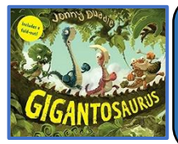
The Progression of Science- Reading Enhanced Curriculum

Early Years
Understanding The World

Early Years
Expressive Arts and Design

Year 1
Autumn 2
Everyday Materials



Year 1
Spring 1
Animals Including Humans

Year 1
Spring 2
Seasonal Changes
Plants

Year 1
Summer 1
Plants

Year 1
Summer 2
Everyday Materials

Year 2
Autumn Term
Uses of Everyday Materials

Year 2
Spring
Animals Including Humans

Year 2
Summer 1
Plants

Year 2
Summer 2
Living Things & Their Habitats

Year 3
Autumn 1
Rocks

Year 3
Autumn 2
Animals Including Humans

Year 3
Spring 1
Light

Year 3
Spring 2
Plants

Year 3
Summer
Forces & Magnets

Year 4
Autumn
Animals Including Humans

Year 4
Spring 1
States of Matter

Year 4
Spring 2
Electricity

Year 4
Summer 1
Sound

Year 4
Summer 2
Living Things & Their Habitats

Year 5
Autumn 1
Living Things & Their Habitats

Year 5
Autumn 2
Animals Including Humans

Year 5
Spring 1
Earth & Space

Year 5
Spring 2
Forces

Year 5
Summer
Properties & Changes of Materials

Year 6
Autumn
Animals Including Humans

Year 6
Spring 1
Electricity

Year 6
Spring 2
Light

Year 6
Summer 2
Living Things & Their Habitats

Year 6
Summer 1
Evolution & Inheritance

KEY: Current Year Science Unit
History Geography D&T Art

Curriculum Overview Year 1

Please note these criteria have been selected to meet at least the ambition of the National Curriculum. Schools are welcome to edit which knowledge is to progress and which is to enhance according to context.	**Knowledge to Progress:**	**Essential knowledge pupils need to remember and use in order to access the next steps in their learning.**
	Knowledge to Enhance:	Knowledge that enhances pupils' understanding and further supports their wider application of the curriculum.

Prior Learning in Early Years

Vocabulary

Throughout Early Years children should be immersed in high quality subject specific language, related to the whole science curriculum. The most important vocabulary we expect them to hear and use is set out below.

Everyday Materials

EYFS

- ✓ **To use sight and touch to explore different materials. (F1)**
- ✓ **To name some objects in their immediate environment, e.g., table, chair, cup (F1)**
- ✓ **To know that in different weather we wear different clothing. (F1)**
- ✓ **To explore malleable materials. (F1)**
- ✓ **To make choices about how to use different materials. (F1)**
- ✓ **To know that some materials change in water e.g., cardboard goes soggy. (F2)**
- ✓ **To know that some materials and objects can bend. (F2)**
- ✓ **To sort some materials and objects into groups. (F2)**
- ✓ **To explain the differences between some materials. (F2)**

Early Learning Goal

- ✓ **Safely use and explore a variety of materials, tools and techniques, experimenting with ~~colour, design~~, texture, form ~~and function~~.**

Year 1 Curriculum Take Aways

CROSS-CURRICULAR LINKS:

Everyday Materials (Autumn 2): Mechanisms, A Journey Through Transport

Animals Including Humans (Spring 1): Dinosaurs, Food & Nutrition

Seasonal Changes (Spring 2): Seasons & Weather, Painting, Drawing

Plants (Spring 2/Summer 1): Seasons & Weather, Painting, Drawing

Everyday Materials

- ✓ **To identify the difference between an object and the material which it is made from.**
- ✓ **To identify and name a variety of everyday materials - plastic, glass, rubber, wood, rock, paper, brick and metal.**
- ✓ **To identify and name different properties of materials.**
- ✓ To identify whether materials are hard or soft.
- ✓ To identify whether materials are rough or smooth.
- ✓ To identify whether materials are dull or shiny.
- ✓ To identify whether materials are bendy or stiff.
- ✓ To identify whether materials are waterproof or absorbent.
- ✓ To identify whether materials are waterproof or not waterproof.

Working Scientifically

- ✓ To group and sort materials, objects or living things based on their properties or features, with support.
- ✓ To begin to explain, with support, what the data gathered shows and how it can help answer questions.
- ✓ To use a variety of simple equipment to carry out scientific enquiries, with support.
- ✓ To begin to use, with support, simple scientific language, and vocabulary.
- ✓ To carry out simple tests, with support.
- ✓ To begin to notice, with support, patterns and relationships from observations.
- ✓ To carry out simple tests, with support. (WS)
- ✓ To explain, with support, why data need to be captured accurately. (WS)
- ✓ To identify features or properties of materials, objects or living things, with support. (WS)
- ✓ To group and sort materials, objects or living things based on their properties or features, with support. (WS)
- ✓ To use a variety of simple equipment to carry out scientific enquiries, with support. (WS)

Subsequent Year's Curriculum Take Aways

Seasonal Changes (Spring 1): London & the UK (Y2)

Uses of Everyday Materials

Year 2

- ✓ **To explain how the properties of a material make them suitable for certain jobs.**
- ✓ **To describe which of the following materials: wood, metal, plastic, glass, brick, rock, paper, and cardboard, we would use to make different objects referring to their properties.**
- ✓ **To explain that some materials can change shape when we do something to them e.g. squash, bend, stretch, twist.**
- ✓ **To identify and name some materials that can be stretched e.g., rubber**
- ✓ **To identify and name some materials that can bend e.g., paper, some plastic, leather**
- ✓ **To identify and name some materials that can be squashed e.g., rubber, foam, sponge**
- ✓ **To identify and name some materials that can be twisted e.g., wool, cotton**

Working Scientifically

- ✓ **To group and sort materials, objects or living things based on their properties or features. (WS)**
- ✓ **To ask simple questions about the world around them. (WS)**
- ✓ To begin to use simple scientific language, and vocabulary. (WS)
- ✓ **To identify features or properties of materials, objects or living things. (WS)**
- ✓ **To use observations to begin to suggest answers to questions. (WS)**
- ✓ **To recognise that simple questions can be answered in different ways. (WS)**
- ✓ **To record scientific enquiry data and observations using structured templates and frames e.g., simple table, pictograms, tally charts, block diagrams and labelled diagrams. (WS)**
- ✓ **To use a variety of simple equipment to carry out scientific enquiries. (WS)**
- ✓ **To carry out simple tests. (WS)**
- ✓ **To begin to make careful observations when carrying out scientific enquiries. (WS)**
- ✓ **To begin to explain what the data gathered shows and how it can help answer questions. (WS)**
- ✓ To begin to notice patterns and relationships from observations. (WS)

	✓ To begin to describe how a test was carried out to find answers to questions, with scaffolded support. (WS) ✓ To begin to make careful observations, with support and guidance, when carrying out scientific enquiries. (WS) ✓ To use observations, with support, to begin to suggest answers to questions. (WS)	
Vocabulary ✓ bend ✓ break ✓ crunch ✓ dry ✓ hard ✓ material ✓ melt ✓ roll ✓ rough ✓✓ smooth ✓ snap ✓ soft ✓ soggy ✓ stick ✓ stretch ✓ texture ✓ thick ✓ thin ✓ wet	**Vocabulary Autumn 2:** ✓ absorbent ✓ cup ✓ dull ✓ glass ✓ hard ✓ material ✓ metal ✓ object ✓ pipette ✓ plastic ✓ properties ✓ rock ✓ rough ✓ rubber ✓ shiny ✓ smooth ✓ soft ✓ stiff ✓ stone ✓ stretchy ✓ water ✓ waterproof ✓ wood **Vocabulary Summer 2:** ✓ cotton ✓ mackintosh ✓ not waterproof ✓ observe ✓ paper ✓ pipette ✓ wool	**Vocabulary** ✓ bending ✓ squashing ✓ stretching ✓✓ twisting ✓ fireproof ✓ layer ✓ thermal ✓ uniform
Seasonal Changes **EYFS** ✓ **To describe how the weather affects their immediate environment. (F1)** ✓ **To describe the weather today. (F1)** ✓ **To use their senses to describe the weather e.g., seeing their breath in the cold. (F2)** ✓ **To describe some of the changes in their local environment in different seasons. (F2)** ✓ **To know the names of the four seasons. (F2)** **Early Learning Goal** ✓ **Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.** ✓ **Explore the natural world around them, making observations and drawing pictures of plants and animals.**	**Seasonal Changes** ✓ To name the four seasons: Spring, Summer, Autumn, Winter. ✓ To name the months associated with each season. ✓ **To identify changes to the environment across the four seasons.** ✓ **To explain how the weather changes over the 4 seasons** ✓ **To describe that the day changes in length depending on which season we are in.** **Working Scientifically** ✓ To ask simple questions about the world around them, with support. (WS) ✓ To use a variety of simple equipment to carry out scientific enquiries, with support. (WS) ✓ To use simple measurements e.g., cm, metres, seconds, and grams, with support, when recording data. (WS) ✓ To observe simple changes over time, with support. (WS) ✓ To use observations, with support, to begin to suggest answers to questions. (WS) ✓ To record scientific enquiry data and observations, using scaffolded support and structured templates and frames e.g., labelled diagrams, labelled photographs. (WS)	
Vocabulary ✓ autumn ✓ snow ✓ spring ✓ summer ✓ sunny ✓ winter ✓ change ✓ rain ✓ sun ✓ cloud ✓ wet ✓ dry ✓ thunder ✓ lightning ✓ weather ✓ hot ✓ cold ✓ ice ✓ hail ✓ frozen ✓ melt ✓ temperature ✓ storm ✓ overcast	**Vocabulary** ✓ Autumn ✓ Earth ✓ globe ✓ seasons ✓ Spring ✓ Summer ✓ thermometer ✓ weather ✓ Winter	
Plants **EYFS** ✓ **To know the difference between a plant and an animal. (F1)** ✓ **To know what a seed is. (F1)** ✓ **To look after a seed to help it grow. (F1)** ✓ **To describe observations about the changes of how a plant grows. (F1)**	**Plants** ✓ **To name some common wild and garden flowers and plants e.g., roses, daffodils, daisies, buttercups, bluebells, ivy, cherry blossom.** ✓ **To name some deciduous trees e.g., oak, ash, birch, weeping willow.** ✓ **To name some evergreen trees e.g., fir, laurel, holly.** ✓ To understand the difference between wild and garden flowering plants.	**Plants** **Year 2** ✓ **To know that mature plants grow from either seeds or bulbs.** ✓ To explain what conditions a seed needs to grow or germinate - water and nutrients.

<table>
<tr>
<td>
✓ To record observations about the changes of how a plant grows e.g., draw, measure, photograph etc. (F2)
✓ To identify some plants that grow in my immediate environment e.g., rosemary, mint etc. (F2)
<u>Early Learning Goal</u>
✓ Explore the natural world around them, making observations and drawing pictures of plants and animals.
</td>
<td>
✓ To name the basic parts of a flower - stem, root, flower, leaf and petal.
✓ To name the basic parts of a tree - root, trunk, branch, twig, leaf, and bark
✓ To observe how some plants change over a long period of time - some trees lose their leaves, leaves change colour in Autumn, flowers die in the Winter, in Spring some plants emerge from the ground.
</td>
<td>
✓ To know that seeds and bulbs like different conditions and may grow at different rates.
✓ To describe what happens when a seed germinates.
✓ To know that when a seed germinates it begins to grow into an adult plant.
✓ To describe what a plant needs to grow - water, sunlight, nutrients, and a suitable temperature.
</td>
</tr>
<tr>
<td></td>
<td>
Working Scientifically
✓ To begin to recognise that simple questions can be answered in different ways, with support. (WS)
✓ To use a variety of simple equipment to carry out scientific enquiries, with support. (WS)
✓ To identify features or properties of materials, objects or living things, with support. (WS)
✓ To use observations, with support, to begin to suggest answers to questions. (WS)
✓ To ask simple questions about the world around them, with support. (WS)
✓ To group and sort materials, objects or living things based on their properties or features, with support. (WS)
✓ To begin to report findings from scientific enquiries in a range of ways: orally, written, labelled diagrams, with scaffolded support. (WS)
✓ To begin to use, with support, simple scientific language, and vocabulary. (WS)
✓ To record scientific enquiry data and observations, using scaffolded support and structured templates and frames e.g., labelled diagrams, labelled photographs. (WS)
✓ To begin to make careful observations, with support and guidance, when carrying out scientific enquiries. (WS)
✓ To observe simple changes over time, with support. (WS)
✓ To begin to describe how a test was carried out to find answers to questions, with scaffolded support. (WS)
</td>
<td>
Working Scientifically
✓ To begin to explain what the data gathered shows and how it can help answer questions. (WS)
✓ To begin to use simple scientific language, and vocabulary. (WS)
✓ To use simple secondary sources to find answers to questions. (WS)
✓ To use observations to begin to suggest answers to questions. (WS)
✓ To begin to report findings from scientific enquiries in a range of ways: orally, written, labelled diagrams. (WS)
✓ To use everyday units of measurements e.g., cm, metres, seconds, minutes, grams and kg, to record data, with support (WS)
✓ To observe simple changes over time. (WS)
✓ To carry out simple tests. (WS)
✓ To recognise that simple questions can be answered in different ways. (WS)
✓ To record scientific enquiry data and observations using structured templates and frames e.g., simple table, pictograms, tally charts, block diagrams and labelled diagrams. (WS)
✓ To begin to describe how a test was carried out to find answers to questions. (WS)
✓ To group and sort materials, objects or living things based on their properties or features. (WS)
✓
</td>
</tr>
<tr>
<td>
Vocabulary
✓ flower
✓ stem
✓ petal
✓ seeds
✓ soil
✓ roots
✓ water
✓ sun
✓ dig
✓ soak
✓ feed
✓ grow
✓ shoot
✓ stalk
✓ leaf
✓ trunk
✓ bud
✓ pollen
✓ plants
✓ tree
✓ fruit
✓ vegetable
</td>
<td>
Vocabulary
✓ bark
✓ branch
✓ deciduous
✓ evergreen
✓ flower
✓ garden plants
✓ leaf
✓ root
✓ stem
✓ trunk
✓ twig
✓ wild plants
</td>
<td>
Vocabulary
✓ bulb
✓ germination
✓ grow
✓ light
✓ mature plant
✓ nutrients
✓ oxygen
✓ shoot
✓ seed
✓ seed coat
✓ seedling
✓ soil
✓ survive
✓ water
✓ wilt
</td>
</tr>
<tr>
<td>
Animals Including Humans
EYFS
✓ To identify their head, shoulders, knees and toes on their own body. (F1)
✓ To know what an animal is and name some animals, including cow, chicken, sheep, horse, goat, duck, pig, hen, dinosaur etc. (F1)
✓ To recognise parts of their body needed to complete simple instructions e.g., put your hand up, sit on your bottom, hands and feet still, listening ears etc. (F2)
✓ To know that brushing our teeth keeps them clean and healthy. (F2)
✓ To know and name some foods that are good for me. (F2)
✓ To group animals in different ways e.g., farm animal, wild animal, wings, number of legs etc. (F2)
Early Learning Goal
</td>
<td>
Animals Including Humans
✓ To identify, name, draw and label the basic parts of the human body e.g. head, elbow, stomach, knee, foot, wrist, chest, shoulder.
✓ To identify and name the 5 senses – sight, taste, smell, hearing, touch.
✓ To name the parts of the body associated with each sense e.g. nose and smell.
✓ To identify and name a variety of common animals across all groups (amphibians, birds, fish, mammals, reptiles).
✓ To identify and name groups of animals (amphibians, birds, fish, mammals, reptiles) based on their features.
✓ To identify similarities between different groups of animals e.g., their structure.
✓ To identify differences between different groups of animals e.g., their structure.
</td>
<td>
Animals Including Humans
Year 2
✓ To identify and name animals that lay eggs.
✓ To identify and name animals that birth live young.
✓ To know that animals have offspring which grow into adults.
✓ To explain that some eggs hatch and the offspring may go through stages before they look like their parents e.g., tadpole to frog.
✓ To know that all animals need water, food, and air to survive.
✓ To know that if animals do not get enough food, air or water, they will eventually die.
✓ To know and explain why keeping clean is important.
✓ To explain that germs and viruses can spread if we don't keep ourselves clean and can make ourselves and other people ill.
✓ To explain how we can keep ourselves clean.
</td>
</tr>
</table>

✓ **Explore the natural world around them, making observations and drawing pictures of plants and animals.**	✓ **To know what a carnivore is and name some examples.** ✓ **To know what an herbivore is and name some examples.** ✓ **To know what an omnivore is and to name some examples.**	✓ **To know and explain that exercise is important for us to keep healthy.** ✓ To explain that exercise helps our build strong muscles and makes our heart strong too. ✓ **To know and explain why different food groups and the amount of each we need is different for a balanced diet.**
	Working Scientifically ✓ To ask simple questions about the world around them, with support. (WS) ✓ To identify features of living things, with support. (WS) ✓ To use observations, with support, to begin to suggest answers to questions. (WS) ✓ To use simple secondary sources to find answers to questions, with support. (WS)	**Working Scientifically** ✓ To identify features or properties of materials, objects or living things. (WS) ✓ To group and sort materials, objects or living things based on their properties or features. (WS) ✓ To begin to report findings from scientific enquiries in a range of ways: orally, written, labelled diagrams. (WS) ✓ To carry out simple tests. (WS) ✓ To observe simple changes over time. (WS) ✓ To use a variety of simple equipment to carry out scientific enquiries. (WS)
Vocabulary ✓ **body** ✓ **chicken** ✓ **cow** ✓ **dinosaur** ✓ **duck** ✓ **ears** ✓ **eyes** ✓ **goat** ✓ **head** ✓ **hen** ✓ **horse** ✓ **knees** ✓ **mouth** ✓ **pig** ✓ **sheep** ✓ **shoulder** ✓ **teeth** ✓ **toes** ✓ **tongue** ✓ **toothbrush**	**Vocabulary** ✓ amphibian ✓ bird ✓ blackbird ✓ carnivore ✓ chest ✓ chicken ✓ crocodile ✓ dog ✓ ears ✓ elbow ✓ eyes ✓ finger ✓ fish ✓ food ✓ foot ✓ frog ✓ goldfish ✓ head ✓ hearing ✓ herbivore ✓ human ✓ knee ✓ mammal ✓ meat ✓ mouth ✓ newt ✓ nose ✓ observations ✓ omnivore ✓ plants ✓ reptile ✓ shark ✓ shoulder ✓ sight ✓ smell ✓ snake ✓ stomach ✓ taste ✓ tongue ✓ touch ✓ wrist	**Vocabulary** ✓ **adult** ✓ **air** ✓ **chrysalis** ✓ **egg** ✓ **food** ✓ **lava** ✓ **life cycle** ✓ **live young** ✓ **offspring** ✓ **oxygen** ✓ **shelter** ✓ **diet** ✓ **exercise** ✓ **germs** ✓ **hygiene** ✓ **survival**

KEY: Current Year Science Unit
History Geography D&T Art

Curriculum Overview Year 2

Please note these criteria have been selected to meet at least the ambition of the National Curriculum. Schools are welcome to edit which knowledge is to progress and which is to enhance according to context.	**Knowledge to Progress:**	**Essential knowledge pupils need to remember and use in order to access the next steps in their learning.**
	Knowledge to Enhance:	Knowledge that enhances pupils' understanding and further supports their wider application of the curriculum.

Prior Year's Curriculum Take Aways

Year 1
Plants (Summer 1): Seasons & Weather
Animals Including Humans (Spring 1): Food & Nutrition

Everyday Materials

Year 1
- ✓ **To identify the difference between and object and the material which it is made from.**
- ✓ **To identify and name a variety of everyday materials - plastic, glass, rubber, wood, rock, paper, brick and metal.**
- ✓ **To identify and name different properties of materials.**
- ✓ To identify whether materials are hard or soft.
- ✓ To identify whether materials are rough or smooth.
- ✓ To identify whether materials are dull or shiny.
- ✓ To identify whether materials are bendy or stiff.

To identify whether materials are waterproof or absorbent.

- ✓ To identify whether materials are waterproof or not waterproof.

Working Scientifically
- ✓ To group and sort materials, objects or living things based on their properties or features, with support.
- ✓ To begin to explain, with support, what the data gathered shows and how it can help answer questions.
- ✓ To use a variety of simple equipment to carry out scientific enquiries, with support.
- ✓ To begin to use, with support, simple scientific language, and vocabulary.
- ✓ To carry out simple tests, with support.
- ✓ To begin to notice, with support, patterns and relationships from observations.

- ✓ To carry out simple tests, with support. (WS)
- ✓ To explain, with support, why data need to be captured accurately. (WS)
- ✓ To identify features or properties of materials, objects or living things, with support. (WS)
- ✓ To group and sort materials, objects or living things based on their properties or features, with support. (WS)
- ✓ To use a variety of simple equipment to carry out scientific enquiries, with support. (WS)
- ✓ To begin to describe how a test was carried out to find answers to questions, with scaffolded support. (WS)
- ✓ To begin to make careful observations, with support and guidance, when carrying out scientific enquiries. (WS)
- ✓ To use observations, with support, to begin to suggest answers to questions. (WS)

Vocabulary Autumn 2:
- ✓ absorbent
- ✓ cup
- ✓ dull
- ✓ glass
- ✓ hard
- ✓ rough
- ✓ rubber
- ✓ shiny
- ✓ smooth
- ✓ soft

Vocabulary Summer 2:
- ✓ **cotton**
- ✓ **mackintosh**
- ✓ **not waterproof**
- ✓ **observe**
- ✓ **paper**

Year 2 Curriculum Take Aways

Uses of Everyday Materials (Autumn): Construction, Sculpture

Uses of Everyday Materials
- ✓ **To explain how the properties of a material make them suitable for certain jobs.**
- ✓ **To describe which of the following materials: wood, metal, plastic, glass, brick, rock, paper, and cardboard, we would use to make different objects referring to their properties.**
- ✓ **To explain that some materials can change shape when we do something to them e.g. squash, bend, stretch, twist.**
- ✓ **To identify and name some materials that can be stretched e.g., rubber**
- ✓ **To identify and name some materials that can bend e.g., paper, some plastic, leather**
- ✓ **To identify and name some materials that can be squashed e.g., rubber, foam, sponge**
- ✓ **To identify and name some materials that can be twisted, wool, cotton**

Working Scientifically
- ✓ **To group and sort materials, objects or living things based on their properties or features. (WS)**
- ✓ **To ask simple questions about the world around them. (WS)**
- ✓ To begin to use simple scientific language, and vocabulary. (WS)
- ✓ **To identify features or properties of materials, objects or living things. (WS)**
- ✓ **To use observations to begin to suggest answers to questions. (WS)**
- ✓ **To recognise that simple questions can be answered in different ways. (WS)**
- ✓ **To record scientific enquiry data and observations using structured templates and frames e.g., simple table, pictograms, tally charts, block diagrams and labelled diagrams. (WS)**
- ✓ **To use a variety of simple equipment to carry out scientific enquiries. (WS)**
- ✓ **To carry out simple tests. (WS)**
- ✓ **To begin to make careful observations when carrying out scientific enquiries. (WS)**
- ✓ **To begin to explain what the data gathered shows and how it can help answer questions. (WS)**
- ✓ To begin to notice patterns and relationships from observations. (WS)

Vocabulary
- ✓ **bending**
- ✓ **squashing**
- ✓ **stretching**
- ✓ **twisting**
- ✓ **fireproof**
- ✓ **layer**
- ✓ **thermal**
- ✓ **uniform**

Subsequent Year's Curriculum Take Aways

States of Matter

Year 4
- ✓ **To know the properties of solids, liquids and gases.**
- ✓ **To identify materials as solids, liquids or gases.**
- ✓ **To group materials according to whether they are solids, liquids or gases.**
- ✓ To know the particle structure of a solid, liquid and gas.
- ✓ To know what a non-Newtonian substance is.
- ✓ **To know that some materials change state when they are heated and cooled.**
- ✓ **To know the temperature at which some materials change state.**
- ✓ **To know and describe the process of evaporation.**
- ✓ **To know and describe the process of condensing.**
- ✓ **To know and describe the roles played by evaporations and condensation in the water cycle.**
- ✓ **To know the relationship between temperature and rate of evaporation.**

Working Scientifically
- ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)**
- ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)**
- ✓ **To use simple scientific language when recording findings. (WS)**
- ✓ **To report findings from scientific enquiries in a variety of ways e.g., oral and written explanations, displays, presentations. (WS)**
- ✓ **To use secondary sources to support explanations to scientific enquiries. (WS)**
- ✓ To make links between observations and data from scientific enquiries and research from secondary sources. (WS)
- ✓ To explain what needs to stay the same and what is changing in a comparative and fair test. (WS)
- ✓ To decide, with support, the observation to makes, including the frequency of observations, in order to find answers to a question. (WS)
- ✓ **To identify new questions to investigate based on the observations or data obtained from an enquiry. (WS)**
- ✓ **To begin to suggest ways to improve a scientific enquiry process. (WS)**

Vocabulary
- ✓ **cool**
- ✓ **condensation**
- ✓ **evaporation**
- ✓ **freeze**
- ✓ **gas**
- ✓ **particle**
- ✓ **precipitation**
- ✓ **solid**
- ✓ **solidify**
- ✓ **water cycle**

✓ material ✓ metal ✓ object ✓ pipette ✓ plastic ✓ properties ✓ rock ✓ stiff ✓ stone ✓ stretchy ✓ water ✓ waterproof ✓ wood ✓ **pipette** ✓ **wool**		✓ **heating** ✓ **liquid** ✓ **melt** ✓ **water vapour**
Animals Including Humans **Year 1** ✓ **To identify, name, draw and label the basic parts of the human body e.g. head, elbow, stomach, knee, foot, wrist, chest, shoulder.** ✓ **To identify and name the 5 senses – sight, taste, smell, hearing, touch.** ✓ **To name the parts of the body associated with each sense e.g. nose and smell.** ✓ **To identify and name a variety of common animals across all groups (amphibians, birds, fish, mammals, reptiles).** ✓ **To identify and name groups of animals (amphibians, birds, fish, mammals, reptiles) based on their features.** ✓ **To identify similarities between different groups of animals e.g., their structure.** ✓ **To identify differences between different groups of animals e.g., their structure.** ✓ **To know what a carnivore is and name some examples.** ✓ **To know what an herbivore is and name some examples.** ✓ **To know what an omnivore is and to name some examples.**	**Animals Including Humans** ✓ To identify and name animals that lay eggs. ✓ To identify and name animals that birth live young. ✓ **To know that animals have offspring which grow into adults.** ✓ To explain that some eggs hatch and the offspring may go through stages before they look like their parents e.g., tadpole to frog. ✓ **To know that all animals need water, food, and air to survive.** ✓ **To know that if animals do not get enough food, air or water, they will eventually die.** ✓ **To know and explain why keeping clean is important.** ✓ To explain that germs and viruses can spread if we don't keep ourselves clean and can make ourselves and other people ill. ✓ **To explain how we can keep ourselves clean.** ✓ **To know and explain that exercise is important for us to keep healthy.** ✓ To explain that exercise helps our build strong muscles and makes our heart strong too. ✓ **To know and explain why different food groups and the amount of each we need is different for a balanced diet.**	**Animal Including Humans** **Year 3** ✓ **To know that skeletons are made of bones.** ✓ **To know that most animals, including humans, have skeleton.** ✓ **To know that skeletons support the animal's body.** ✓ **To identify and name parts of a skeleton that protect parts of the body e.g. skull protects the brain.** ✓ **To describe how skeletons protect important organs.** ✓ **To identify parts of the skeleton that allows animals to move.** ✓ **To explain that skeletons allow movement through different types of joints.** ✓ **To describe how muscles work, along with joints, to enable an animal's skeleton to move.** ✓ **To explain that animals, including humans, need the right types and amount of nutrition.** ✓ **To explain that animals cannot make their own food but get nutrition from what they eat.** ✓ To describe and give examples of the effects of insufficient nutrition on the human body. ✓ To explain that the size and age of an animal can affect the amount of nutrition it requires.
Working Scientifically ✓ To ask simple questions about the world around them, with support. (WS) ✓ To identify features or of living things, with support. (WS) ✓ To use observations, with support, to begin to suggest answers to questions. (WS) ✓ To use simple secondary sources to find answers to questions, with support. (WS)	**Working Scientifically** ✓ To identify features or properties of materials, objects or living things. (WS) ✓ To group and sort materials, objects or living things based on their properties or features. (WS) ✓ To begin to report findings from scientific enquiries in a range of ways: orally, written, labelled diagrams. (WS) ✓ To carry out simple tests. (WS) ✓ To observe simple changes over time. (WS) ✓ To use a variety of simple equipment to carry out scientific enquiries. (WS)	
Vocabulary ✓ amphibian ✓ bird ✓ blackbird ✓ carnivore ✓ chest ✓ chicken ✓ crocodile ✓ dog ✓ ears ✓ elbow ✓ eyes ✓ finger ✓ fish ✓ food ✓ foot ✓ frog ✓ goldfish ✓ head ✓ hearing ✓ herbivore ✓ human ✓ knee ✓ mammal ✓ meat ✓ mouth ✓ newt ✓ nose ✓ observations ✓ omnivore ✓ plants ✓ reptile ✓ shark ✓ shoulder ✓ sight ✓ smell ✓ snake ✓ stomach ✓ taste ✓ tongue ✓ touch	**Vocabulary** ✓ **adult** ✓ **air** ✓ **chrysalis** ✓ **egg** ✓ **food** ✓ **lava** ✓ **life cycle** ✓ **live young** ✓ **offspring** ✓ **oxygen** ✓ **shelter** ✓ **diet** ✓ **exercise** ✓ **germs** ✓ **hygiene** ✓ **survival**	**Vocabulary** ✓ **biceps** ✓ **bone** ✓ **brain** ✓ **heart** ✓ **joint** ✓ **lungs** ✓ **movement** ✓ **muscle** ✓ **nutrition** ✓ **protect** ✓ **pull** ✓ **ribcage** ✓ **skeleton** ✓ **skull** ✓ **support** ✓ **tricep**

✓ wrist		
Plants **Year 1** ✓ **To name some common wild and garden flowers and plants e.g., roses, daffodils, daisies, buttercups, bluebells, ivy, cherry blossom.** ✓ **To name some deciduous trees e.g., oak, ash, birch, weeping willow.** ✓ **To name some evergreen trees e.g., fir, laurel, holly.** ✓ To understand the difference between wild and garden flowering plants. ✓ **To name the basic parts of a flower - stem, root, flower, leaf and petal.** ✓ **To name the basic parts of a tree - root, trunk, branch, twig, leaf, and bark** ✓ To observe how some plants change over a long period of time - some trees lose their leaves, leaves change colour in Autumn, flowers die in the Winter, in Spring some plants emerge from the ground.	**Plants** ✓ **To know that mature plants grow from either seeds or bulbs** ✓ To explain what conditions a seed needs to grow or germinate - water and nutrients. ✓ **To know that seeds and bulbs like different conditions and may grow at different rates.** ✓ To describe what happens when a seed germinates. ✓ To know that when a seed germinates it begins to grow into an adult plant. ✓ **To describe what a plant needs to grow - water, sunlight, nutrients, and a suitable temperature.**	**Plants** **Year 3** ✓ **To identify and describe the functions of the basic parts of a flowering plant: roots, stem/trunk, leaves, flower.** ✓ **To know that roots anchor the plant in place.** ✓ **To know that the stem holds the leaves and flowers up.** ✓ To know that leaves use sunlight and water to produce the plant's food, and that this process is called photosynthesis. ✓ **To explain how differences in plants e.g. root length, help their survival.** ✓ **To describe the process of transpiration.** ✓ **To know that roots absorb water and nutrients from the soil.** ✓ **To know that the stem transports water and nutrients around the plant.** ✓ **To know that some plants have flowers, and this enables the plant to reproduce.** ✓ **To name and identify the parts of a flower needed for pollination: stamen, stigma, ovary.** ✓ **To describe pollination as pollen, which is produced by the stamen, being transferred onto the stigma.** ✓ **To know that seeds are formed in the ovary.** ✓ **To know that pollination forms seeds, sometimes contained in berries or fruits.** ✓ **To know and explain the different ways seeds can be dispersed: wind, water, animals.** ✓ To group and sort seeds on how they will be dispersed based on their common features. ✓ To describe germination as the part of a plant's life cycle when it begins to sprout and grow. ✓ To name the different stages in a plant's life cycle. ✓ To describe how a plant changes through each stage of its life cycle. ✓ To describe how humans can have a negative impact on the life cycle of a plant e.g. pollution in the soil harming roots.
Working Scientifically ✓ To begin to recognise that simple questions can be answered in different ways, with support. (WS) ✓ To use a variety of simple equipment to carry out scientific enquiries, with support. (WS) ✓ To identify features or properties of materials, objects or living things, with support. (WS) ✓ To use observations, with support, to begin to suggest answers to questions. (WS) ✓ To ask simple questions about the world around them, with support. (WS) ✓ To group and sort materials, objects or living things based on their properties or features, with support. (WS) ✓ To begin to report findings from scientific enquiries in a range of ways: orally, written, labelled diagrams, with scaffolded support. (WS) ✓ To begin to use, with support, simple scientific language, and vocabulary. (WS)	**Working Scientifically** ✓ To begin to explain what the data gathered shows and how it can help answer questions. (WS) ✓ To begin to use simple scientific language, and vocabulary. (WS) ✓ To use simple secondary sources to find answers to questions. (WS) ✓ To use observations to begin to suggest answers to questions. (WS) ✓ To begin to report findings from scientific enquiries in a range of ways: orally, written, labelled diagrams. (WS) ✓ To use everyday units of measurements e.g., cm, metres, seconds, minutes, grams and kg, to record data, with support (WS) ✓ To observe simple changes over time. (WS) ✓ To carry out simple tests. (WS) ✓ To recognise that simple questions can be answered in different ways. (WS) ✓ To record scientific enquiry data and observations using structured templates and frames e.g., simple table, pictograms, tally charts, block diagrams and labelled diagrams. (WS) ✓ To begin to describe how a test was carried out to find answers to questions.	**Working Scientifically** ✓ **To use a range of equipment appropriately, including data loggers (e.g., Lux meters), with support, to collect relevant data. (WS)** ✓ **To make careful observations to collect relevant data to answer a question. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with scaffolding and support. (WS)** ✓ **To use simple scientific language when recordings findings, with support. (WS)** ✓ **To identify similarities, differences and changes in data and observations, with support. (WS)** ✓

✓ To record scientific enquiry data and observations, using scaffolded support and structured templates and frames e.g., labelled diagrams, labelled photographs. (WS) ✓ To begin to make careful observations, with support and guidance, when carrying out scientific enquiries. (WS) ✓ To observe simple changes over time, with support. (WS) ✓ To begin to describe how a test was carried out to find answers to questions, with scaffolded support. (WS)	(WS) ✓ To group and sort materials, objects or living things based on their properties or features. (WS)	
Vocabulary ✓ bark ✓ branch ✓ deciduous ✓ evergreen ✓ flower ✓ garden plants ✓ leaf ✓ root ✓ stem ✓ trunk ✓ twig ✓ wild plants	**Vocabulary** ✓ bulb ✓ germination ✓ grow ✓ light ✓ mature plant ✓ nutrients ✓ oxygen ✓ shoot ✓ seed ✓ seed coat ✓ seedling ✓ soil ✓ survive ✓ water ✓ wilt	**Vocabulary** ✓ animal ✓ flower ✓ germination ✓ leaf ✓ nutrients ✓ ovary ✓ pollination ✓ roots ✓ seed dispersal ✓ stamen ✓ stem ✓ stigma ✓ transpiration ✓ water ✓ wind ✓ wilt ✓ xylem
Living Things & Their Habitats **EYFS** ✓ **To observe different living things in our environment. (F1)** ✓ **To know and name some minibeasts e.g., worm, ladybird, caterpillar, woodlouse, spider etc. (F1)** ✓ **To know how to treat living things with care and respect. (F1)** ✓ **To know that all living things (plants and animals) need food. (F1)** ✓ **To know and describe some common habitats for minibeasts and locate these in our environment. (F2)** ✓ **To know and describe changes in our local natural environment e.g., leaves falling from trees, leaves turning brown, plants beginning to grow etc. (F2)** ✓ **To group different living things into plants and animals. (F2)** ✓ **To observe how the life of living things changes around them and talk about some of these changes through real-life experiences (visiting a local farm) e.g., egg, chicken, tadpole etc. (F2)** **Early Learning Goal** ✓ **Explore the natural world around them, making observations and drawing pictures of plants and animals.** ✓ **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.**	**Living Things & Their Habitats** ✓ **To understand that everything in our world is either alive, dead or has never been alive.** ✓ **To explain the difference between things that are dead and things that have never been alive.** ✓ **To group and sort things according to whether they are alive, dead or have never been alive.** ✓ **To explain that living things, plants and animals, live in habitats which suits them and provides them with what they need to live.** ✓ **To describe that all plants and animals need shelter, food and water and the habitat where they live will provide this.** ✓ **To name and recognise some insects.** ✓ **To name some habitats and some of the animals and plants that live within them e.g., woodland, garden, rainforests, deserts, and polar regions.** ✓ **To describe what a micro-habitat is and give an example of one in a larger habitat.** ✓ **To explain that all habitats and microhabitats provide the conditions that animals and plants like to live.** ✓ **To give an example of a food chain.** ✓ **To understand that a food chain always starts with a plant.** ✓ **To understand that if something happens to one part of a food chain, then it will impact the others.** **Working Scientifically** ✓ To group and sort materials, objects or living things based on their properties or features. (WS)	**Living Things & Their Habitats** **Year 4** ✓ **To know that living things can be grouped according to some of their features and characteristics.** ✓ **To know that animals with backbones are called vertebrates.** ✓ **To know that animals without backbones are called invertebrates.** ✓ **To know that classification keys can be used to groups, identify and names a variety of living things.** ✓ **To use knowledge of classification keys to group, identify and name living things in the local and wider environment.** ✓ **To know that environments can change which can pose danger to living things.** ✓ To know some environmental changes are due to mankind e.g., an oil spill. ✓ To know that some environmental changes occur naturally e.g., flood or earthquake. **Working Scientifically** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)** ✓ **To use secondary sources to support explanations to scientific questions. (WS)**
Vocabulary ✓ animal ✓ caterpillar ✓ change ✓ food ✓ home ✓ ladybird ✓ living ✓ minibeast ✓ plant ✓ spider ✓ woodlouse ✓ worm	**Vocabulary** ✓ alive ✓ dead ✓ desert ✓ food chain ✓ habitat ✓ insect ✓ micro-habitat ✓ never been alive	**Vocabulary** ✓ buttercup ✓ characteristic ✓ classify ✓ flood ✓ invertebrate ✓ marine ✓ negative ✓ oil spill

	✓ polar regions ✓ rainforest ✓ woodland	✓ positive ✓ vertebrate ✓ wildfire

KEY: Current Year Science Unit
History Geography D&T Art

Curriculum Overview Year 3

Please note these criteria have been selected to meet at least the ambition of the National Curriculum. Schools are welcome to edit which knowledge is to progress and which is to enhance according to context.	**Knowledge to Progress:**	**Essential knowledge pupils need to remember and use in order to access the next steps in their learning.**
	Knowledge to Enhance:	Knowledge that enhances pupils' understanding and further supports their wider application of the curriculum.

Prior Year's Curriculum Take Aways

Year 1
Rocks (Autumn 1): Gigantosaurus (Y1)

Rocks

EYFS
- ✓ **To know and name some materials that are found in the natural world around us e.g., wood, rock, stone, pebble, gravel, sand, shell etc. (F1)**
- ✓ **To know that rocks can be different shapes and sizes. (F1)**
- ✓ **To group some materials that are found in the natural world explaining their choices. (F2)**
- ✓ **To know that different environments will have different types of rocks. (F2)**

Vocabulary
- ✓ gravel
- ✓ pebble
- ✓ rock
- ✓ sand
- ✓ shell
- ✓ stone
- ✓ wood

Year 3 Curriculum Take Aways

CROSS-CURRICULAR LINKS:
Rocks (Autumn 1): Stone Age, Bronze Age & Iron Age (Autumn), Victorian Mining (Spring), Mining Communities (Spring)
Light (Spring 1): Electrical Systems
Forces & Magnets (Summer): Mechanisms

Rocks
- ✓ **To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties e.g., hard, soft, grains, crystals.**
- ✓ **To explain that a fossil is an imprint or the preserved remains, found in rock, of something that was once living.**
- ✓ **To describe, in simple terms, the process of how fossils are formed.**
- ✓ To use observations of fossils to name living things they could be, making reasoned justifications.
- ✓ To explain and describe the process of weathering.
- ✓ To describe how weathering affects rocks, including the type of rocks.
- ✓ **To know that soils are made from rocks and organic matter.**

Working Scientifically
- ✓ To identify patterns and relationships from data and observations from science enquiries, with support. (WS)
- ✓ **To report findings from scientific enquiries in a variety of ways, with support e.g., oral and written explanations, displays, presentation. (WS)**
- ✓ **To use simple scientific language when recording findings, with support. (WS)**
- ✓ **To make careful observations to collect relevant data to answer a question. (WS)**
- ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts, and tables, with scaffoldings and support. (WS)**
- ✓ **To begin to select, with support, the most appropriate type of scientific enquiry to answer a question e.g., simple fair test, criteria for grouping, sorting, and classifying, comparative test etc. (WS)**
- ✓ **To plan, with support and scaffolding, what simple equipment is needed to gather relevant data. (WS)**
- ✓ **To gather data from scientific enquiries, with support, using notes, simple tables and standard units. (WS)**
- ✓ **To identify new questions to investigate based on the observations or data obtained from an enquiry, with support. (WS)**
- ✓ **To draw simple conclusion, with support, from results and observations, to answer a question. (WS)**

Vocabulary
- ✓ clay
- ✓ crystals
- ✓ fossilisation
- ✓ fossil
- ✓ grains
- ✓ igneous rock
- ✓ metamorphic rock
- ✓ particle
- ✓ rock
- ✓ sandy soil
- ✓ sediment
- ✓ sedimentary rock
- ✓ silt
- ✓ soil
- ✓ weathering

Subsequent Year's Curriculum Take Aways

Forces & Magnets (Summer): Mechanical components (Y5)

Rocks

KS3
- ✓ To understand the composition and structure of the Earth.
- ✓ The explain the rock cycle and the formation of igneous, sedimentary, and metamorphic rocks.

Vocabulary
- ✓ atmosphere
- ✓ core
- ✓ crust
- ✓ erosion
- ✓ fossil
- ✓ freeze
- ✓ igneous
- ✓ mantle
- ✓ metamorphic
- ✓ sedimentary
- ✓ thaw

Animals Including Humans

Year 2

- ✓ To identify and name animals that lay eggs.
- ✓ To identify and name animals that birth live young.
- ✓ **To know that animals have offspring which grow into adults.**
- ✓ To explain that some eggs hatch and the offspring may go through stages before they look like their parents e.g., tadpole to frog.
- ✓ **To know that all animals need water, food, and air to survive.**
- ✓ **To know that if animals do not get enough food, air or water, they will eventually die.**
- ✓ **To know and explain why keeping clean is important.**
- ✓ To explain that germs and viruses can spread if we don't keep ourselves clean and can make ourselves and other people ill.
- ✓ **To explain how we can keep ourselves clean.**
- ✓ **To know and explain that exercise is important for us to keep healthy.**
- ✓ To explain that exercise helps our build strong muscles and makes our heart strong too.
- ✓ **To know and explain why different food groups and the amount of each we need is different for a balanced diet.**

Working Scientifically

- ✓ To identify features or properties of materials, objects or living things. (WS)
- ✓ To group and sort materials, objects or living things based on their properties or features. (WS)
- ✓ To begin to report findings from scientific enquiries in a range of ways: orally, written, labelled diagrams. (WS)
- ✓ To carry out simple tests. (WS)
- ✓ To observe simple changes over time. (WS)
- ✓ To use a variety of simple equipment to carry out scientific enquiries. (WS)

Vocabulary

- ✓ adult
- ✓ air
- ✓ chrysalis
- ✓ egg
- ✓ food
- ✓ lava
- ✓ life cycle
- ✓ live young
- ✓ offspring
- ✓ oxygen
- ✓ shelter
- ✓ diet
- ✓ exercise
- ✓ germs
- ✓ hygiene
- ✓ survival

Light

EYFS

- ✓ **To know when it is daytime and when it is nighttime. (F1)**
- ✓ **To know and name different points in their daily routine which are associated with daytime and nighttime. (F2)**

Animal Including Humans

- ✓ **To know that skeletons are made of bones.**
- ✓ **To know that most animals, including humans, have skeleton.**
- ✓ **To know that skeletons support the animal's body.**
- ✓ **To identify and name parts of a skeleton that protect parts of the body e.g. skull protects the brain.**
- ✓ **To describe how skeletons protect important organs.**
- ✓ **To identify parts of the skeleton that allows animals to move.**
- ✓ **To explain that skeletons allow movement through different types of joints.**
- ✓ **To describe how muscles work, along with joints, to enable an animal's skeleton to move.**
- ✓ **To explain that animals, including humans, need the right types and amount of nutrition.**
- ✓ **To explain that animals cannot make their own food but get nutrition from what they eat.**
- ✓ To describe and give examples of the effects of insufficient nutrition on the human body.
- ✓ To explain that the size and age of an animal can affect the amount of nutrition it requires.

Vocabulary

- ✓ bicep
- ✓ bone
- ✓ brain
- ✓ heart
- ✓ joint
- ✓ lungs
- ✓ movement
- ✓ muscle
- ✓ nutrition
- ✓ protect
- ✓ pull
- ✓ ribcage
- ✓ skeleton
- ✓ skull
- ✓ support
- ✓ tricep

Light

- ✓ **To know that darkness is the absence of light.**
- ✓ **To explain that we need light in order to see things.**
- ✓ To know that there are different sources of light.
- ✓ To name and identify different sources of light.
- ✓ **To know we need to protect our eyes and our skin from the sun's harmful rays.**
- ✓ **To know and name different opaque, translucent and transparent materials.**

Animal Including Humans

Year 4

- ✓ **To identify and name the different type of teeth – incisors, canines, molars.**
- ✓ **To describe the simple function of each type of tooth.**
- ✓ To identify features of the structure of a typical tooth.
- ✓ To know why good oral hygiene is important.
- ✓ To describe ways to support good oral hygiene.
- ✓ **To know and name the basic parts of the digestive system: mouth, oesophagus, stomach, small intestine, large intestine, anus.**
- ✓ **To describe the simple functions of the basic parts of the digestive system.**
- ✓ **To know how to construct and interpret food chains.**
- ✓ **To identify producers, predators and prey in a food chain.**
- ✓ To know how energy is transferred through a food chain.
- ✓ To know that energy in a food chain is provided by the Sun.
- ✓ To know and describe how changes to environments or populations can have implications to food chains.

Working Scientifically

- ✓ **To report findings from scientific enquiries in a variety of ways e.g., oral and written explanations, displays and presentations. (WS)**
- ✓ **To draw simple conclusions from results to find answers to a question. (WS)**
- ✓ **To identify similarities, differences and changes in data and observations. (WS)**
- ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)**
- ✓ **To gather data from scientific enquiries using notes, simple tables and standard units. (WS)**
- ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)**
- ✓ **To ask relevant questions about the world around them. (WS)**
- ✓ **To structure questions to be answered in a scientific enquiry. (WS)**
- ✓ To decide, with support, the observations to make, including the frequency of observations, in order to find answers to a question. (WS)

Vocabulary

- ✓ anus
- ✓ canines
- ✓ digestion
- ✓ digestive system
- ✓ enamel
- ✓ enzymes
- ✓ incisors
- ✓ large intestine
- ✓ molars
- ✓ mouth
- ✓ oesophagus
- ✓ plaque
- ✓ pulp
- ✓ root
- ✓ saliva
- ✓ small intestine
- ✓ stomach
- ✓ teeth
- ✓ consumer
- ✓ energy
- ✓ environmental change
- ✓ food chain
- ✓ predator
- ✓ prey
- ✓ producer
- ✓ sun

Light

Year 6

- ✓ To know that light travels in straight lines.
- ✓ To explain how light changes direction when it travels through different shaped lenses, concave, convex.
- ✓ To know and explain that objects are seen because they emit or reflect light.
- ✓ To know that we see because light travels from light sources or is reflected from objects into the eye.
- ✓ To know that a ray diagram shows the directions the light travels in.

✓ **To know that in different seasons the amount of daylight can change. (F2)** ✓ **To know that different objects can give us light e.g., lightbox, torch. (F2)** ✓ **To know that some objects have shadows in some situations. (F2)** **Early Learning Goal** ✓ **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.**	✓ **To know that a shadow is formed when an object blocks light.** ✓ To describe, with help, why a shadow has the same shape as the object casting it. ✓ **To use knowledge of opaque materials to explain why they cast the best shadows.** ✓ **To understand that there are patterns in the way the size of the shadow can be changed.** ✓ **To know that light is reflected from the surface of objects into our eyes and that is how we see them.**	✓ To use knowledge of how light travels to explain why shadows have the same shape as the objects that cast them.
	Working Scientifically ✓ To plan, with support, which measurements and standard units (if applicable) to use to gather relevant data. (WS) ✓ **To use a range of equipment appropriately, including data loggers (e.g., Lux meters), with support, to collect relevant data. (WS)** ✓ **To take accurate measurements, with support, using standard units e.g., cm, metres, grams, Newtons etc. (WS)** ✓ **To use simple scientific language when recording findings, with support. (WS)** ✓ **To analyse finding from scientific enquiries, with support, to find answers to questions. (WS)** ✓ To identify patterns and relationships from data and observations from science enquiries, with support. (WS) ✓ **To plan, with support and scaffolding, what simple equipment is needed to gather relevant data. (WS)** ✓ To decide, with support and structured scaffolds, the observations to make, including the frequency of observations, in order to find answers to a question. (WS) ✓ **To use relevant scientific language to discuss and communicate findings, to suit a given audience, with support. (WS)** ✓ To explain, with support, what needs to stay the same and what is changing in comparative and fair tests. (WS) ✓ **To report findings from scientific enquiries in a variety of ways, with support, e.g., oral and written explanations, displays, presentations etc. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar chart and tables, with scaffolding and support. (WS)** ✓ **To structure questions, with support, to be answered in a scientific enquiry. (WS)**	**Working Scientifically** ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS) ✓ To report and present findings from scientific enquiries in a variety of ways (presentations, displays etc.), including both oral and written forms, confidently. (WS) ✓ To identify secondary sources which support ideas and findings, separating fact from opinion. (WS) ✓ To identify evidence that refutes or supports a scientific idea. (WS) ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas. (WS) ✓ To explain how scientific ideas have developed over time. (WS) ✓ To explain which variables need to be controlled and why, when conducting a fair or comparative test. (WS) ✓ To identify the different variables in a fair or comparative test e.g., control, dependent, independent. (WS) ✓ To plan what observations to make and how long to make them for, in order to obtain relevant data. (WS) ✓ To explain how measurements and observations will be taken accurately. (WS) ✓ To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS) ✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question. (WS) ✓ To confidently take measurements with accuracy and precision, using a range of equipment. (WS)
Vocabulary ✓ bright ✓ dark ✓ day ✓ light ✓ moon ✓ night ✓ shadow ✓ stars ✓ sun ✓ torch	**Vocabulary** ✓ artificial light source ✓ beam ✓ blocked ✓ dark ✓ emit ✓ light ✓ light source ✓ natural light source ✓ opaque ✓ reflection ✓ shadows ✓ translucent ✓ transparent ✓ UV rays	**Vocabulary** ✓ concave lens ✓ convex lens ✓ light source ✓ reflection ✓ ray diagram
Plants **Year 2** ✓ **To know that mature plants grow from either seeds or bulbs** ✓ To explain what conditions a seed needs to grow or germinate - water and nutrients. ✓ **To know that seeds and bulbs like different conditions and may grow at different rates.** ✓ To describe what happens when a seed germinates. ✓ To know that when a seed germinates it begins to grow into an adult plant. ✓ **To describe what a plant needs to grow - water, sunlight, nutrients, and a suitable temperature.**	**Plants** ✓ **To identify and describe the functions of the basic parts of a flowering plant: roots, stem/trunk, leaves, flower.** ✓ **To know that roots anchor the plant in place.** ✓ **To know that the stem holds the leaves and flowers up.** ✓ To know that leaves use sunlight and water to produce the plant's food, and that this process is called photosynthesis. ✓ **To explain how differences in plants e.g. root length, help their survival.** ✓ **To describe the process of transpiration.** ✓ **To know that roots absorb water and nutrients from the soil.** ✓ **To know that the stem transports water and nutrients around the plant.** ✓ **To know that some plants have flowers, and this enables the plant to reproduce.** ✓ **To name and identify the parts of a flower needed for pollination: stamen, stigma, ovary.**	**Plants** **KS3** ✓ To understand the reproduction process in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.

	✓ **To describe pollination as pollen, which is produced by the stamen, being transferred onto the stigma.** ✓ **To know that seeds are formed in the ovary.** ✓ **To know that pollination forms seeds, sometimes contained in berries or fruits.** ✓ **To know and explain the different ways seeds can be dispersed: wind, water, animals.** ✓ To group and sort seeds on how they will be dispersed based on their common features. ✓ To describe germination as the part of a plant's life cycle when it begins to sprout and grow. ✓ To name the different stages in a plant's life cycle. ✓ To describe how a plant changes through each stage of its life cycle. ✓ To describe how humans can have a negative impact on the life cycle of a plant e.g. pollution in the soil harming roots.	
Working Scientifically ✓ To begin to explain what the data gathered shows and how it can help answer questions. (WS) ✓ To begin to use simple scientific language, and vocabulary. (WS) ✓ To use simple secondary sources to find answers to questions. (WS) ✓ To use observations to begin to suggest answers to questions. (WS) ✓ To begin to report findings from scientific enquiries in a range of ways: orally, written, labelled diagrams. (WS) ✓ To use everyday units of measurements e.g., cm, metres, seconds, minutes, grams and kg, to record data, with support (WS) ✓ To observe simple changes over time. (WS) ✓ To carry out simple tests. (WS) ✓ To recognise that simple questions can be answered in different ways. (WS) ✓ To record scientific enquiry data and observations using structured templates and frames e.g., simple table, pictograms, tally charts, block diagrams and labelled diagrams. (WS) ✓ To begin to describe how a test was carried out to find answers to questions. (WS) ✓ To group and sort materials, objects or living things based on their properties or features. (WS)	**Working Scientifically** ✓ **To use a range of equipment appropriately, including data loggers (e.g., Lux meters), with support, to collect relevant data. (WS)** ✓ **To make careful observations to collect relevant data to answer a question. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with scaffolding and support. (WS)** ✓ **To use simple scientific language when recordings findings, with support. (WS)** ✓ **To identify similarities, differences and changes in data and observations, with support. (WS)**	
Vocabulary ✓ **bulb** ✓ **germination** ✓ **grow** ✓ **light** ✓ **mature plant** ✓ **nutrients** ✓ **oxygen** ✓ **shoot** ✓ **seed** ✓ **seed coat** ✓ **seedling** ✓ **soil** ✓ **survive** ✓ **water** ✓ **wilt**	**Vocabulary** ✓ **animal** ✓ **flower** ✓ **germination** ✓ **leaf** ✓ **nutrients** ✓ **ovary** ✓ **pollination** ✓ **roots** ✓ **seed dispersal** ✓ **stamen** ✓ **stem** ✓ **stigma** ✓ **transpiration** ✓ **water** ✓ **wind** ✓ **wilt** ✓ **xylem**	**Vocabulary** ✓ **chloroplast** ✓ **chlorophyll** ✓ **epidermis** ✓ **glucose** ✓ **guard cells** ✓ **palisade cells** ✓ **photosynthesis** ✓ **stomata**
Forces **EYFS** ✓ **To know what it means to move and apply this to moving myself and other objects appropriately. (F1)** ✓ **To know that some objects can be pulled and pushed. (F1)** ✓ **To know that some objects can sink and some objects can float. (F1)** ✓ **To know that some objects can be twisted. (F2)** ✓ **To use knowledge of objects that can be pulled, pushed and twisted to move them appropriately, eg, push a door to open, twist a jar to open. (F2)** ✓ **To know what a magnet is and have opportunities to use them. (F2)**	**Forces and Magnets** ✓ **To know that a force is a push, pull or twist.** ✓ To identify examples of different forces e.g., pulling a door open, pushing a trolley etc. ✓ **To describe how things move on different surfaces, making comparisons.** ✓ **To know that friction is a contact force.** ✓ To describe how friction can affect an object. ✓ **To know that magnets have two poles.** ✓ **To know how magnets can attract or repel each other.** ✓ **To know that a magnetic forces can act at a distance.**	**Forces** **Year 5** ✓ **To know that a force is a push, pull or twist and to give everyday examples of these in action.** ✓ **To know that a levers, pulleys and gears are simple machines.** ✓ To know that a lever has a fulcrum, load, and effort. ✓ **To know that a levers, pulleys and gears are simple machines.** ✓ **To explain that some simple machines allow a smaller force to have a greater effect.** ✓ To describe how movement increases when turning a small force into a bigger force.

	✓ **To use knowledge of magnets to predict whether the magnets will attract or repel each other, referring to their poles.** ✓ **To know that magnets attract some materials and not others.** ✓ **To compare and group together everyday materials on whether they are magnetic or non-magnetic.** ✓ **To name and identify magnetic materials.**	✓ **To know that gravity is a pulling force.** ✓ **To use knowledge of gravity to explain why unsupported objects fall towards the Earth.** ✓ To know the difference between mass and weight e.g., mass is constant, weight is affected by gravitational force. ✓ To know that the mass of an object does not affect the time taken for it to fall to the ground. ✓ **To use knowledge of friction as a contact force, to explain what causes it e.g., the resistance that one surface/object has when moving over another.** ✓ **To use knowledge of friction to explain how different surfaces affect friction.** ✓ To explain how to increase or reduce friction. ✓ **To know that air resistance is a pushing force.** ✓ **To describe air resistance as a force that is caused by air particles colliding with any object that moves through it.** ✓ To use knowledge of forces to use force arrows to show the size and direction of a force. ✓ **To know that water resistance is a force that uses friction to slow things down as they move through water.** ✓ **To use knowledge of water resistance to explain how the surface area affects the resistance e.g., the greater the surface area to greater the resistance.**
	Working Scientifically ✓ To begin to ask relevant questions about the world around them. (WS) ✓ To structure questions, with support, to be answered in a scientific enquiry. (WS) ✓ To use a range of equipment appropriately, including data loggers (e.g., Lux meters), with support, to collect relevant data. (WS) ✓ To know, with support and scaffolding, the most appropriate way to record findings from scientific enquiries. (WS) ✓ To record findings from scientific enquires using drawings, labelled diagrams, keys, bar charts and tables, with scaffolding and support. (WS) ✓ To analyse findings from scientific enquiries, with support, to find answers to a question. (WS) ✓ To begin to suggest ways to improve a scientific enquiry process, with support. (WS) ✓ To begin to make predictions more generally based on data or observation gathered and analysed. (WS) ✓ To report findings from scientific enquiries in a variety of ways, with support, e.g., oral and written explanations, displays, presentations. (WS) ✓ To use secondary sources to support explanations to scientific questions, with help. (WS) ✓ To make links between observations and data from scientific enquires and research from secondary sources, with support. (WS) ✓ To decide, with support and scaffolding, the most appropriate way to record findings from scientific enquires. (WS)	**Working Scientifically** ✓ **To identify, with support, the different variables in a fair or comparative test e.g., control, dependent, independent. (WS)** ✓ To explain, with support, which variables need to be controlled and why, when conducting a fair or comparative test. (WS) ✓ To identify different causal relationships and trends in data, with support. (WS) ✓ **To identify evidence that refutes or support a scientific idea, with support. (WS)** ✓ **To use a range of equipment, appropriately and accurately, with support, to take readings and observations in scientific enquiries. (WS)** ✓ **To know when and how to take repeat readings, using this knowledge to explain why, with support. (WS)** ✓ **To know and explain whether results are reliable, justifying why, with support. (WS)** ✓ **To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS)** ✓ **To identify evidence that refutes or support a scientific idea, with support. (WS)** ✓ **To record data and results of increasing complexity and accuracy using scientific diagrams and labels, tables, scatter graphs, bar and line graphs, with support. (WS)** ✓ **To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS)** ✓ **To predict wider results and trends based on the analysis of data gathered, with support. (WS)**
Vocabulary ✓ **float** ✓ **magnet** ✓ **move** ✓ **pull** ✓ **push** ✓ **sink** ✓ **twist**	**Vocabulary** ✓ **attract** ✓ **force** ✓ **friction** ✓ **magnet** ✓ **magnetic** ✓ **magnetic pole** ✓ **not magnetic** ✓ **push** ✓ **pull** ✓ **repel**	**Vocabulary** ✓ **air resistance** ✓ **effort** ✓ **force** ✓ **friction** ✓ **fulcrum** ✓ **gears** ✓ **gravity** ✓ **lever** ✓ **load** ✓ **mass** ✓ **Newtons** ✓ **pulley** ✓ **water resistance**

KEY: Current Year Science Unit
History Geography D&T Art

Curriculum Overview Year 4

Please note these criteria have been selected to meet at least the ambition of the National Curriculum. Schools are welcome to edit which knowledge is to progress and which is to enhance according to context.	**Knowledge to Progress:**	**Essential knowledge pupils need to remember and use in order to access the next steps in their learning.**
	Knowledge to Enhance:	Knowledge that enhances pupils' understanding and further supports their wider application of the curriculum.

Prior Year's Curriculum Take Aways

Electricity (Spring 2): Electrical Components

Animal Including Humans

Year 3

- ✓ **To know that skeletons are made of bones.**
- ✓ **To know that most animals, including humans, have skeleton.**
- ✓ **To know that skeletons support the animal's body.**
- ✓ **To identify and name parts of a skeleton that protect parts of the body e.g. skull protects the brain.**
- ✓ **To describe how skeletons protect important organs.**
- ✓ **To identify parts of the skeleton that allows animals to move.**
- ✓ **To explain that skeletons allow movement through different types of joints.**
- ✓ **To describe how muscles work, along with joints, to enable an animal's skeleton to move.**
- ✓ **To explain that animals, including humans, need the right types and amount of nutrition.**
- ✓ **To explain that animals cannot make their own food but get nutrition from what they eat.**
- ✓ To describe and give examples of the effects of insufficient nutrition on the human body.
- ✓ To explain that the size and age of an animal can affect the amount of nutrition it requires.

Vocabulary

- ✓ biceps
- ✓ bone
- ✓ brain
- ✓ heart
- ✓ joint
- ✓ lungs
- ✓ movement
- ✓ muscle
- ✓ nutrition
- ✓ protect
- ✓ pull
- ✓ ribcage
- ✓ skeleton
- ✓ skull
- ✓ support
- ✓ tricep

Year 4 Curriculum Take Aways

CROSS-CURRICULAR LINKS:
States of Matter (Spring 1): Rivers & the Water Cycle

Animal Including Humans

- ✓ **To identify and name the different type of teeth – incisors, canines, molars.**
- ✓ **To describe the simple function of each type of tooth.**
- ✓ To identify features of the structure of a typical tooth.
- ✓ To know why good oral hygiene is important.
- ✓ To describe ways to support good oral hygiene.
- ✓ **To know and name the basic parts of the digestive system: mouth, oesophagus, stomach, small intestine, large intestine, anus.**
- ✓ **To describe the simple functions of the basic parts of the digestive system.**
- ✓ **To know how to construct and interpret food chains.**
- ✓ **To identify producers, predators and prey in a food chain.**
- ✓ To know how energy is transferred through a food chain.
- ✓ To know that energy in a food chain is provided by the Sun.
- ✓ To know and describe how changes to environments or populations can have implications to food chains.

Working Scientifically

- ✓ **To report findings from scientific enquiries in a variety of ways e.g., oral and written explanations, displays and presentations. (WS)**
- ✓ **To draw simple conclusions from results to find answers to a question. (WS)**
- ✓ **To identify similarities, differences and changes in data and observations. (WS)**
- ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)**
- ✓ **To gather data from scientific enquiries using notes, simple tables and standard units. (WS)**
- ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)**
- ✓ **To ask relevant questions about the world around them. (WS)**
- ✓ **To structure questions to be answered in a scientific enquiry. (WS)**
- ✓ To decide, with support, the observations to make, including the frequency of observations, in order to find answers to a question. (WS)

Vocabulary

- ✓ anus
- ✓ canines
- ✓ digestion
- ✓ digestive system
- ✓ enamel
- ✓ enzymes
- ✓ incisors
- ✓ large intestine
- ✓ molars
- ✓ mouth
- ✓ oesophagus
- ✓ plaque
- ✓ pulp
- ✓ root
- ✓ saliva
- ✓ small intestine
- ✓ stomach
- ✓ teeth
- ✓ consumer
- ✓ energy
- ✓ environmental change
- ✓ food chain
- ✓ predator
- ✓ prey
- ✓ producer
- ✓ Sun

Subsequent Year's Curriculum Take Aways

Animals Including Humans

Year 5

- ✓ **To know that humans change as they grow older.**
- ✓ **To know the stages of the human life cycle.**
- ✓ **To describe the different features of the different stages of the human life cycle.**
- ✓ **To know and describe the physical changes (e.g., appearance) that occur from adulthood to old age.**
- ✓ **To know that puberty occurs during adolescence.**
- ✓ **To know that puberty is when sexual development occurs.**
- ✓ **To know that a gestation period is the length of time a foetus develops in the womb.**

Working Scientifically

- ✓ To explore ideas and identify different kinds of questions, with support, to be answered in scientific enquiry. (WS)
- ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs, with support. (WS)
- ✓ To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS)
- ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS)
- ✓ To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, with increasing confidence. (WS)
- ✓ To identify secondary sources which support ideas and findings, separating fact from opinion, with support. (WS)

Vocabulary

- ✓ adolescence
- ✓ adulthood
- ✓ baby
- ✓ baldness
- ✓ childhood
- ✓ foetus

Uses of Everyday Materials

Year 2

- ✓ **To explain how the properties of a material make them suitable for certain jobs.**
- ✓ **To describe which of the following materials: wood, metal, plastic, glass, brick, rock, paper, and cardboard, we would use to make different objects referring to their properties.**
- ✓ **To explain that some materials can change shape when we do something to them e.g. squash, bend, stretch, twist.**
- ✓ **To identify and name some materials that can be stretched e.g., rubber**
- ✓ **To identify and name some materials that can bend e.g., paper, some plastic, leather**
- ✓ **To identify and name some materials that can be squashed e.g., rubber, foam, sponge**
- ✓ **To identify and name some materials that can be twisted, wool, cotton**

States of Matter

- ✓ **To know the properties of solids, liquids and gases.**
- ✓ **To identify materials as solids, liquids or gases.**
- ✓ **To group materials according to whether they are solids, liquids or gases.**
- ✓ To know the particle structure of a solid, liquid and gas.
- ✓ To know what a non-Newtonian substance is.
- ✓ **To know that some materials change state when they are heated and cooled.**
- ✓ **To know the temperature at which some materials change state.**
- ✓ **To know and describe the process of evaporation.**
- ✓ **To know and describe the process of condensing.**
- ✓ **To know and describe the roles played by evaporations and condensation in the water cycle.**
- ✓ **To know the relationship between temperature and rate of evaporation.**

Properties and Changes of Materials

Year 5

- ✓ To use knowledge of a material's/object's multiple properties e.g., hardness and ability to compress, to explain and justify its uses.
- ✓ To use knowledge of magnetism to explain why some materials are more magnetic than others.
- ✓ To use knowledge of light to describe the suitability of materials/objects for a given purpose, referring to their properties e.g. transparency.
- ✓ To use knowledge of conductivity to describe whether a material/ object conducts heat.
- ✓ To use knowledge of a material/object's properties to justify their suitability for a given job e.g., electrical conductivity/thermal conductivity.
- ✓ To know what a reversible change is.
- ✓ To know what an irreversible change is.
- ✓ To use knowledge of states of matter to identify examples of reversible changes.
- ✓ To identify examples of irreversible changes.
- ✓ To explain the difference between a chemical reaction (irreversible) and a physical reaction (reversible).
- ✓ To know that an irreversible change results in the formation of new materials e.g., burning.
- ✓ To know what dissolving is.
- ✓ To know when a substance dissolves, a solution is made.
- ✓ To know how to recover a substance from a solution.
- ✓ To identify some materials that will dissolve.
- ✓ To know the most suitable order to separate a mixture referring to the properties within the mixture.
- ✓ To use knowledge of materials and their properties to justify the appropriate method to separate them from a mixture e.g., filtering, sieving, evaporating etc.

Working Scientifically

- ✓ **To group and sort materials, objects or living things based on their properties or features. (WS)**
- ✓ **To ask simple questions about the world around them. (WS)**
- ✓ To begin to use simple scientific language, and vocabulary. (WS)
- ✓ **To identify features or properties of materials, objects or living things. (WS)**
- ✓ **To use observations to begin to suggest answers to questions. (WS)**
- ✓ **To recognise that simple questions can be answered in different ways. (WS)**
- ✓ **To record scientific enquiry data and observations using structured templates and frames e.g., simple table, pictograms, tally charts, block diagrams and labelled diagrams. (WS)**
- ✓ **To use a variety of simple equipment to carry out scientific enquiries. (WS)**
- ✓ **To carry out simple tests. (WS)**
- ✓ **To begin to make careful observations when carrying out scientific enquiries. (WS)**
- ✓ **To begin to explain what the data gathered shows and how it can help answer questions. (WS)**
- ✓ To begin to notice patterns and relationships from observations. (WS)

Working Scientifically

- ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)**
- ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)**
- ✓ **To use simple scientific language when recording findings. (WS)**
- ✓ **To report findings from scientific enquiries in a variety of ways e.g., oral and written explanations, displays, presentations. (WS)**
- ✓ **To use secondary sources to support explanations to scientific enquiries. (WS)**
- ✓ To make links between observations and data from scientific enquiries and research from secondary sources. (WS)
- ✓ To explain what needs to stay the same and what is changing in a comparative and fair test. (WS)
- ✓ To decide, with support, the observation to makes, including the frequency of observations, in order to find answers to a question. (WS)
- ✓ **To identify new questions to investigate based on the observations or data obtained from an enquiry. (WS)**
- ✓ **To begin to suggest ways to improve a scientific enquiry process. (WS)**

Working Scientifically

- ✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question, with support. (WS)
- ✓ To plan and select, with support, the most appropriate equipment needed to take accurate measurements to gather relevant data. (WS)
- ✓ To plan what observations to make and how long to make them for, in order to obtain relevant data, with support. (WS)
- ✓ To use and develop keys, with support, to identify, classify and describe living things and materials. (WS)
- ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs, with support (WS)
- ✓ To explain how measurements and observations will be taken accurately, with support. (WS)
- ✓ To identify, with support, when further tests and observations are needed from the analysis of the results gathered, including amendments to tests.
- ✓ To use a range of equipment appropriately and accurately, with support, to take readings and observations in scientific enquires. (WS)
- ✓ To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, with increasing confidence. (WS)
- ✓ To explain, with support, which variables need to be controlled and why, when conducting a fair or comparative test. (WS)
- ✓ To identify, with support, the different variables in a fair or comparative test e.g., control, dependent, independent. (WS)

Vocabulary

- ✓ **bending**
- ✓ **squashing**
- ✓ **stretching**
- ✓ **twisting**
- ✓ **fireproof**
- ✓ **layer**
- ✓ **thermal**
- ✓ **uniform**

Vocabulary

- ✓ **cool**
- ✓ **condensation**
- ✓ **evaporation**
- ✓ **freeze**
- ✓ **melt**
- ✓ **particle**
- ✓ **precipitation**
- ✓ **solid**

Vocabulary

- ✓ **acid**
- ✓ **chemistry**
- ✓ **dissolve**
- ✓ **evaporation**
- ✓ **reversible**
- ✓ **separate**
- ✓ **sieving**
- ✓ **soluble**

	✓ gas ✓ heating ✓ liquid ✓ solidify ✓ water cycle ✓ water vapour	✓ filtration ✓ insoluble ✓ irreversible ✓ mixture ✓ solution ✓ thermal conductor ✓ thermal insulator
Electricity **EYFS** ✓ **To know that some objects have a way to turn them on and off. (F1)** ✓ **To know that we need to behave in a safe manner around electricity and electrical items. (F2)** ✓ **To know and name some everyday objects that use electricity. (F2)** ✓ **To know that some electrical objects contain bulbs and plugs. (F2)**	**Electricity** ✓ **To know and name appliances that use electricity.** ✓ To use knowledge of appliances to group them on whether they use main electricity or batteries. ✓ **To know how to construct a simple series electrical circuit.** ✓ **To identify and name the basic parts of a series electrical circuit - cells, wires, bulbs, switches, buzzers.** ✓ **To know what a complete series circuit is: complete loop, battery.** ✓ **To identify whether a lamp in a series circuit will light using knowledge of a complete circuit.** ✓ **To know that a switch opens and closes a circuit.** ✓ **To identify whether a lamp in a series circuit will light using knowledge of a switch.** ✓ To know an electrical conductor allows electricity to pass through it without difficulty. ✓ **To know and name some common conductors.** ✓ **To know that some materials, like metals, are good conductors of electricity.** ✓ To know electricity cannot pass through an electrical insulator easily. ✓ **To know and name some common insulators.**	**Electricity** **Year 6** ✓ To know and identify electrical components by their recognized symbols. ✓ To use knowledge of electrical components and series circuits to construct a series circuit. ✓ To know that a circuit needs to be closed to allow electrical current to pass along it. ✓ To identify and give examples of appliances that use certain electrical components. ✓ To know and explain the function of a switch. ✓ To describe how the position of a switch affects the functionality of a circuit. ✓ To explain how the function of a component e.g., brightness of a lamp, is affected by the number and voltage of cells in a circuit. ✓ To use knowledge of component and their functions to compare and give reasons for variations e.g., loudness of a buzzer.
	Working Scientifically ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)** ✓ **To make predictions more generally based on data or observations gathered and analysed. (WS)** ✓ To decide the most appropriate way to record findings from scientific enquiries. (WS) ✓ **To select, with support, the most appropriate type of scientific enquiry to answer a question e.g. simple fair test, criteria for grouping, sorting and classifying, comparative test etc. (WS)** ✓ **To report findings from scientific enquiries in a variety of ways e.g., oral and written explanations, displays, presentations. (WS)** ✓ To explain what needs to stay the same and what is changing in comparative and fair tests. (WS) ✓ **To plan, with support, what simple equipment is needed to gather relevant data. (WS)** ✓ **To use relevant scientific language to discuss and communicate findings, to suit a given audience. (WS)** ✓ To identify patterns and relationships from data and observations from science enquiries. (WS) ✓ **To ask relevant questions about the world around them. (WS)**	**Working Scientifically** ✓ To explore ideas and identify different kinds of questions to be answered in scientific enquiry. (WS) ✓ To plan and select the most appropriate equipment needed to take accurate measurements to gather relevant data. (WS) ✓ To use a range of equipment, appropriately and accurately to take readings and observations in scientific enquires. (WS) ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS) ✓ To identify when further test and observations are needed from the analysis of the results gathered, including amendments to tests. (WS) ✓ To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, confidently. (WS) ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas. (WS)
Vocabulary ✓ bulb ✓ electricity ✓ off ✓ on ✓ plug	**Vocabulary** ✓ appliance ✓ battery ✓ bulb ✓ buzzer ✓ cell ✓ circuit ✓ conductor ✓ insulator ✓ plug ✓ socket ✓ switch (open and closed) ✓ wire	**Vocabulary** ✓ appliance (electrical) ✓ cell ✓ component ✓ filament ✓ function ✓ parallel circuit

	✓ components	✓ resistance ✓ series circuit ✓ voltage
Sound **EYFS** ✓ **To know that sounds are something we hear. (F1)** ✓ **To know and talk about different sounds we hear in our environment. (F1)** ✓ **To use different objects to make loud, soft, low and high sounds e.g., voice, body parts, musical instruments etc. (F2)** ✓ **To know that we can feel some sounds through vibrations. (F2)**	**Sound** ✓ To know sound is a type of energy. ✓ **To know that sound is caused by something vibrating.** ✓ **To know that sounds travel through a medium to the ear.** ✓ **To know that the further the distance from a sound source, the fainter the sound, due to weaker vibrations.** ✓ **To know that the volume of a sound is how loud or how quiet it is.** ✓ **To know that stronger vibrations create a louder sound.** ✓ **To know that pitch is how high or low a sound is.** **Working Scientifically** ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)** ✓ To plan which measurements and standard units (if applicable) to use to gather relevant data. (WS) ✓ **To gather data from scientific enquiries using notes, simple tables, and standard units. (WS)** ✓ **To analyse findings from scientific enquiries to find answers to a question. (WS)** ✓ To identify patterns and relationships from data and observations from science enquiries. (WS) ✓ **To structure questions to be answered in a scientific enquiry. (WS)** ✓ **To select, with support, the most appropriate type of scientific enquiry to answers a question e.g. simple fair test, criteria for grouping, sorting and classifying, comparative test etc. (WS)** ✓ **To use a range of equipment appropriately, including data loggers (e.g., Lux meters) to collect relevant data. (WS)** ✓ To explain what needs to stay the same and what is changing in comparative and fair tests. (WS) ✓ **To draw simple conclusions from results and observations to answer a question. (WS)** ✓ **To identify similarities, difference and changes in data and observations. (WS)**	**Sound** **KS3** ✓ To understand the sound is a form of energy. ✓ To explain the sound wave in terms of amplitude and wavelength. ✓ To understand the properties of sound waves. ✓ To calculate the speed of sound. ✓ To explain how sound travels. ✓ To understand the structure of the ear.
Vocabulary ✓ **hear** ✓ **high** ✓ **loud** ✓ **low** ✓ **soft** ✓ **sound**	**Vocabulary** ✓ **decibels** ✓ **medium** ✓ **pitch** ✓ **sound** ✓ **vibration** ✓ **volume**	**Vocabulary** ✓ **amplitude** ✓ **echo** ✓ **energy** ✓ **frequency** ✓ **frequency** ✓ **longitudinal** ✓ **sound waves** ✓ **ultrasound** ✓ **vacuum**
Living Things & Their Habitats **Year 2** ✓ To understand that everything in our world is either alive, dead or has never been alive. ✓ To explain the difference between things that are dead and things that have never been alive. ✓ To group and sort things according to whether they are alive, dead or have never been alive.	**Living Things & Their Habitats** **Year 4** ✓ **To know that living things can be grouped according to some of their features and characteristics.** ✓ **To know that animals with backbones are called vertebrates.** ✓ **To know that animals without backbones are called invertebrates.** ✓ **To know that classification keys can be used to groups, identify and names a variety of living things.** ✓ **To use knowledge of classification keys to group, identify and name living**	**Living Things & Their Habitats** **Year 5** ✓ **To explain the differences in the lifecycles of mammals, amphibians, insects, and birds.** ✓ **To know most mammals give birth to live offspring and that they look like their adult parent.** ✓ **To know that some animals experience metamorphosis e.g., caterpillar to butterfly.** ✓ To know that metamorphosis supports survival in some species.

✓ To explain that living things, plants and animals, live in habitats which suits them and provides them with what they need to live. ✓ To describe that all plants and animals need shelter, food and water and the habitat where they live will provide this. ✓ To name and recognise some insects. ✓ To name some habitats and some of the animals and plants that live within them e.g., woodland, garden, rainforests, deserts, and polar regions. ✓ To describe what a micro-habitat is and give an example of one in a larger habitat. ✓ To explain that all habitats and microhabitats provide the conditions that animals and plants like to live. ✓ To give an example of a food chain. ✓ To understand that a food chain always starts with a plant. ✓ To understand that if something happens to one part of a food chain, then it will impact the others.	**things in the local and wider environment.** ✓ **To know that environments can change which can pose danger to living things.** ✓ To know some environmental changes are due to mankind e.g., an oil spill. ✓ To know that some environmental changes occur naturally e.g., flood or earthquake.	✓ **To know that most animals reproduce sexually.** ✓ **To know that some animals from some broad groups (birds, reptiles, amphibians) lay eggs to produce young.** ✓ To know the different features of different types of eggs. ✓ To know that eggs can be fertilised internally or externally. ✓ **To know that some plants reproduce using sexual reproduction known as pollination.** ✓ **To know that some plants reproduce asexually e.g., bulbs and tubers.**
Working Scientifically ✓ To group and sort materials, objects or living things based on their properties or features. (WS)	**Working Scientifically** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)** ✓ **To use secondary sources to support explanations to scientific questions. (WS)**	**Working Scientifically** ✓ **To select and plan the most appropriate type of scientific enquiry to answer a scientific question, with support. (WS)** ✓ **To plan and select, with support, the most appropriate equipment needed to take accurate measurements to gather relevant data. (WS)** ✓ **To record data accurately using scientific diagrams and labels, tables. scatter graphs, bar and line graphs, with support. (WS)** ✓ **To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS)**
Vocabulary ✓ alive ✓ dead ✓ desert ✓ food chain ✓ habitat ✓ insect ✓ micro-habitat ✓ never been alive ✓ polar regions ✓ rainforest ✓ woodland	**Vocabulary** ✓ buttercup ✓ characteristic ✓ classify ✓ flood ✓ invertebrate ✓ marine ✓ negative ✓ oil spill ✓ positive ✓ vertebrate ✓ wildfire	**Vocabulary** ✓ **anther** ✓ **asexual reproduction** ✓ **carpel** ✓ **egg** ✓ **fertilisation** ✓ **filament** ✓ **larva** ✓ **metamorphosis** ✓ **offspring** ✓ **ovary** ✓ **sexual reproduction** ✓ **stamen** ✓ **stigma** ✓ **style**

KEY: Current Year Science Unit
History Geography D&T Art

Curriculum Overview Year 5

Please note these criteria have been selected to meet at least the ambition of the National Curriculum. Schools are welcome to edit which knowledge is to progress and which is to enhance according to context.	**Knowledge to Progress:**	**Essential knowledge pupils need to remember and use in order to access the next steps in their learning.**
	Knowledge to Enhance:	Knowledge that enhances pupils' understanding and further supports their wider application of the curriculum.

Prior Year's Curriculum Take Aways

Forces (Spring 2): Mechanical Components (Y3)
Properties and changes of materials (Summer): Great Fire of London (Y2)

Living Things & Their Habitats

Year 4

- ✓ **To know that living things can be grouped according to some of their features and characteristics.**
- ✓ **To know that animals with backbones are called vertebrates.**
- ✓ **To know that animals without backbones are called invertebrates.**
- ✓ **To know that classification keys can be used to groups, identify and names a variety of living things.**
- ✓ **To use knowledge of classification keys to group, identify and name living things in the local and wider environment.**
- ✓ **To know that environments can change which can pose danger to living things.**
- ✓ To know some environmental changes are due to mankind e.g., an oil spill.
- ✓ To know that some environmental changes occur naturally e.g., flood or earthquake.

Working Scientifically

- ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)**
- ✓ **To use secondary sources to support explanations to scientific questions. (WS)**

Vocabulary

- ✓ buttercup
- ✓ characteristic
- ✓ classify
- ✓ flood
- ✓ invertebrate
- ✓ marine
- ✓ negative
- ✓ oil spill
- ✓ positive
- ✓ vertebrate
- ✓ wildfire

Year 5 Curriculum Take Aways

CROSS-CURRICULAR LINKS:
Earth & Space (Spring 1): Mechanical Components

Living Things & Their Habitats

- ✓ **To explain the differences in the lifecycles of mammals, amphibians, insects, and birds.**
- ✓ **To know most mammals give birth to live offspring and that they look like their adult parent.**
- ✓ **To know that some animals experience metamorphosis e.g., caterpillar to butterfly.**
- ✓ To know that metamorphosis supports survival in some species.
- ✓ **To know that most animals reproduce sexually.**
- ✓ **To know that some animals from some broad groups (birds, reptiles, amphibians) lay eggs to produce young.**
- ✓ To know the different features of different types of eggs.
- ✓ To know that eggs can be fertilised internally or externally.
- ✓ **To know that some plants reproduce using sexual reproduction known as pollination.**
- ✓ **To know that some plants reproduce asexually e.g., bulbs and tubers.**

Working Scientifically

- ✓ **To select and plan the most appropriate type of scientific enquiry to answer a scientific question, with support. (WS)**
- ✓ **To plan and select, with support, the most appropriate equipment needed to take accurate measurements to gather relevant data. (WS)**
- ✓ **To record data accurately using scientific diagrams and labels, tables. scatter graphs, bar and line graphs, with support. (WS)**
- ✓ **To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS)**

Vocabulary

- ✓ **anther**
- ✓ **asexual reproduction**
- ✓ **carpel**
- ✓ **egg**
- ✓ **fertilisation**
- ✓ **filament**
- ✓ **larva**
- ✓ **metamorphosis**
- ✓ **offspring**
- ✓ **ovary**
- ✓ **sexual reproduction**
- ✓ **stamen**
- ✓ **stigma**
- ✓ **style**

Subsequent Year's Curriculum Take Aways

CROSS-CURRICULAR LINKS:
Living Things and Their Habitats (Autumn 2): Food & Nutrition

Living Things & Their Habitats

Year 6

- ✓ To know what vertebrates and invertebrates are.
- ✓ **To identify similarities and differences between living things.**
- ✓ **To classify living things according to their common observable characteristics.**
- ✓ **To explain what classification is.**
- ✓ **To use knowledge of observable characteristic to justify the groups livings things have been classified in.**

Working Scientifically

- ✓ To use and develop keys to identify, classify and describe living things and materials. (WS)
- ✓ To explain how scientific ideas have developed over time. (WS)
- ✓ To identify evidence that refutes or supports a scientific idea. (WS)
- ✓ To identify secondary sources which support ideas and findings, separating fact from opinion. (WS)
- ✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question. (WS)
- ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS)
- ✓ To predict wider results and trends based on the analysis of data gathered. (WS)

Vocabulary

- ✓ **bacteria**
- ✓ **biology**
- ✓ **fungus/fungi**
- ✓ **micro-organism**
- ✓ **spores**
- ✓ **taxonomy**
- ✓ **theory**
- ✓ **virus**

Animal Including Humans	Animals Including Humans	Animals Including Humans
Year 4 ✓ **To identify and name the different type of teeth – incisors, canines, molars.** ✓ **To describe the simple function of each type of tooth.** ✓ To identify features of the structure of a typical tooth. ✓ To know why good oral hygiene is important. ✓ To describe ways to support good oral hygiene. ✓ **To know and name the basic parts of the digestive system: mouth, oesophagus, stomach, small intestine, large intestine, anus.** ✓ **To describe the simple functions of the basic parts of the digestive system.** ✓ **To know how to construct and interpret food chains.** ✓ **To identify producers, predators and prey in a food chain.** ✓ To know how energy is transferred through a food chain. ✓ To know that energy in a food chain is provided by the Sun. ✓ To know and describe how changes to environments or populations can have implications to food chains.	✓ **To know that humans change as they grow older.** ✓ **To know the stages of the human life cycle.** ✓ **To describe the different features of the different stages of the human life cycle.** ✓ **To know and describe the physical changes (e.g., appearance) that occur from adulthood to old age.** ✓ **To know that puberty occurs during adolescence.** ✓ **To know that puberty is when sexual development occurs.** ✓ **To know that a gestation period is the length of time a foetus develops in the womb.**	**Year 6** ✓ To identify and name the main parts of the human circulatory system - heart, blood vessels, blood. ✓ To know that the heart is a muscle. ✓ To know that the basic function of the heart is to pump blood around the body. ✓ To identify and name the main parts of the heart. ✓ To know that the basic function of the blood vessels is to transport blood, nutrients, oxygen, and water around the body. ✓ To know that arteries, veins, and capillaries are the different types of blood vessels. ✓ To know that most arteries carry blood away from the heart and most veins carry blood back to the heart. ✓ To name the components of the blood: red blood cells, white blood cells, platelets, plasma. ✓ To know the basic functions of each component of the blood e.g., red blood cells transport oxygen. ✓ To use knowledge of the digestive system to describe how nutrients are transported around the body. ✓ To know and describe how capillaries are used to transfer nutrients around the body. ✓ To know and describe how lifestyle choices about nutrition affect the body. ✓ To describe the factors that affect how much of each food group a person needs to eat. ✓ To know and describe how choices about exercise affect the body. ✓ To know and describe how drugs affect the body.
Working Scientifically	**Working Scientifically**	**Working Scientifically**
✓ **To report findings from scientific enquiries in a variety of ways e.g., oral and written explanations, displays and presentations. (WS)** ✓ **To draw simple conclusions from results to find answers to a question. (WS)** ✓ **To identify similarities, differences and changes in data and observations. (WS)** ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)** ✓ **To gather data from scientific enquiries using notes, simple tables and standard units. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)** ✓ **To ask relevant questions about the world around them. (WS)** ✓ **To structure questions to be answered in a scientific enquiry. (WS)** ✓ To decide, with support, the observations to make, including the frequency of observations, in order to find answers to a question. (WS)	✓ To explore ideas and identify different kinds of questions, with support, to be answered in scientific enquiry. (WS) ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs, with support. (WS) ✓ To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS) ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS) ✓ To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, with increasing confidence. (WS) ✓ To identify secondary sources which support ideas and findings, separating fact from opinion, with support. (WS)	✓ **To know and describe how choices about exercise affect the body.** ✓ To explore ideas and identify different kinds of questions to be answered in scientific enquiry. (WS) ✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question. (WS) ✓ To plan what observations to make and how long to make them for, in order to obtain relevant data. (WS) ✓ To explain which variables need to be controlled and why, when conducting a fair or comparative test. (WS) ✓ To identify the different variables in a fair or comparative test e.g., control, dependent, independent. (WS) ✓ To use a range of equipment, appropriately and accurately to take readings and observations in scientific enquires. (WS) ✓ To confidently take measurements with accuracy and precision, using a range of equipment. (WS) ✓ To know when and how to take repeat readings, using this knowledge to explain why. (WS) ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS) ✓ To predict wider results and trends based on the analysis of data gathered. (WS) ✓ To know and explain whether results are reliable, justifying why. (WS) ✓ To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS) ✓ To identify different causal relationships and trends in data. (WS) ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas. (WS)

<table>
<tr><td></td><td></td><td>✓ To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, confidently. (WS)</td></tr>
<tr>
<td>Vocabulary
✓ anus
✓ canines
✓ digestion
✓ digestive system
✓ enamel
✓ enzymes
✓ incisors
✓ large intestine
✓ molars
✓ mouth
✓ oesophagus
✓ plaque
✓ pulp
✓ root
✓ saliva
✓ small intestine
✓ stomach
✓ teeth

Vocabulary
✓ consumer
✓ energy
✓ environmental change
✓ food chain
✓ predator
✓ prey
✓ producer
✓ Sun

Earth & Space
✓ To know what the Sun and the Moon are. (F1)
✓ To know that stars are in the sky. (F1)
✓ To know that we have daytime and nighttime. (F1)

✓ To know what the Earth is. (F2)
✓ To know that we live on Earth. (F2)
✓ To know that the Earth is not the only planet. (F2)
✓ To know and name someone who has visited space e.g., Buzz Aldrin. (F2)

<u>Early Learning Goal</u>
✓ 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.</td>
<td>Vocabulary
✓ adolescence
✓ adulthood
✓ baby
✓ baldness
✓ childhood
✓ foetus
✓ gestation
✓ grey hair
✓ old age
✓ puberty
✓ ultrasound
✓ wrinkles

Earth & Space
✓ To know that the Sun, Earth and Moon are approximately spherical bodies.
✓ To know that the Sun is a star.
✓ To know and name the eight planets in the Solar System.
✓ To know that an orbit is the path of an object around a particular point in space.
✓ To know that the planets in the Solar System orbit the Sun.
✓ To know that the planets orbit the Sun in and ellipse shape.
✓ To know that the Earth rotates at an angle.
✓ To know that the Earth’s rotation on its axis causes day and night.
✓ To know that the Earth’s rotation is the movement that appears to cause the Sun to move across the sky.
✓ To know that one full rotation of the Earth is approximately 24 hours; a day.
✓ To know that a moon is a celestial body that makes an orbit around a planet.
✓ To know that planets in the Solar System have different numbers of moons.
✓ To know that the Moon orbits the Earth.
✓ To know the Moon orbits the Earth approximately once every 28 days.
✓ To know that the Moon does not change shape, but its apparent change in shape is due to the position of the Sun, Earth and Moon.
✓ To know the apparent changes in shape of the Moon are known as the phases of the Moon.
✓ To know what a lunar and solar eclipse is and to describe them in simple terms.
✓ To know why it is important to develop scientific knowledge of unknown areas e.g., Space.

Working Scientifically
✓ To explain, with support, how scientific ideas have developed over time. (WS)
✓ To identify secondary sources which support ideas and findings, separating fact from opinion, with support. (WS)
✓ To take measurements with increasing accuracy and precision, using a range of equipment, including scaled measurements. (WS)
✓ To explore ideas and identify different kinds of questions, with support, to be answered in scientific enquiry. (WS)
✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question, with support. (WS)
✓ To identify, with support, the different variables in a fair or comparative test e.g., control, dependent, independent. (WS)
✓ To explain, with support, which variables need to be controlled and why, when conducting a fair or comparative test. (WS)</td>
<td>Vocabulary
✓ atrium
✓ artery
✓ blood
✓ blood vessel
✓ capillary
✓ circulatory system
✓ diet
✓ drugs
✓ exercise
✓ liver
✓ nutrients
✓ plasma
✓ platelets
✓ red blood cells
✓ valve
✓ vein
✓ ventricle
✓ villi
✓ white blood cell

Earth & Space
KS3
✓ To know that Gravity force, weight = mass x gravitational field strength (g)
✓ To recognise and name: our Sun as a star, other stars in our galaxy and other galaxies.
✓ To explain seasons and the Earth’s tilt, day length at different times of year and in different hemispheres.
✓ To use light year as a unit of astronomical distance.</td>
</tr>
</table>

	✓ To explain how measurements and observations will be taken accurately, with support. (WS) ✓ To know when and how to take repeat readings, using this knowledge to explain why, with support. (WS) ✓ To identify evidence that refutes or supports a scientific idea, with support. (WS) ✓ To report and present findings from scientific enquiries in a variety of ways (presentations, displays etc.) including both oral and written forms, with increasing confidence. (WS) ✓ To use a range of equipment, appropriately and accurately, with support, to take readings and observations in scientific enquiries. (WS) ✓ To identify different causal relationships and trends in data, with support. (WS) ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS) ✓ To predict wider results and trends based on the analysis of data gathered, with support. (WS) ✓ To analyse results and forms conclusions which answer scientific enquiry questions, with support. (WS)	
Vocabulary ✓ day ✓ Earth ✓ Moon ✓ night ✓ planet ✓ rocket ✓ sky ✓ space ✓ stars ✓ Sun	**Vocabulary** ✓ axis ✓ crater ✓ crescent ✓ eclipse ✓ galaxy ✓ gibbous ✓ Mars Rover ✓ orbit ✓ phases ✓ quarter ✓ rotate ✓ solar system ✓ space exploration ✓ spherical ✓ waning ✓ waxing	**Vocabulary** ✓ gas pressure ✓ mass ✓ Pascal ✓ pressure ✓ satellite ✓ weight
Forces and Magnets **Year 3** ✓ **To know that a force is a push, pull or twist.** ✓ To identify examples of different forces e.g., pulling a door open, pushing a trolley etc. ✓ **To describe how things move on different surfaces, making comparisons.** ✓ **To know that friction is a contact force.** ✓ To describe how friction can affect an object. ✓ **To know that magnets have two poles.** ✓ **To know how magnets can attract or repel each other.** ✓ **To know that a magnetic forces can act at a distance.** ✓ **To use knowledge of magnets to predict whether the magnets will attract or repel each other, referring to their poles.** ✓ **To know that magnets attract some materials and not others.** ✓ **To compare and group together everyday materials on whether they are magnetic or non-magnetic.** ✓ **To name and identify magnetic materials.**	**Forces** ✓ **To know that a force is a push, pull or twist and to give everyday examples of these in action.** ✓ **To know that a levers, pulleys and gears are simple machines.** ✓ To know that a lever has a fulcrum, load, and effort. ✓ **To know that a levers, pulleys and gears are simple machines.** ✓ **To explain that some simple machines allow a smaller force to have a greater effect.** ✓ To describe how movement increases when turning a small force into a bigger force. ✓ **To know that gravity is a pulling force.** ✓ **To use knowledge of gravity to explain why unsupported objects fall towards the Earth.** ✓ To know the difference between mass and weight e.g., mass is constant, weight is affected by gravitational force. ✓ To know that the mass of an object does not affect the time taken for it to fall to the ground. ✓ **To use knowledge of friction as a contact force, to explain what causes it e.g., the resistance that one surface/object has when moving over another.** ✓ **To use knowledge of friction to explain how different surfaces affect friction.** ✓ To explain how to increase or reduce friction. ✓ **To know that air resistance is a pushing force.** ✓ **To describe air resistance as a force that is caused by air particles colliding with any object that moves through it.** ✓ To use knowledge of forces to use force arrows to show the size and direction of a force.	**Forces** **KS3** ✓ To investigate magnetic fields by plotting with compass and representing them by field lines. ✓ To understand Earth's magnetism, compass, and navigation. ✓ To recognise forces as pushes or pulls, arising from the interaction between two objects. ✓ To use force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. ✓ To recognise movement as the turning effect of a force. ✓ To recognise and explain different forces: associated with deforming objects; stretching and squashing, springs; with rubbing and friction between surfaces; with pushing things out of the way; resistance to motion of air and water. ✓ To know that forces measured in Newtons and that measurements of stretch or compression as force is changed.

	✓ **To know that water resistance is a force that uses friction to slow things down as they move through water.** ✓ **To use knowledge of water resistance to explain how the surface area affects the resistance e.g., the greater the surface area to greater the resistance.**	
Working Scientifically ✓ To begin to ask relevant questions about the world around them. (WS) ✓ To structure questions, with support, to be answered in a scientific enquiry. (WS) ✓ To use a range of equipment appropriately, including data loggers (e.g., Lux meters), with support, to collect relevant data. (WS) ✓ To know, with support and scaffolding, the most appropriate way to record findings from scientific enquiries. (WS) ✓ To record findings from scientific enquires using drawings, labelled diagrams, keys, bar charts and tables, with scaffolding and support. (WS) ✓ To analyse findings from scientific enquiries, with support, to find answers to a question. (WS) ✓ To begin to suggest ways to improve a scientific enquiry process, with support. (WS) ✓ To begin to make predictions more generally based on data or observation gathered and analysed. (WS) ✓ To report findings from scientific enquiries in a variety of ways, with support, e.g., oral and written explanations, displays, presentations. (WS) ✓ To use secondary sources to support explanations to scientific questions, with help. (WS) ✓ To make links between observations and data from scientific enquires and research from secondary sources, with support. (WS) ✓ To decide, with support and scaffolding, the most appropriate way to record findings from scientific enquires. (WS)	**Working Scientifically** ✓ **To identify, with support, the different variables in a fair or comparative test e.g., control, dependent, independent. (WS)** ✓ To explain, with support, which variables need to be controlled and why, when conducting a fair or comparative test. (WS) ✓ To identify different causal relationships and trends in data, with support. (WS) ✓ **To identify evidence that refutes or support a scientific idea, with support. (WS)** ✓ **To use a range of equipment, appropriately and accurately, with support, to take readings and observations in scientific enquiries. (WS)** ✓ **To know when and how to take repeat readings, using this knowledge to explain why, with support. (WS)** ✓ **To know and explain whether results are reliable, justifying why, with support. (WS)** ✓ **To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS)** ✓ **To identify evidence that refutes or support a scientific idea, with support. (WS)** ✓ **To record data and results of increasing complexity and accuracy using scientific diagrams and labels, tables, scatter graphs, bar and line graphs, with support. (WS)** ✓ **To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS)** ✓ **To predict wider results and trends based on the analysis of data gathered, with support. (WS)**	
Vocabulary ✓ **attract** ✓ **force** ✓ **friction** ✓ **magnet** ✓ **magnetic** ✓ **magnetic pole** ✓ **not magnetic** ✓ **push** ✓ **pull** ✓ **repel**	**Vocabulary** ✓ **air resistance** ✓ **effort** ✓ **force** ✓ **friction** ✓ **fulcrum** ✓ **gears** ✓ **gravity** ✓ **lever** ✓ **load** ✓ **mass** ✓ **Newtons** ✓ **pulley** ✓ **water resistance**	**Vocabulary** ✓ **acceleration** ✓ **contact force** ✓ **drag force** ✓ **friction** ✓ **moment** ✓ **non-contact force** ✓ **pivot** ✓ **resultant force** ✓ **upthrust** ✓ **velocity**
States of Matter **Year 4** ✓ **To know the properties of solids, liquids and gases.** ✓ **To identify materials as solids, liquids or gases.** ✓ **To group materials according to whether they are solids, liquids or gases.** ✓ To know the particle structure of a solid, liquid and gas. ✓ To know what a non-Newtonian substance is. ✓ **To know that some materials change state when they are heated and cooled.** ✓ **To know the temperature at which some materials change state.** ✓ **To know and describe the process of evaporation.** ✓ **To know and describe the process of condensing.**	**Properties and Changes of Materials** ✓ To use knowledge of a material's/object's multiple properties e.g., hardness and ability to compress, to explain and justify its uses. ✓ To use knowledge of magnetism to explain why some materials are more magnetic than others. ✓ To use knowledge of light to describe the suitability of materials/objects for a given purpose, referring to their properties e.g. transparency. ✓ To use knowledge of conductivity to describe whether a material/ object conducts heat. ✓ To use knowledge of a material/object's properties to justify their suitability for a given job e.g., electrical conductivity/thermal conductivity. ✓ To know what a reversible change is. ✓ To know what an irreversible change is.	**KS3** ✓ To explore some simple chemical reactions of acids in which gas are made. ✓ To explore burning as a chemical reaction involving a gas, air and oxygen. ✓ To identify hydrogen and carbon dioxide as substances made during some reactions. ✓ To distinguish between elements and compounds and how they are represented by symbols and formulae. ✓ To recognise chemical change as a process in which atoms join together in new ways. ✓ To distinguish between compounds and mixtures

✓ **To know and describe the roles played by evaporations and condensation in the water cycle.** ✓ **To know the relationship between temperature and rate of evaporation.**	✓ To use knowledge of states of matter to identify examples of reversible changes. ✓ To identify examples of irreversible changes. ✓ To explain the difference between a chemical reaction (irreversible) and a physical reaction (reversible). ✓ To know that an irreversible change results in the formation of new materials e.g., burning. ✓ To know what dissolving is. ✓ To know when a substance dissolves, a solution is made. ✓ To know how to recover a substance from a solution. ✓ To identify some materials that will dissolve. ✓ To know the most suitable order to separate a mixture referring to the properties within the mixture. ✓ To use knowledge of materials and their properties to justify the appropriate method to separate them from a mixture e.g., filtering, sieving, evaporating etc.	
Working Scientifically ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)** ✓ **To use simple scientific language when recording findings. (WS)** ✓ **To report findings from scientific enquiries in a variety of ways e.g., oral and written explanations, displays, presentations. (WS)** ✓ **To use secondary sources to support explanations to scientific enquiries. (WS)** ✓ To make links between observations and data from scientific enquiries and research from secondary sources. (WS) ✓ To explain what needs to stay the same and what is changing in a comparative and fair test. (WS) ✓ To decide, with support, the observation to makes, including the frequency of observations, in order to find answers to a question. (WS) ✓ **To identify new questions to investigate based on the observations or data obtained from an enquiry. (WS)** ✓ **To begin to suggest ways to improve a scientific enquiry process. (WS)**	**Working Scientifically** ✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question, with support. (WS) ✓ To plan and select, with support, the most appropriate equipment needed to take accurate measurements to gather relevant data. (WS) ✓ To plan what observations to make and how long to make them for, in order to obtain relevant data, with support. (WS) ✓ To use and develop keys, with support, to identify, classify and describe living things and materials. (WS) ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs, with support (WS) ✓ To explain how measurements and observations will be taken accurately, with support. (WS) ✓ To identify, with support, when further tests and observations are needed from the analysis of the results gathered, including amendments to tests. ✓ To use a range of equipment appropriately and accurately, with support, to take readings and observations in scientific enquires. (WS) ✓ To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, with increasing confidence. (WS) ✓ To explain, with support, which variables need to be controlled and why, when conducting a fair or comparative test. (WS) ✓ To identify, with support, the different variables in a fair or comparative test e.g., control, dependent, independent. (WS)	
Vocabulary ✓ **cool** ✓ **condensation** ✓ **evaporation** ✓ **freeze** ✓ **gas** ✓ **heating** ✓ **liquid** ✓ **melt** ✓ **particle** ✓ **precipitation** ✓ **solid** ✓ **solidify** ✓ **water cycle** ✓ **water vapour**	**Vocabulary** ✓ **acid** ✓ **chemistry** ✓ **dissolve** ✓ **evaporation** ✓ **filtration** ✓ **insoluble** ✓ **irreversible** ✓ **mixture** ✓ **reversible** ✓ **separate** ✓ **sieving** ✓ **soluble** ✓ **solution** ✓ **thermal conductor** ✓ **thermal insulator**	**Vocabulary** ✓ **atom** ✓ **composition** ✓ **compound** ✓ **element** ✓ **element** ✓ **mixture** ✓ **product** ✓ **pure** ✓ **reactant**

KEY: Current Year Science Unit
History Geography D&T Art

Curriculum Overview Year 6

Please note these criteria have been selected to meet at least the ambition of the National Curriculum. Schools are welcome to edit which knowledge is to progress and which is to enhance according to context.	**Knowledge to Progress:**	**Essential knowledge pupils need to remember and use in order to access the next steps in their learning.**
	Knowledge to Enhance:	Knowledge that enhances pupils' understanding and further supports their wider application of the curriculum.

Prior Year's Curriculum Take Aways

Animals Including Humans

Year 5

- ✓ **To know that humans change as they grow older.**
- ✓ **To know the stages of the human life cycle.**
- ✓ **To describe the different features of the different stages of the human life cycle.**
- ✓ **To know and describe the physical changes (e.g., appearance) that occur from adulthood to old age.**
- ✓ **To know that puberty occurs during adolescence.**
- ✓ **To know that puberty is when sexual development occurs.**
- ✓ **To know that a gestation period is the length of time a foetus develops in the womb.**

Working Scientifically

- ✓ To explore ideas and identify different kinds of questions, with support, to be answered in scientific enquiry. (WS)
- ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs, with support. (WS)
- ✓ To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS)
- ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS)
- ✓ To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, with increasing confidence. (WS)
- ✓ To identify secondary sources which support ideas and findings, separating fact from opinion, with support. (WS)

Year 6 Curriculum Take Aways

CROSS-CURRICULAR LINKS:
Electricity (Spring 1): Electrical Systems
Light (Spring 2): WWII
Evolution & Inheritance (Summer 1): South America

Animals Including Humans

- ✓ To identify and name the main parts of the human circulatory system - heart, blood vessels, blood.
- ✓ To know that the heart is a muscle.
- ✓ To know that the basic function of the heart is to pump blood around the body.
- ✓ To identify and name the main parts of the heart.
- ✓ To know that the basic function of the blood vessels is to transport blood, nutrients, oxygen, and water around the body.
- ✓ To know that arteries, veins, and capillaries are the different types of blood vessels.
- ✓ To know that most arteries carry blood away from the heart and most veins carry blood back to the heart.
- ✓ To name the components of the blood: red blood cells, white blood cells, platelets, plasma.
- ✓ To know the basic functions of each component of the blood e.g., red blood cells transport oxygen.
- ✓ To use knowledge of the digestive system to describe how nutrients are transported around the body.
- ✓ To know and describe how capillaries are used to transfer nutrients around the body.
- ✓ To know and describe how lifestyle choices about nutrition affect the body.
- ✓ To describe the factors that affect how much of each food group a person needs to eat.
- ✓ To know and describe how choices about exercise affect the body.
- ✓ To know and describe how drugs affect the body.

Working Scientifically

- ✓ **To know and describe how choices about exercise affect the body.**
- ✓ To explore ideas and identify different kinds of questions to be answered in scientific enquiry. (WS)
- ✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question. (WS)
- ✓ To plan what observations to make and how long to make them for, in order to obtain relevant data. (WS)
- ✓ To explain which variables need to be controlled and why, when conducting a fair or comparative test. (WS)
- ✓ To identify the different variables in a fair or comparative test e.g., control, dependent, independent. (WS)
- ✓ To use a range of equipment, appropriately and accurately to take readings and observations in scientific enquires. (WS)
- ✓ To confidently take measurements with accuracy and precision, using a range of equipment. (WS)

KS3 Curriculum Content

Animals Including Humans

KS3

- ✓ To understand the consequences of imbalances in the diet, including obesity, starvation, and deficiency diseases
- ✓ The describe the effects of recreational drugs (including substance misuse) on behaviour, health, and life processes.
- ✓ The understand the structure and functions of the gas exchange system in humans, including adaptations to function.
- ✓ The describe the mechanism of breathing to move air in and out of the lungs.
- ✓ The understand the impact of exercise, asthma and smoking on the human gas exchange system.

	✓To know when and how to take repeat readings, using this knowledge to explain why. (WS) ✓To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS) ✓To predict wider results and trends based on the analysis of data gathered. (WS) ✓To know and explain whether results are reliable, justifying why. (WS) ✓To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS) ✓To identify different causal relationships and trends in data. (WS) ✓To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas. (WS) ✓To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, confidently. (WS)	
Vocabulary ✓ adolescence ✓ adulthood ✓ baby ✓ baldness ✓ childhood ✓ foetus ✓ gestation ✓ grey hair ✓ old age ✓ puberty ✓ ultrasound ✓ wrinkles	**Vocabulary** ✓ atrium ✓ artery ✓ blood ✓ blood vessel ✓ capillary ✓ circulatory system ✓ diet ✓ drugs ✓ exercise ✓ liver ✓ nutrients ✓ plasma ✓ platelets ✓ red blood cells ✓ valve ✓ vein ✓ ventricle ✓ villi ✓ white blood cell	**Vocabulary** ✓ aerobic ✓ alveoli ✓ anaerobic ✓ deficiency disease ✓ enzyme ✓ nutrients ✓ respiration ✓ symptom
Electricity **Year 4** ✓ **To know and name appliances that use electricity.** ✓ To use knowledge of appliances to group them on whether they use main electricity or batteries. ✓ **To know how to construct a simple series electrical circuit.** ✓ **To identify and name the basic parts of a series electrical circuit - cells, wires, bulbs, switches, buzzers.** ✓ **To know what a complete series circuit is: complete loop, batter.** ✓ **To identify whether a lamp in a series circuit will light using knowledge of a complete circuit.** ✓ **To know that a switch opens and closes a circuit.** ✓ **To identify whether a lamp in a series circuit will light using knowledge of a switch.** ✓ To know an electrical conductor allows electricity to pass through it without difficulty. ✓ **To know and name some common conductors.** ✓ **To know that some materials, like metals, are good conductors of electricity.** ✓ To know electricity cannot pass through an electrical insulator easily. ✓ **To know and name some common insulators.**	**Electricity** ✓ To know and identify electrical components by their recognized symbols. ✓ To use knowledge of electrical components and series circuits to construct a series circuit. ✓ To know that a circuit needs to be closed to allow electrical current to pass along it. ✓ To identify and give examples of appliances that use certain electrical components. ✓ To know and explain the function of a switch. ✓ To describe how the position of a switch affects the functionality of a circuit. ✓ To explain how the function of a component e.g., brightness of a lamp, is affected by the number and voltage of cells in a circuit. ✓ To use knowledge of component and their functions to compare and give reasons for variations e.g., loudness of a buzzer.	**Electricity** **KS3** ✓ To know that an electric current is measured in amperes ✓ To explain electricity in series and parallel circuits, currents add where branches meet and current as flow of charge. ✓ To investigate potential difference of current in circuits. ✓ To understand differences in resistance between conducting and insulating components (quantitative). ✓ To understand static electricity
Working Scientifically ✓ **To make careful and systematic observations to collect relevant data to answer a question. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar charts and tables, with support. (WS)** ✓ **To make predictions more generally based on data or observations gathered and analysed. (WS)** ✓ To decide the most appropriate way to record findings from scientific enquiries. (WS)	**Working Scientifically** ✓ To explore ideas and identify different kinds of questions to be answered in scientific enquiry. (WS) ✓ To plan and select the most appropriate equipment needed to take accurate measurements to gather relevant data. (WS) ✓ To use a range of equipment, appropriately and accurately to take readings and observations in scientific enquires. (WS) ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS) ✓ To identify when further test and observations are needed from the analysis	

✓ **To select, with support, the most appropriate type of scientific enquiry to answer a question e.g. simple fair test, criteria for grouping, sorting and classifying, comparative test etc. (WS)** ✓ **To report findings from scientific enquiries in a variety of ways e.g., oral and written explanations, displays, presentations. (WS)** ✓ To explain what needs to stay the same and what is changing in comparative and fair tests. (WS) ✓ **To plan, with support, what simple equipment is needed to gather relevant data. (WS)** ✓ **To use relevant scientific language to discuss and communicate findings, to suit a given audience. (WS)** ✓ To identify patterns and relationships from data and observations from science enquiries. (WS) ✓ **To ask relevant questions about the world around them. (WS)**	of the results gathered, including amendments to tests. (WS) ✓ To report and present findings from scientific enquiries in a variety of ways(presentations, displays etc.), including both oral and written forms, confidently. (WS) ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas. (WS)	
Vocabulary ✓ **appliance** ✓ **battery** ✓ **bulb** ✓ **buzzer** ✓ **cell** ✓ **circuit** ✓ **components** ✓ **conductor** ✓ **insulator** ✓ **plug** ✓ **socket** ✓ **switch (open and closed)** ✓ **wire**	**Vocabulary** ✓ **appliance (electrical)** ✓ **cell** ✓ **component** ✓ **filament** ✓ **function** ✓ **parallel circuit** ✓ **resistance** ✓ **series circuit** ✓ **voltage**	**Vocabulary** ✓ **ammeter** ✓ **current** ✓ **electromagnet** ✓ **electron** ✓ **induced magnetism** ✓ **magnetic field** ✓ **magnetic pole**
Light **Year 3** ✓ **To know that darkness is the absence of light.** ✓ **To explain that we need light in order to see things.** ✓ To know that there are different sources of light. ✓ To name and identify different sources of light. ✓ **To know we need to protect our eyes and our skin from the sun's harmful rays.** ✓ **To know and name different opaque, translucent and transparent materials.** ✓ **To know that a shadow is formed when an object blocks light.** ✓ To describe, with help, why a shadow has the same shape as the object casting it. ✓ **To use knowledge of opaque materials to explain why they cast the best shadows.** ✓ **To understand that there are patterns in the way the size of the shadow can be changed.** ✓ **To know that light is reflected from the surface of objects into our eyes and that is how we see them.**	**Light** ✓ To know that light travels in straight lines. ✓ To explain how light changes direction when it travels through different shaped lenses, concave, convex. ✓ To know and explain that objects are seen because they emit or reflect light. ✓ To know that we see because light travels from light sources or is reflected from objects into the eye. ✓ To know that a ray diagram shows the directions the light travels in. ✓ To use knowledge of how light travels to explain why shadows have the same shape as the objects that cast them.	**Light** **KS3** ✓ To know the similarities and differences between light waves and waves in matter. ✓ To understand light waves travelling through a vacuum; speed of light. ✓ To describe and explain the transmission of light through materials: absorption, diffuse scattering, and specular reflection at a surface. ✓ To use a ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative), the human eye. ✓ To understand light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras. ✓ To know that there are different frequencies of light, white light, and prisms (qualitative only) and that differential colour effects in absorption and diffuse reflection.
Working Scientifically ✓ To plan, with support, which measurements and standard units (if applicable) to use to gather relevant data. (WS) ✓ **To use a range of equipment appropriately, including data loggers (e.g., Lux meters), with support, to collect relevant data. (WS)** ✓ **To take accurate measurements, with support, using standard units e.g., cm, metres, grams, Newtons etc. (WS)** ✓ **To use simple scientific language when recording findings, with support. (WS)** ✓ **To analyse finding from scientific enquiries, with support, to find answers to questions. (WS)** ✓ To identify patterns and relationships from data and observations from science enquiries, with support. (WS) ✓ **To plan, with support and scaffolding, what simple equipment is needed to gather relevant data. (WS)** ✓ To decide, with support and structured scaffolds, the observations to make, including the frequency of observations, in order to find answers to a question. (WS) ✓ **To use relevant scientific language to discuss and communicate findings,**	**Working Scientifically** ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS) ✓ To report and present findings from scientific enquiries in a variety of ways (presentations, displays etc.), including both oral and written forms, confidently. (WS) ✓ To identify secondary sources which support ideas and findings, separating fact from opinion. (WS) ✓ To identify evidence that refutes or supports a scientific idea. (WS) ✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas. (WS) ✓ To explain how scientific ideas have developed over time. (WS) ✓ To explain which variables need to be controlled and why, when conducting a fair or comparative test. (WS) ✓ To identify the different variables in a fair or comparative test e.g., control, dependent, independent. (WS) ✓ To plan what observations to make and how long to make them for, in order	

to suit a given audience, with support. (WS) ✓ To explain, with support, what needs to stay the same and what is changing in comparative and fair tests. (WS) ✓ **To report findings from scientific enquiries in a variety of ways, with support, e.g., oral and written explanations, displays, presentations etc. (WS)** ✓ **To record findings from scientific enquiries using drawings, labelled diagrams, keys, bar chart and tables, with scaffolding and support. (WS)** ✓ **To structure questions, with support, to be answered in a scientific enquiry. (WS)**	to obtain relevant data. (WS) ✓ To explain how measurements and observations will be taken accurately. (WS) ✓ To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS) ✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question. (WS) ✓ To confidently take measurements with accuracy and precision, using a range of equipment. (WS)	
Vocabulary ✓ artificial light source ✓ beam ✓ blocked ✓ dark ✓ emit ✓ light ✓ light source ✓ natural light source ✓ opaque ✓ reflection ✓ shadows ✓ translucent ✓ transparent ✓ UV rays	**Vocabulary** ✓ concave lens ✓ convex lens ✓ light source ✓ reflection ✓ ray diagram	**Vocabulary** ✓ angle of incidence ✓ angles of reflection ✓ incident ray ✓ light intensity ✓ luminous ✓ non-luminous ✓ reflected ray ✓ reflection ✓ refraction
	Evolution & Inheritance ✓ To know that the surface of the Earth has changed over time, leading living things to adapt in order to survive. ✓ To know that living things have changed over time. ✓ To know and explain what adaptation is. ✓ To know that living things adapt to their environment to survive. ✓ To know and give examples of some animals that have become extinct e.g., dinosaurs. ✓ To explain how some living things that do not adapt become extinct. ✓ To know that some living things become extinct due to the actions of humans e.g., forced changes to their environment, poaching etc. ✓ To use knowledge of adaptation to explain some examples of how animals have adapted to suit their environment. ✓ To know and explain what evolution is. ✓ To know that adaptation over many years may lead to evolution. ✓ To use knowledge of adaptation to explain some examples of how plants have adapted to suit their environment. ✓ To know and explain that fossils provide information about living things that inhabited the Earth millions of years ago. ✓ To know and explain what inheritance is. ✓ To know that living things produce offspring of the same kind. ✓ To know that offspring are not identical to their parents. ✓ To know that living things inherit characteristics and features from their parents. ✓ To know that variation in offspring can lead to features which make animals more or less able to survive in particular environments.	**Evolution & Inheritance** **KS3** ✓ To understand that heredity is the process by which genetic information is transmitted from one generation to the next. ✓ To create a simple model of chromosomes, genes, and DNA in heredity. ✓ To understand the part played by Watson, Crick, Wilkins, and Franklin in the development of the DNA model. ✓ To know that the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection. ✓ To know that selective breeding can lead to new varieties. ✓ To know that changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction.
	Working Scientifically ✓ To explain how scientific ideas have developed over time. (WS) ✓ To identify secondary sources which support ideas and findings, separating fact from opinion. (WS) ✓ To explore ideas and identify different kinds of questions to be answered in scientific enquiry. (WS) ✓ To identify different causal relationships and trends in data. (WS) ✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS) ✓ To analyse results and form conclusions which answer scientific enquiry questions, with support. (WS)	

<table>
<tr>
<td></td>
<td>Vocabulary
✓ adaptation
✓ characteristics
✓ DNA
✓ evolution
✓ extinct
✓ inheritance
✓ mutation
✓ natural selection
✓ palaeontologist</td>
<td>Vocabulary
✓ continuous variation
✓ discontinuous variation
✓ DNA
✓ double helix
✓ environmental variation
✓ genetic variation
✓ nucleus
✓ reproduce
✓ species</td>
</tr>
<tr>
<td>Living Things & Their Habitats
Year 5
✓ To explain the differences in the lifecycles of mammals, amphibians, insects, and birds.
✓ To know most mammals give birth to live offspring and that they look like their adult parent.
✓ To know that some animals experience metamorphosis e.g., caterpillar to butterfly.
✓ To know that metamorphosis supports survival in some species.
✓ To know that most animals reproduce sexually.
✓ To know that some animals from some broad groups (birds, reptiles, amphibians) lay eggs to produce young.
✓ To know the different features of different types of eggs.
✓ To know that eggs can be fertilised internally or externally.
✓ To know that some plants reproduce using sexual reproduction known as pollination.
✓ To know that some plants reproduce asexually e.g., bulbs and tubers.</td>
<td>Living Things & Their Habitats
✓ To know what vertebrates and invertebrates are.
✓ To identify similarities and differences between living things.
✓ To classify living things according to their common observable characteristics.
✓ To explain what classification is.
✓ To use knowledge of observable characteristic to justify the groups livings things have been classified in.</td>
<td rowspan="2">Living Things & Their Habitats
KS3
✓ To explain how food chains within a habitat can be combined into food webs.
✓ To describe ways in which organisms are adapted to daily or seasonal changes in their environment and to their mode of feeding.
✓ To use the idea of adaptation to explain why some organisms can live more successfully than others in different habitat.
✓ To classify organisms according to Kingdom (for all organisms), Phyla (for plants and animals only) and Class (for mammals and arthropods only).
✓ To explain the distinction between continuous and discontinuous variation, giving examples to illustrate each.
✓ To use visible external features of organisms to use and construct keys for their identification.</td>
</tr>
<tr>
<td>Working Scientifically
✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question, with support. (WS)
✓ To plan and select, with support, the most appropriate equipment needed to take accurate measurements to gather relevant data. (WS)
✓ To record data accurately using scientific diagrams and labels, tables. scatter graphs, bar and line graphs, with support. (WS)
✓ To use relevant and accurate scientific language to discuss, communicate and justify scientific ideas, with support. (WS)</td>
<td>Working Scientifically
✓ To use and develop keys to identify, classify and describe living things and materials. (WS)
✓ To explain how scientific ideas have developed over time. (WS)
✓ To identify evidence that refutes or supports a scientific idea. (WS)
✓ To identify secondary sources which support ideas and findings, separating fact from opinion. (WS)
✓ To select and plan the most appropriate type of scientific enquiry to answer a scientific question. (WS)
✓ To record data and results of increasing complexity accurately using scientific diagrams and label, tables, scatter graphs, bar and line graphs. (WS)
✓ To predict wider results and trends based on the analysis of data gathered. (WS)</td>
</tr>
<tr>
<td>Vocabulary
✓ anther
✓ asexual reproduction
✓ carpel
✓ egg
✓ fertilisation
✓ filament
✓ larva
✓ metamorphosis
✓ offspring
✓ ovary
✓ sexual reproduction
✓ stamen
✓ stigma
✓ style</td>
<td>Vocabulary
✓ bacteria
✓ biology
✓ fungus/fungi
✓ micro-organism
✓ spores
✓ taxonomy
✓ theory
✓ virus</td>
<td>Vocabulary
✓ bioaccumulation
✓ decomposer
✓ ecosystem
✓ pyramids of biomass
✓ trophic level
✓ tropic levels</td>
</tr>
</table>

The Progression of Science- Important People Appendix

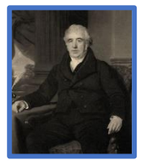
Year 1 Autumn 2
Everyday Materials:
Joseph Priestley

Year 1 Spring 1
Seasonal Changes:
Johannes Kepler

Year 1 Spring 1
Plants:
Monty Don

Year 1 Spring 2
Animals Including Humans:
Tilly Lockey

Year 1 Summer
Everyday Materials:
Charles Macintosh



Year 2 Autumn
Uses of Everyday Materials:
Alexander Parkes, Jean Baptiste Joseph

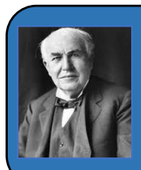
Year 2 Spring 1
Animals Including Humans:
Maria Sibylla Merian

Year 2 Summer 1
Plants:
Beatrix Potter

Year 2 Summer 2
Living Things & Their Habitats:
Antonella Wilby

Year 3 Autumn 1
Rocks:
Mary Anning

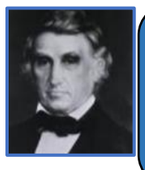
Year 3 Autumn 2
Animals Including Humans:
Andreas Vesalius



Year 3 Spring 1
Light:
Thomas Edison

Year 3 Spring 2
Plants:
Julius Von Sachs

Year 3 Summer
Forces & Magnets:
William Gilbert

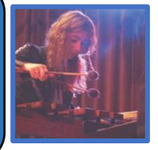


Year 4 Autumn
Animals Including Humans:
William Beaumont

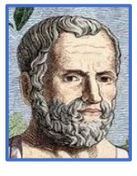
Year 4 Spring 1
States of Matter:
Bernard Pallissy
Jan Baptiste Van Helmont

Year 4 Spring 2
Electricity:
Joseph Swan

Year 4 Summer 1
Sound:
Evelyn Glennie



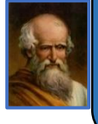
Year 4 Summer 2
Living Things & Their Habitats:
Genesis Butler



Year 5 Autumn 1
Living Things & Their Habitats:
Theophrastus

Year 5 Autumn 2
Animals Including Humans:
Ian Donald

Year 5 Spring 1
Earth & Space:
Neil Armstrong, Mae Jemison, Tim Peake



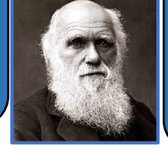
Year 5 Spring 2
Forces:
Archimedes
Isaac Newton

Year 5 Summer
Properties & Changes of Materials:
Antoine Laurent Lavoisier

Year 6 Autumn
Animals Including Humans:
William Harvey

Year 6 Spring 1
Electricity:
Alessandro Volts

Year 6 Spring 2
Light:
Alhazen



Year 6 Summer 1
Evolution & Inheritance:
Charles Darwin & Jack Horner

Year 6 Summer 2
Living Things & Their Habitats:
Carl Linnaeus