Science Overview and Progression of Skills – Cycle B

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	Year 1/2	Year 1/2	Year 3/4	Year 3/4	Year 5/6	Year 5/6
	Cycle A	**Cycle B**	**Cycle A**	**Cycle B**	**Cycle A**	**Cycle B**
Aut 1	Naming and grouping animals **Oak academy Unit 1 (Y1)**	Living things and where they live **Oak academy Unit 5 (Y2)**	Introduction to light and shadows **Oak academy Unit 6 (Y3)**	Introduction to the human digestive system **Oak academy Unit 1 (Y4)**	The human circulatory systems **Oak academy Unit 1 (Y6)**	Properties, changes and separating materials **Oak academy Unit 1 (Y5)**
Aut 2	Seasonal Changes: autumn and winter **Oak academy Unit 2 (Y1)**	Healthy me **Oak academy Unit 6 (Y2)**	Simple forces including magnets **Oak academy Unit 3 (Y3)**	Introduction to states of matter and changing states **Oak academy Unit 2 (Y4)**	Changing circuits **Oak academy Unit 2 (Y6)**	Forces including simple machines **Oak academy Unit 2 (Y5)**
Spr1	Human body parts **Oak academy Unit 3 (Y1)**	New life **Oak academy Unit 3 (Y2)**	Introduction to sound. **Oak academy Unit 4 (Y4)**	Simple electrical circuits **Oak academy Unit 3 (Y4)**	Keeping healthy – *To be taught as part of a PSHE unit **Oak academy Unit 3 (Y6)**	Earth, sun and moon **Oak academy Unit 3 (Y5)**
Spr 2	Identifying plants and their basic parts **Oak academy Unit 4 (Y1)**	Growing plants **Oak academy Unit 2 (Y2)**	Healthy eating **Oak academy Unit 4 (Y3)**	Rocks and soils **Oak academy Unit 1 (Y3)**	Why we group and classify living things **Oak academy Unit 4 (Y6)**	Reproduction and life cycle: plants **Oak academy Unit 4 (Y5)**
Sum 1	Seasonal changes: spring and summer **Oak academy Unit 5 (Y1)**	Uses of everyday materials **Oak academy Unit 1 (Y2)**	What plants do and what they need **Oak academy Unit 5 (Y3)**	Living things and the environment **Oak academy Unit 5 (Y4)**	Evolution and Inheritance **Oak academy Unit 5 (Y6)**	Reproduction and life cycle: animals **Oak academy Unit 5 (Y5)**
Sum 2	Everyday materials **Oak academy Unit 6 (Y1)**	Introduction to food chains **Oak academy Unit 4 (Y2)**	Introduction to the human skeleton and muscles **Oak academy Unit 2 (Y3)**	More about food chains **Oak academy Unit 6 (Y4)**	Light and how it travels **Oak academy Unit 6 (Y6)**	Human development **Oak academy Unit 6 (Y5)**

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Below are the areas of science to be taught for each phase each half term. The key vocabulary is highlighted in purple and children need to know and understand these key words and have opportunities to practise the spelling and using of them. There are links made to Oak Academy units for guidance only. The skills of working scientifically (WS) are taken from the National Curriculum and during each lesson aspects of WS should be taught/implemented. The LI's are the key areas of learning that need to be taught– you may wish to group key learning intentions together although these have been sequenced for progression of understanding.

EYFS and Foundation Stage

Understanding the World:

-Explore the natural world around them.
-Describe what they see, hear and feel outside.
-Recognise some environments that are different to the one in which they live.
-Understand the effect of changing seasons on the natural world around them.

ELG:

-Explore the natural world around them, making observations and drawing pictures of animals and plants.
-Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
-Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
Children cover all of these skills regularly through the different topics taught at various times throughout the academic year.

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Yr	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1/2	**Living things and their habitats** **Pupils should be taught:** **Key Vocabulary: habitat, microhabitat, identify, inanimate, alive, non-living, dead** L.I 1: To compare and group things that are living and non-living L.I 2: To describe movement as something that all living things do. L.I 3: To compare and group things that are alive, dead and never been alive. L.I 4: To explain why animals live in different habitats. L.I 5: To explain why plants live in different habitats. L.I 6: To identify and name plants and animals that live in microhabitats L.I 7: To encourage plants and animals in microhabitats to live safely.	Healthy Me **Pupils should be taught:** **Key Vocabulary: canine, molar, incisor, enamel, nutrients, nutritionist, healthy, carbohydrate, minerals** L.I 1: To explain why it is important for humans to wash their hands. L.I 2: To explain the importance of looking after your teeth. L.I 3: To describe why it is important for humans to exercise. L.I 4: To explain why it is important that humans eat different types of food. L.I 5: To understand why it is important to eat the right amounts of each food. L.I 6: To understand that nutritionists help us make healthy choices.	**New Life** **Pupils should be taught:** **Key Vocabulary: offspring, metamorphosis, reproduce** L.I 1: To match animal offspring to its parent. L.I 2: To order the stages of an animal's life by understanding animal life cycles. L.I 3: To record the life cycle of an animal L.I 4: To describe what animals need to stay alive. **WS:** -Ask questions -Observe closely using simple equipment. -Use observations to suggest answers -Identify and classify.	**Growing Plants** **Pupils should be taught:** **Key Vocabulary: stem, roots, petals, leaves, shoots, seeds, bulb, nutrients, conditions, thrive** L.I 1: To know that most plants grow from seeds or bulbs L.I 2: To know what plants need to grow and stay healthy. L.I 3: To observe how plants grow L.I 4: To investigate how plants grow without water, warmth and light. L.I 5: To explain that plants are grown to make food as part of a healthy diet. **WS:** -Ask questions -Observe closely using simple equipment.	**Uses of Everyday Materials** **Pupils should be taught:** **Key Vocabulary:** **transparent, opaque, translucent rigid, flexible, absorbent** L.I 1: To explain why different object are made from different materials depending on their use using the term suitable and unsuitable. L.I 2: To can explain where different materials come from and how some materials are less harmful to the planet. L.I 3: To investigate which materials are absorbent and why they are suitable for different uses. L.I 4: To investigate which materials are stretchy and how they are suitable for different uses. L.I 5: To plan, do and review a test to try and change the shape of different materials. **WS:**	**An introduction to food chains** **Pupils should be taught:** **Key Vocabulary:** **producer, consumer, nutrients, prey, energy** L.I 1: To describe how animals get the food they need to stay alive. L.I 2: To order different plants and animals in a simple food chain. L.I 3: To understand the roles within a food chain. L.I 4: To compare food chains. **WS** -Ask questions -Observe closely using simple equipment. -Use observations to suggest answers Identify and classify.

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	WS: -Ask questions -Observe closely using simple equipment. -Use observations to suggest answers -Identify and classify.	L.I 7: To present learning on how to live a healthy life. **WS:** -Ask questions -Observe closely using simple equipment. -Use observations to suggest answers. -Perform simple tests. -Gather and record data -Identify and classify.		-Use observations to suggest answers. Perform simple tests. -Gather and record data	-Ask questions -Observe closely using simple equipment. -Use observations to suggest answers. -Perform simple tests. Gather and record data	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
3/4	**Introduction to the human digestive system** **Pupils should be taught:** **Key Vocabulary: canine, incisor, molars, premolars, enamel, digest, carnivore, omnivore, herbivore, decay, erode, cavity, absorb, expel** L.I 1: To identify and name different types of teeth in humans. L.I 2: To explain the simple functions of different types of teeth and what teeth are used to eat different foods.	**Introducing states of matter and changing states** **Pupils should be taught:** **Key Vocabulary: evaporate, condense, energy, expand, contract, solids, liquids, gas, state of matter** L.I 1 : To describe the properties of solids, liquids and gases. L.I 2: Comparing and grouping materials that are solids, liquids and gases.	**Simple electrical circuits** **Pupils should be taught:** **Key Vocabulary: power, energy, resistance, circuit, conduct, insulate** L.I 1: To name common appliances and understand the use of electrical items L.I 2: To name basic components in a simple electrical circuit. L.I 3: To build a simple series electrical circuit L.I 4: To open and close a circuit using a switch.	Rocks and soils **Pupils should be taught:** **Key Vocabulary: permeability, geologist, rigid, flexible, particles** L.I 1: To understand that rock occur naturally and can be used for different purposes L.I 2: To compare, group and identify different rocks by careful observation L.I 3: To investigate the hardness and permeability of rocks through testing.	**Living things and their environments** **Pupils should be taught:** **Key Vocabulary: classify, environment, habitat, recycle, reserve, conserve, characteristics** L.I 1: To use observable characteristics to classify animals in different ways. L.I 2: To use observable characteristics to classify plants in different ways.	**More about food chains** **Pupils should be taught:** **Key Vocabulary:** **Producer, consumer, primary, secondary, predator, prey, carnivore, herbivore, omnivore, apex predator, transfer, energy** L.I 1: To show how animals and plants depend on each other for food. L.I 2: To identify producers and consumers in different food chains.

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	L.I 3: To compare the teeth of carnivores, omnivores and herbivores. L.I 4: To investigate what damages teeth and how to look after them including how sugar in drinks can damage teeth. L.I 5: To describe the journey of food through the digestive system. L.I 6: I can present and communicate information about the human digestive system. WS: - Asking relevant questions and use different types of scientific enquiries to answer them. -Make systematic and careful observations. -Set up simple practical enquiries, comparative and fair tests. -Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions	L.I 3: To observe that some materials change state from solids to liquids when they are heated and cooled. L.I 4: I can use thermometers and data loggers to plan and investigate how to find the temperatures at which some materials melt. L.I 5: To explore and observe how water can change state from liquid to gas as part of the water cycle L.I 6: To plan, investigate and review how temperature affects the rate of evaporation. **WS:** - Asking relevant questions and use different types of scientific enquiries to answer them. -Make systematic and careful observations. -Set up simple practical enquiries, comparative and fair tests.	L.I 5: To test materials in order to sort into those that conduct and insulate electricity. L.I 6: To design an electrical appliance that could be used to improve the lives of people in the future. **WS:** - Asking relevant questions and use different types of scientific enquiries to answer them. -Set up simple practical enquiries, comparative and fair tests. -Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions	(NB fossils and Mary Anning covered in Y1/2 history) L.I 4: To explain what soil, why it is important to plants and how it is made. L.I 5: To investigate how water moves through different types of soil. L.I 6: To understand the role and importance of geologists. **WS** - Asking relevant questions and use different types of scientific enquiries to answer them. -Make systematic and careful observations. -Set up simple practical enquiries, comparative and fair tests. -Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions -Using results to draw simple conclusions, make predictions and suggest improvements	L.I 3: To identify plants and animals using classification keys. L.I 4: To describe negative effects of human impact on the environment including waste. L.I 5: To understand that environmental changes can pose dangers to animals and plants. L.I 6: To understand the positive impact nature reserves have on the environment. L.I 7: To understand the positive impact on reforestation and recycling on the environment. **WS:** - Asking relevant questions and use different types of scientific enquiries to answer them. . -Make systematic and careful observations.	L.I 3: To name and identify predators and prey in food chains. L.I 4: To be able to research and create a food chain and compare them with others. L.I 5: To explain why a change to the population of one living thing can impact a food chain. L.I 6: To describe different ways in which to protect plants and animals to preserve food chains. **WS** - Asking relevant questions and use different types of scientific enquiries to answer them. -Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions -Use straightforward scientific evidence to answer questions or to support their findings

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	-Using results to draw simple conclusions, make predictions and suggest improvements .	-Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions -Using results to draw simple conclusions, make predictions and suggest improvements -Identify differences similarities or changes related to simple scientific ideas and processes. -Report on finding from enquiries (oral and written)		-Identify differences similarities or changes related to simple scientific ideas and processes.	-Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions -Use straightforward scientific evidence to answer questions or to support their findings	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
6	**Properties, changes and separating materials** **Pupils should be taught:** **Key Vocabulary:** **soluble, insoluble, reversible, irreversible, solution** L.I 1: To compare and group materials based on properties such as rigidity, transparency, electrical conductivity and magnetism	**Forces including simple machines** **Pupils should be taught:** **Key Vocabulary:** **gravity, force, repel, attract, balance, friction resistance, engineer** L.I 1: To understand why unsupported objects fall towards Earth L.I 2: To measure the size of pushes and pulls using a force meter. L.I 3: To plan an investigation to measure the effects of friction.	**Earth, Sun and Moon** **Pupils should be taught:** **Key Vocabulary:** **orbit, sphere, axis, rotating, shadow, solar** L.I 1: To consider the evidence from space to describe the shape of the Earth, Sun and the Moon. L.I 2: To make and record observations of the Moon over time (home learning task)	**Reproduction and life cycles of plants** **Pupils should be taught:** **Key Vocabulary:** Asexual, reproduce, stamen, anther, ovaries, petal, pollen, pollinators, L.I 1: To explain how plants reproduce asexually. L.I 2: To explain how plants can reproduce from cuttings	**Reproduction and life cycles of animals** **Pupils should be taught:** **Key Vocabulary:** **insects, mammals, amphibians, reptiles, vertebrates, invertebrates, gestation** L.I 1: To name and group a wide variety of common animals.	**Human development** ***To be taught alongside RSE** **Pupils should be taught:** **Key Vocabulary:** gestation, infant, puberty, hormones, population, adolescence L.I 1: To describe the changes in humans before and after birth. L.I 2: To describe the changes in humans as they

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	L.I 2: To plan, do and review a comparative test around thermal insulation L.I 4: To understand that some materials are soluble and some are not and to test materials for this. L.I 5: To separate soluble and insoluble solids from a liquid (including removing salt from seawater) L.I 6: To understand reversible and irreversible changes such as burning and rusting. L.I 7: To describe the action of acid with bicarbonate of soda as an irreversible change. **WS** - Asking relevant questions and use different types of scientific enquiries to answer them. -Make systematic and careful observations. -Set up simple practical enquiries, comparative and fair tests. -Taking measurements using a range of equipment with increasing accuracy	L.I 4: To plan an investigation to identify the effects of air resistance. L.I 5: To plan an investigation to identify the effects of water resistance L.I 6: To describe how levers, pulleys and gears can help us. L.I 6: To investigate how scientists and engineers problem solve in making machines and to make my own invention to make every day work easier. **WS:** -Make systematic and careful observations. -Set up simple practical enquiries, comparative and fair tests. -Taking measurements using a range of equipment with increasing accuracy -Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions	L.I 3: To understand the relative sizes of the Earth, Sun and Moon. L.I 4: To understand why we have day and night. L.I 5: To understand why the Sun appears to move across the sky. L.I 6: To know of the movement of the planets around the Sun. *L.I 2: To make and record observations of the Moon and understand the movement of the moon and how this explain why the Moon appears to change shape. **WS:** - Asking relevant questions and use different types of scientific enquiries to answer them. -Make systematic and careful observations.	L.I 3: To understand the part of a flowering plan and the roles they have in reproduction. L.I 4: To research and present life cycles of different plants. L.I 5: The role of pollinators and the decline of pollinating species and the impact this has on plants. L.I 6: To understand how plants can be improved by selective breeding. (link to Gyles Oldroyd) **WS:** - Asking relevant questions and use different types of scientific enquiries to answer them. -Make systematic and careful observations -Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions	L.I 2: To identify and name insects and describe their common features. L.I 3: To describe the stages in the life cycles of mammals. L.I 4: To describe the stages in the life cycles of birds and compare these to mammals. L.I 5: To compare the life cycles of amphibians and insects. L.I 6: To use information to predict the gestation periods of different animals. -**WS:** - Asking relevant questions and use different types of scientific enquiries to answer them. -Make systematic and careful observations	develop through childhood and through puberty. L.I 3: To describe the changes of humans through adulthood and into old age. L.I 4: To take accurate measurements to compare human heights, represent findings and analyse data collected. L.I 5: To describe the impact of a growing population on our planet. **WS:** - Asking relevant questions and use different types of scientific enquiries to answer them. -Make systematic and careful observations - Taking measurements using a range of equipment with increasing accuracy. -

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	-Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions -Using results to draw simple conclusions, make predictions and suggest improvements	-Using results to draw simple conclusions, make predictions and suggest improvements			-Gathering, recording, classifying and presenting data in a variety of ways in order to help answer questions	