** • Describe **how animals obtain their food** from plants and other animals using the idea of a simple **food chain** and identify the source of the food.		
Curriculum Coherence	**Prior Knowledge** 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. Describe **how animals obtain their food** from plants and other animals using the idea of a simple **food chain.**		**Future Learning** Recognise that living things can be grouped in different ways. (Y4) Explore and use classification keys to help group and identify & name a range of living things. (Y4) Recognise that **environments can change** and that this can pose dangers to living things. (Y4)
	Vocabulary Classify, group and sort. Organism, rainforest, endangered, biodiversity, ocean, ecosystem, desert.	**High Quality Text** 	**Misconceptions** Only fish live in the sea.	**Assessment/Outcomes** Retrieval Practice Written Task Online Platform

Year Group 2

Term 4

Living things and their habitats 2

Living things and their habitat 

Everyday materials 

Plants 

Animals including humans 

Unit Summary: This unit '**Living things and their habitats – Habitats around the world**' takes children through six lessons where they: **explore and compare the differences between things that are living, dead, and things that have never been alive**; they learn 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**. They learn how to **identify and name a variety of plants and animals in their habitats, including microhabitats** and finally they learn 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**.	
Knowledge Sequence	Lesson 1 – What is a habitat? During this lesson the children explore that A habitat is a place where a particular organism or community of organisms lives and thrives. Habitats can be found on land, in water, or even in the air, and they can vary widely in terms of their characteristics and the types of organisms that live there. DE Lesson 1
	Lesson 2 – Why is the environment changing and what is causing it? Within this lesson the Children identify how environments are constantly changing and what humans can do to look after the environment in which they live. Children identify what they can do to take care of their environment. Encourage children to identify ways in which the impact humans have on their environment can be reduced or managed. DE lesson 2
	Lesson 3 – Will the rainforests survive? During this lesson the focus shifts to look children will pick an issue associated with the rainforest and design a campaign to either make people more aware of the issue or inform them how they can help to protect the rainforest. They will be expected to research the issues effecting the rainforest and find a way of sharing this information with their class and the community. DE lesson 3
	Lesson 4 – What life lives in the ocean? This lesson progresses the children's learning and focus to look at how the ocean is home to many different creatures – mammals, such as whales, seals and dolphins; reptiles, such as turtles; coral and plants. It is a habitat which provides the means for these living things to thrive. The children will explore a cross section of the ocean and consider the plants and animals that survive in these different areas. DE Lesson 4
	Lesson 5 – Are the arctic and Antarctic the same? Next up the children begin to look at the features of the Arctic and Antarctic and the fact that both polar regions located at the far northern and southern latitudes of the Earth, respectively. While they share many similarities, there are also important differences between these two habitats. Identify which animals live in the Arctic versus those animals which live in the Antarctic. Ask the children to create a Venn diagram to identify those animals which live in both polar regions. DE Lesson 5
	Lesson 6 – What is my habitat? During this final lesson in the sequence, the will use their knowledge of the features to create their own habitat in a shoe box.
Aspiration	Your key knowledge will help you to be one of the following: Marine Biologist, conservationist, fisherman, land surveyor.
Scientist	Darwood Qureshi - Marine Biologist - NUSTEM – Marine Biologist

Year Group 2

Term 5&6

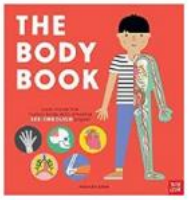
Animals including Humans

Living things and their habitat 

Everyday materials 

Plants 

Animals including humans 

Enquiry Question	What do humans need to survive and thrive? Are all animal and human cycles the same?	
Scientific Enquiry	To be able to ask questions and recognise they can be answered in different ways. To be able to observe closely. To be able to perform simple tests. To be able to gather and record data to help answer questions.	
NC Objectives	Know that animals, including humans, have offspring which grown into adults. Describe the basics needs for animals and humans.	
Curriculum Coherence	**Prior Knowledge** • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Describing and comparing the structure of a variety of common animals (Y1) • Identify and name a variety of common animals that are carnivores, herbivores and omnivores (Y1)	**Future Learning** Identify that animals including humans, need the right types and amount of **nutrition** and that they cannot make their own food: they get nutrition from what they eat. (Y3) Identify that humans and some animals have skeletons and muscles for support, protection and movement. (Y3)
	Vocabulary Nutrition, healthy, protein, carbohydrate, dairy, fat, exercise, hygiene. Life cycle, offspring, reproduction, transformation, metamorphosis.	**High Quality Text** 
	Misconceptions Growth is only about getting taller, All foods are equally nutritious All animals reproduce in the same way. Their offspring look like their parents.	**Assessment/outcomes** Retrieval Practice Written Task Online Platform

Year Group 2

Term 5&6

Animals including Humans 1

Living things and their habitat 

Everyday materials 

Plants 

Animals including humans 

Unit Summary: This unit '**Animals, including humans 1 - Growth**' takes children through six lessons where they learn how to **notice that animals, including humans, have offspring which grow into adults**. They **find out about and describe the basic needs of animals, including humans, for survival (water, food and air)** and finally they learn how to **describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene**.	
Knowledge Sequence	Lesson 1 – What do animals need to survive? Start the lesson by exploring what do the children remember about omnivores, carnivores and herbivores? Throughout the lesson we will then explore what animals will need to survive. Make links to their knowledge and understanding from the habitats unit. DE Lesson 1
	Lesson 2 – What do humans need to survive? Within this lesson the children will recap their understanding of the basic needs of humans and animals. The lesson will focus on what humans might 'want' and what they might 'need'. The pupils will need to be able to recall the need for: shelter, food, water, temperature, safety. DE lesson 2
	Lesson 3 – Can I eat anything? During this lesson the children will begin to consider the importance of diet and in particular the requirement for humans to have a balanced diet. During this session the children will explore the 5 different food groups and how much of each makes up a healthy diet. DE lesson 3
	Lesson 4 – Are all diets healthy? This lesson progresses the children's learning to reinforce the previous learning and to teach the children about the different types of food they might come across in everyday life. In this lesson, the children should learn about fresh food and the advantages and disadvantages of pre-cooked and processed foods. During this week the children can also cook with the Aspens team and take home food to share with their families DE Lesson 4
	Lesson 5 – How does exercise impact our bodies? This lesson provides the opportunity for children to explore the benefits of taking regular exercise. Explain to them that exercising is one part of keeping healthy, alongside eating healthily and keeping clean. The children will learn all the different ways in which exercise can strengthen their bodies and help with their mental health. DE Lesson 5
	Lesson 6 – Why is it important to keep clean? Discuss with the children the importance of good hygiene and the spread of germs. Before the children carry out the pepper and soap investigation, model to the class how to wash your hands with soap and warm water effectively. The Pepper and Soap Investigation: The children discover the importance of washing their hands by completing the pepper and soap investigation. The pepper floats on the water because it is less dense or lighter than the water. Remember that the pepper represents our germs in this experiment. DE Lesson 6
Aspiration	Your key knowledge will help you to be one of the following: Health trainer, Physiotherapist, dietician, sports coach.
Scientist/Historical figure	Florence Nightingale - Florence Nightingale facts for kids | National Geographic Kids (natgeokids.com) - Nurse

Year Group 2

Term 5&6

Animals including Humans 2

Living things and their habitat  Everyday materials  Plants  Animals including humans 

Unit Summary: This unit '**Animals, including humans 2 – Life cycles**' takes children through six lessons where they are taught how to **notice that animals, including humans, have offspring which grow into adults**.

Knowledge Sequence	Lesson 1 – What are the stages of the human life cycle? Explore the different stages of the human life cycle and the changes a human goes through as they develop from a baby to an adult. Discuss what is possible for the human to do at each stage and compare this to the previous stage. Encourage the children to think about their relatives when comparing each stage. It is important to discuss that humans gradually change over time and each stage is not overnight. DE Lesson 1
	Lesson 2 – What happens as we get older? Within this lesson the children will explore the 2 additional stages of the human life cycle - foetus and toddler. Encourage the children to discuss their own experiences of family members expecting babies and whether there are any twins in the class/school. Compare different stages of the human life and identify similarities and differences. Encourage the children to think respectfully about the older generation and how much they can offer the community. DE lesson 2
	Lesson 3 – Why do we look like our parents? During this lesson the children will begin to consider ask the children to name the offspring of different animals (goat – kid; lion – cub; human – baby; horse – foal; cow – calf; etc). The children will discover how to match offspring to their parents through their inherited features and genes. Explore some animals where the offspring and parents do not closely resemble each other. DE lesson 3
	Lesson 4 – What is the life cycle of the chicken? This lesson progresses the children's learning to Discuss the main processes of the cycle of life - birth, growth, reproduction and death. Encourage the children to think about other animals that lay eggs: fish, insects, reptiles and amphibians. Link back to the work done in the Year 1 unit 'Animals including humans: All about animals'. Explore the life cycle of a chicken, from an egg, a hatchling, a chick and then an adult chicken. Compare this to the life cycle of a human, identifying a few basic differences. DE Lesson 4
	Lesson 5 – What is the life cycle of a butterfly? This lesson provides the opportunity for the children will discover how a caterpillar changes into a butterfly. They will learn about the different stages of the caterpillar's transformation from larva to chrysalis, the process of metamorphosis and finally the emergence of a butterfly. Compare how this is similar and different to other animals? DE Lesson 5
	Lesson 6 – What is the life cycle of a frog? During this final lesson in the sequence, the children will learn the stages a frog goes through before it becomes an adult frog. Encourage them to draw comparisons with the life cycle of a butterfly, including how the offspring of both species do not resemble their parents. DE Lesson 6
Aspiration	Your key knowledge will help you to be one of the following: dietician, Doctor, Vet, Care worker, Ambulance worker/paramedic.
Scientist/Historical figure	Dr Kelly Blacklock - Dr Kelly Blacklock (BVM&S DipECVS SFHEA PGCert PhD FRCVS) | The University of Edinburgh – Veterinary Doctor