Science

Haslingfield Endowed Primary School

Curriculum

Our Science Curriculum

Intent

Key Overview

At Haslingfield Primary, it is our intention to recognise the importance of science in every aspect of daily life. We give the teaching and learning of science the prominence it requires. Science is taught as a discrete subject.

Knowledge Building

The scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world, whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of science, today and for the future. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

Skills Enquiry

Scientific enquiry skills are embedded in each topic the children study, which are revisited and developed throughout their time at school. All children are encouraged to develop and use a range of skills including:

- observations,
- planning and investigations,
- question the world around them
- explore possible answers for their scientific based questions.

Concepts taught are reinforced by focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions.

Oracy and Discussion

Specialist vocabulary for topics is taught and built up, and effective questioning is used to enable pupils to communicate their scientific ideas.

Implementation

Themes and Topics

Through our science curriculum we cover a range of topics to ensure a comprehensive scheme of learning.

Programme of Study

Our science programme of study follows the White Rose Scheme of Learning.

A clear and comprehensive scheme of teaching and learning should plan for practical investigative opportunities within science lessons. Children will reflect on previous learning and cross curricular links will be made wherever possible.

Children will be able to build on prior knowledge and link ideas together, enabling them to question and become enquiry-based learners. Attainment will be assessed each half term.

Application

Children will use a range of resources to develop their knowledge and understanding that is integral to their learning and develop their understanding of working scientifically.

Children have access to key language and meanings in order to understand and readily apply to their written, mathematical and verbal communication of their skills.

Challenge questions are set for pupils to apply their learning in a philosophical and open manner. Trips and visits from experts are organised to enhance the children's learning experience;

Where applicable, links to science will be made during the children's topical learning.

Impact

Key Overview

Through our science curriculum, our children will leave primary school with a secure understanding of the natural world around them and scientific processes.

Knowledge Acquisition

Our children will learn about the different materials surrounding them, rocks and states of matter. They will learn about animals, plants and living things and their habitats and the development of species through evolution and inheritance. They will also learn about forces, light, sound, electricity, and Earth in space. Additionally, they will learn about sustainability and caring for our planet.

Skilled Learners

Our children will be able to question ideas and reflect on their knowledge. They will work collaboratively and practically to investigate and experiment, explaining the process they have taken whilst being able to reason scientifically.

Able and Compassionate Scientists

Our children will retain knowledge that is pertinent to science with a real-life context, allowing them to understand, respect and protect the world and environment they live in.

Science Programme of Study

YEAR 1 | YEAR 2

	Year 1	Year 2
Autumn 1	Biology – The Human Body Biology – Seasonal Changes	Biology – Animals' Needs for Survival Biology – Humans
Autumn 2	Chemistry – Materials Biology – Seasonal Changes	Chemistry – Materials Sustainability – Plastic
Spring 1	Biology – Planting Biology - Animals	Biology – Plants (Light and Dark) Biology – Living Things and Their Habitats
Spring 2	Sustainability – Caring for the Planet Biology – Seasonal Changes Biology – Planting	Biology – Living Things and Their Habitats Biology – Plants (Light and Dark)
Summer 1	Biology – Plants Biology – Planting	Biology – Plants (Bulbs and Seeds) Biology – Growing Up
Summer 2	Sustainability – Growing and Cooking Biology – Seasonal Changes	Biology – Plants (Bulbs and Seeds) Biology – Growing Up Sustainability – Wildlife

Science Programme of Study

YEAR 3 & YEAR 4

	Year 3	Year 4
Autumn 1	Biology – Skeletons Biology – Movement Biology – Nutrition and Diet	Biology – Group and Classify Living Things Biology – Data Collection
Autumn 2	Sustainability – Food Waste Chemistry - Rocks	Chemistry – States of Matter
Spring 1	Chemistry – Fossils Chemistry - Soils	Physics – Sound Biology – Data Collection
Spring 2	Physics - Light	Physics – Electricity Sustainability – Energy
Summer 1	Biology – Plants	Biology – Data Collection Biology – Habitats Sustainability – Deforestation
Summer 2	Physics - Forces Physics – Magnets Sustainability – Biodiversity	Biology – The Digestive System Biology – Food Chains

YEAR 5 & YEAR 6

	Year 5	Year 6
Autumn 1	Physics - Forces	Biology – Living Things and Their Habitats
Autumn 2	Physics – Space Sustainability – Global Warming	Physics – Electricity Sustainability – Renewable Energy
Spring 1	Chemistry – Properties of Materials	Physics – Light Sustainability – Light Pollution
Spring 2	Biology – Animals Including Humans Biology – Life Cycles	Biology – The Circulatory System Biology – Diet, Drugs and Lifestyle
Summer 1	Biology – Reproduction Chemistry – Reversible and Irreversible Changes	Biology – Variation Biology – Adaptations
Summer 2	Sustainability – Plastic Pollution Biology – Reproduction	Biology – Fossils Themed Projects (preparing for Year 7)

Science in the Early Years Profile

EARLY YEARS | SCIENCE SKILLS PROGRESSION

Children working within the Early Years Foundation Stage explore science themes by exploring the world around them. In the Reception year they should be given opportunity for both adult directed and child initiated scientific enquiry. Skilled practitioners will look for opportunities in the children's play to apply scientific themes.

Areas of the EYFSP that explicit connections can be made	Listening Attention and Understanding	Speaking	Building Relationships	Fine Motor	Comprehension	Word Reading
How Early Learning Goals can be demonstrated through science	✔ Listen to and ask questions about the on a scientific theme ✔ Make comments about what they have seen to show an understanding of cause and effect	✔ Use new scientific vocabulary to show understanding ✔ Express their ideas and feelings about what they have heard, seen, participated in.	✔ Explore scientific themes alongside peers, taking turns with resources, building on ideas, and develop collaborative thinking on what to do next/reasons for what they have observed.	✔ Use a range of scientific equipment and resources carefully and accurately.	✔ Demonstrate an understanding of newly-taught scientific vocabulary.	✔ Through science-themed vocabulary and text, children can ➢ Read words consistent with their phonic knowledge through blending ➢ Read aloud some simple sentences
	Writing	**Number and Numerical Patterns**	**The Natural World**	**Past and Present**	**Creating With Materials**	**Being Imaginative and Expressive**
	✔ Through science themed vocabulary and knowledge learning, children can ➢ Spell words by identifying sounds in them and representing the sounds with a letter or letters ➢ Write simple phrases and sentences that can be read by others	✔ Within science-themed learning, children can apply their counting skills to 20, compare quantities, and addition and subtraction facts to 10. ✔ Children can group and organise objects, counting how many objects are in a group. ✔ Spot patterns in simple data collection	✔ Explore the natural world around them, making observations and drawing pictures of animals and plants ✔ Know some similarities between the natural world around them and contrasting environments ✔ Understand some important processes and changes in the natural world around them, including the seasons	✔ Learn about some scientist in the past ✔ Learn about some scientists in the present (eg. a special visitor)	✔ Explore a range of materials and techniques to create and represent their understanding of their surrounding environment and the scientific knowledge they have been taught. ✔ Share their creations, explaining the process and meaning.	✔ Think of own ways to investigate ✔ Begin to think of ways that may change the outcome to what they already know / have seen

Working Scientifically Skills Progression

Ask questions

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Ask simple questions.	• **Ask simple questions and recognise that they can be answered in different ways.**	• Ask questions and understand there are different enquiry types they could use to answer them.	• **Ask relevant questions and use different types of scientific enquiry to answer them.**	• Ask scientific questions and begin to understand which questions would be best suited to each enquiry type.	• Ask relevant scientific questions and choose which enquiry type would be best suited to answer them.

Plan

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning is not explicitly mentioned in the KS1 curriculum however, if appropriate, children can verbally state what they will investigate, what they will change and what they will keep the same.		• Make relevant predictions. • Identify what they will change, observe and keep the same. • With support, set up simple practical enquiries.	• Make predictions based on simple scientific knowledge. • Identify what they will change, observe or measure and keep the same. • **Set up simple practical enquiries, comparative and fair tests.**	• Make predictions based on scientific knowledge. • With support, plan different types of scientific enquiry. Where appropriate, identify the dependent, independent and controlled variables.	• Make predictions based on scientific knowledge. • **Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.**

Working Scientifically Skills Progression

Make observations

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Observe closely.	• **Observe closely, using simple equipment.**	• Make careful observations using scientific equipment.	• **Make systematic and careful observations** using scientific equipment.	• Use a range of scientific equipment to make systematic and careful observations.	• Use a range of scientific equipment to make systematic and careful observations with increased complexity.

Take measurements

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Carry out simple tests using non-standard measurements when appropriate.	• **Perform simple tests** using standard units when appropriate.	• Perform tests and simple experiments and take measurements using standard units.	• **Take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.**	• Take accurate measurements using a range of scientific equipment. Start to take repeat readings when appropriate.	• **Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.**

Working Scientifically Skills Progression

Gather, record and classify data

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Gather and record simple data. • Sort objects and living things into groups based on simple properties.	• **Gather and record data to help in answering questions.** • **Identifying and classifying.**	• Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables.	• **Gather, record and classify data in a variety of ways to help in answering questions.** • **Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.**	• Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs.	• **Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.**

Present findings

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Explain what they found out to an adult or a partner.	• **Talk about what they have found out and how they found it out. (non-statutory)**	• Report on findings from enquiries, including oral and written explanations.	• **Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.**	• Report and present findings from enquiries, including conclusions and begin to identify causal relationships in oral and written forms such as displays and other presentations.	• **Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.**

Working Scientifically Skills Progression

Answer questions and make conclusions

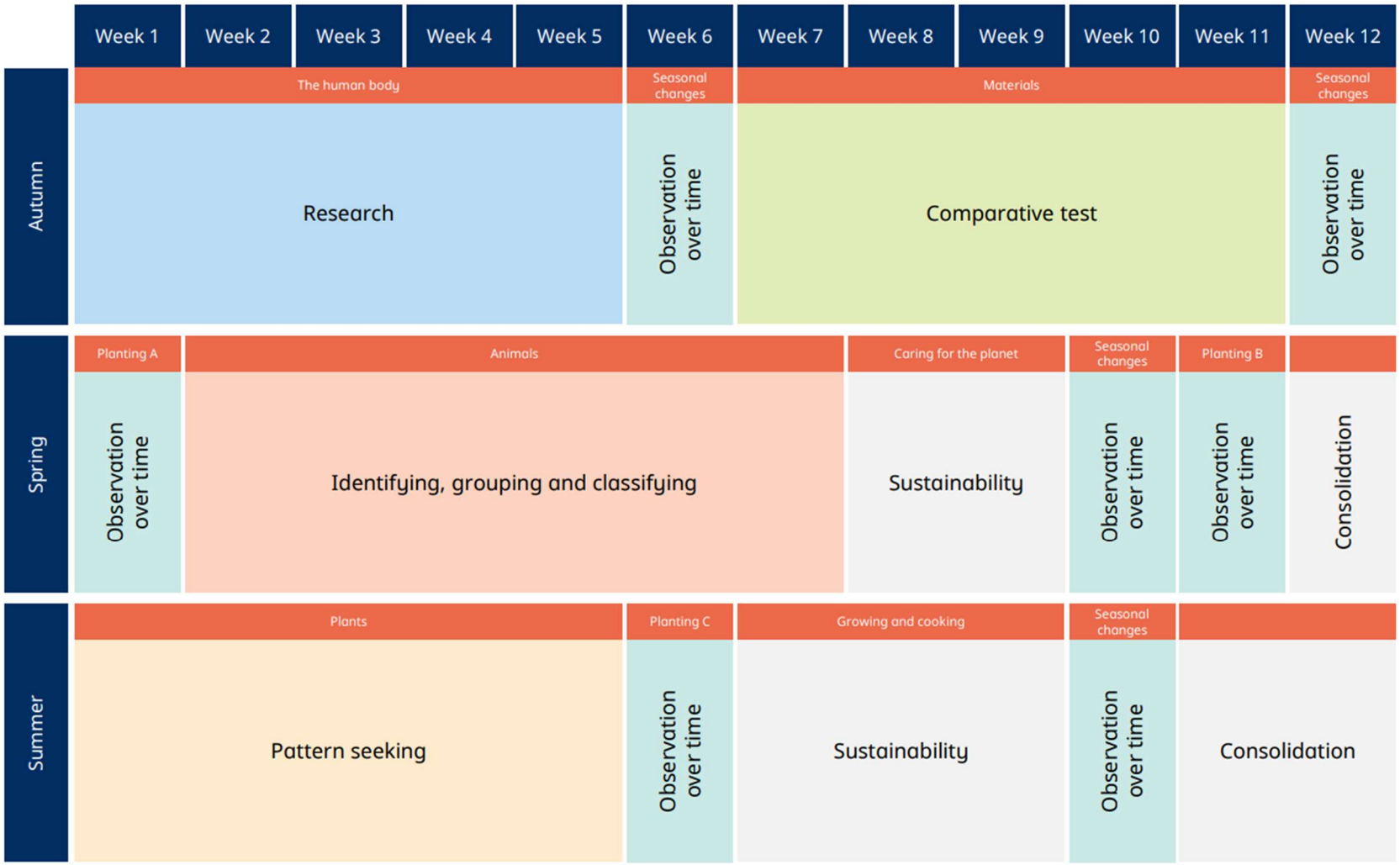
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Answer simple questions.	• **Use their observations and ideas to suggest answers to questions.**	• Make simple conclusions. • Use results, findings or observations to answer questions.	• **Use straight-forward scientific evidence to answer questions or to support their findings.** • **Use results to draw simple conclusions.** • **Begin to identify differences, similarities or changes related to simple ideas or processes.**	• Make conclusions based on scientific evidence and from their own testing and findings. • Identify scientific evidence and use it to answer questions.	• Make conclusions based on scientific evidence and from their own testing and findings. • **Identify scientific evidence that has been used to support or refute ideas or arguments.**

Evaluate

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluating is not explicitly mentioned in the KS1 curriculum.		• Suggest questions for further investigation.	• **Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.**	• Continue to use results to draw simple conclusions, suggest improvements and raise further questions for possible testing.	• **Use test results to make predictions to set up further comparative and fair tests.** • Provide some simple examples of how to extend the investigation.

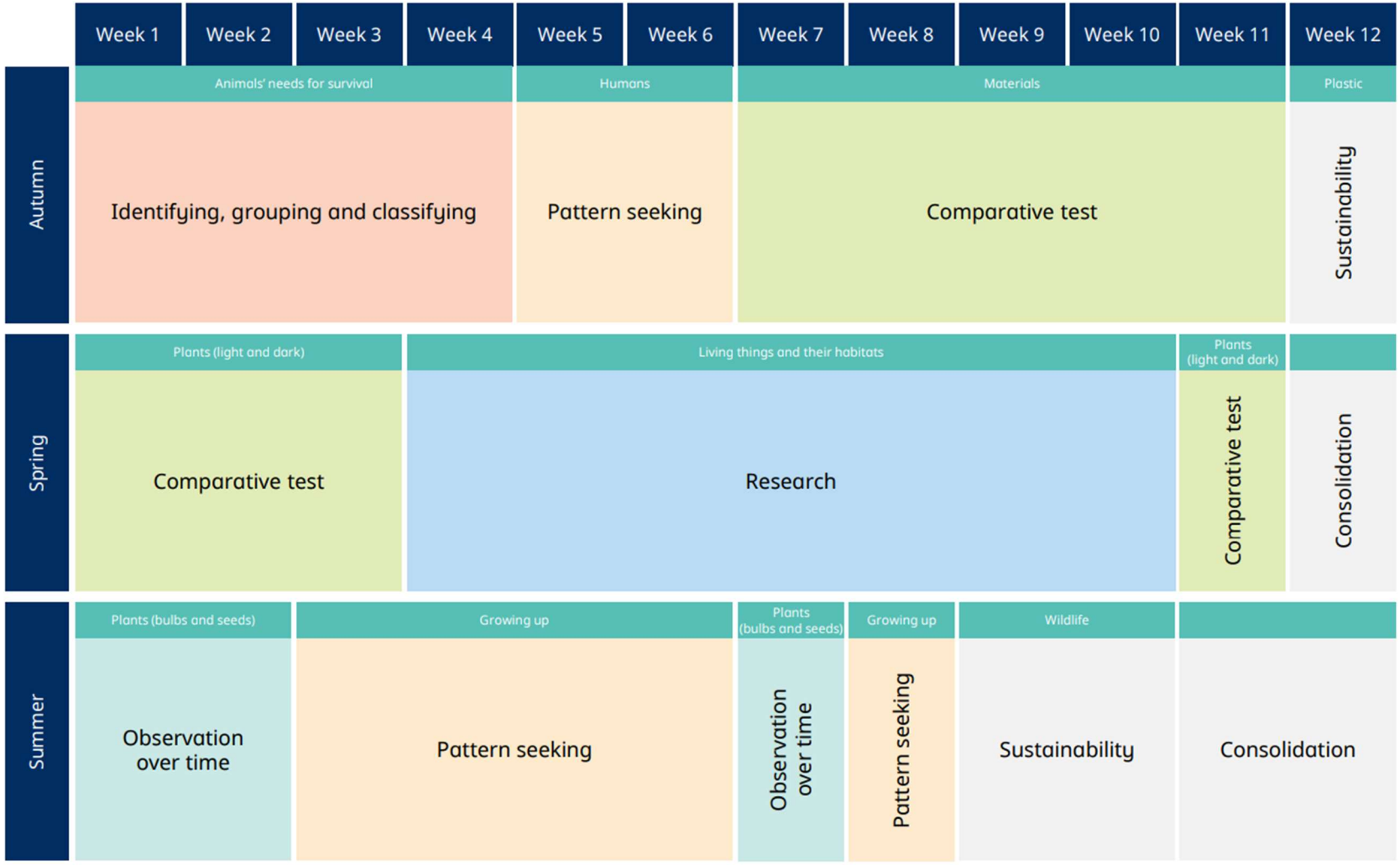
Enquiry Types Mapping

Year 1 | Enquiry types mapping



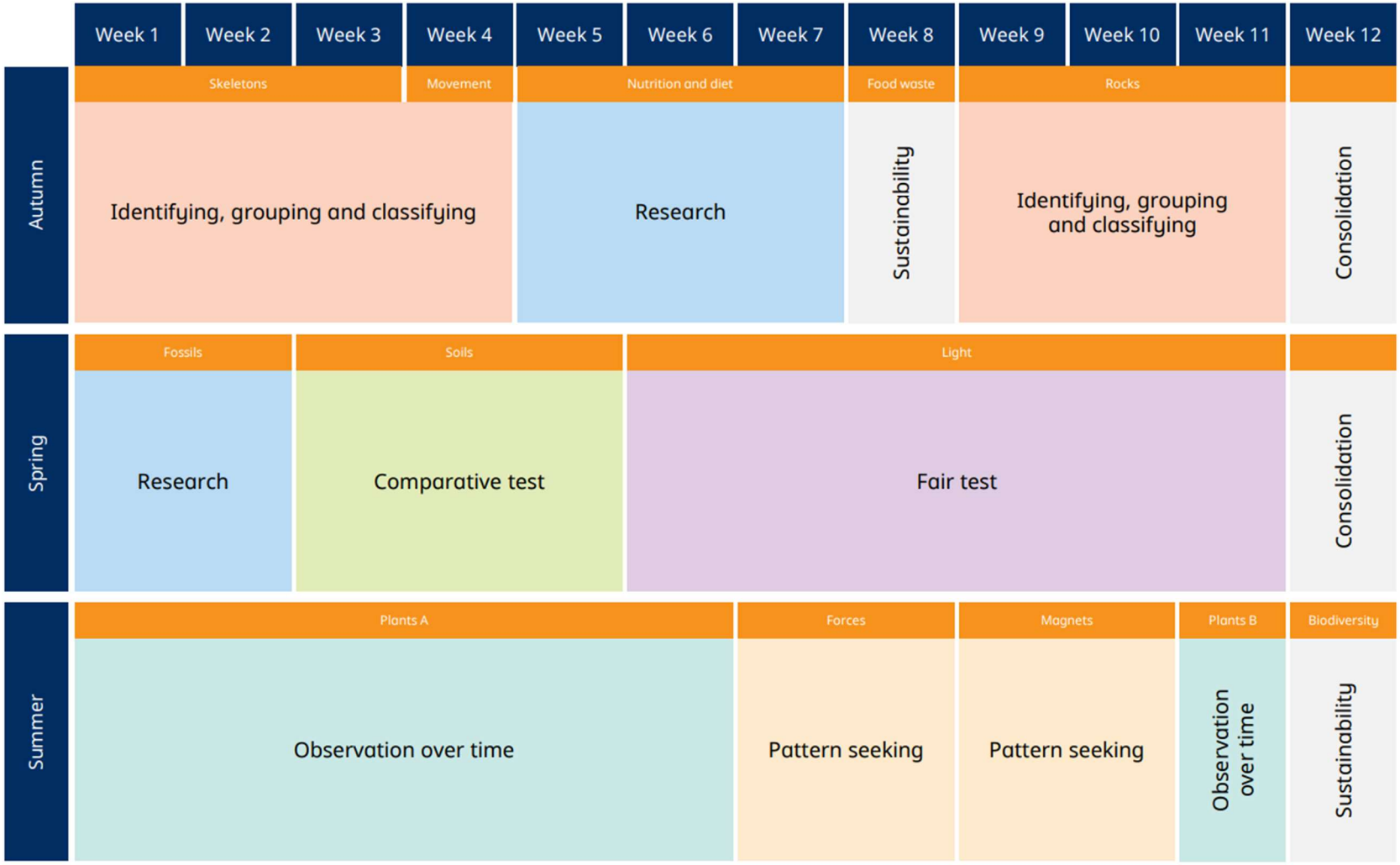
Enquiry Types Mapping

Year 2 | Enquiry types mapping



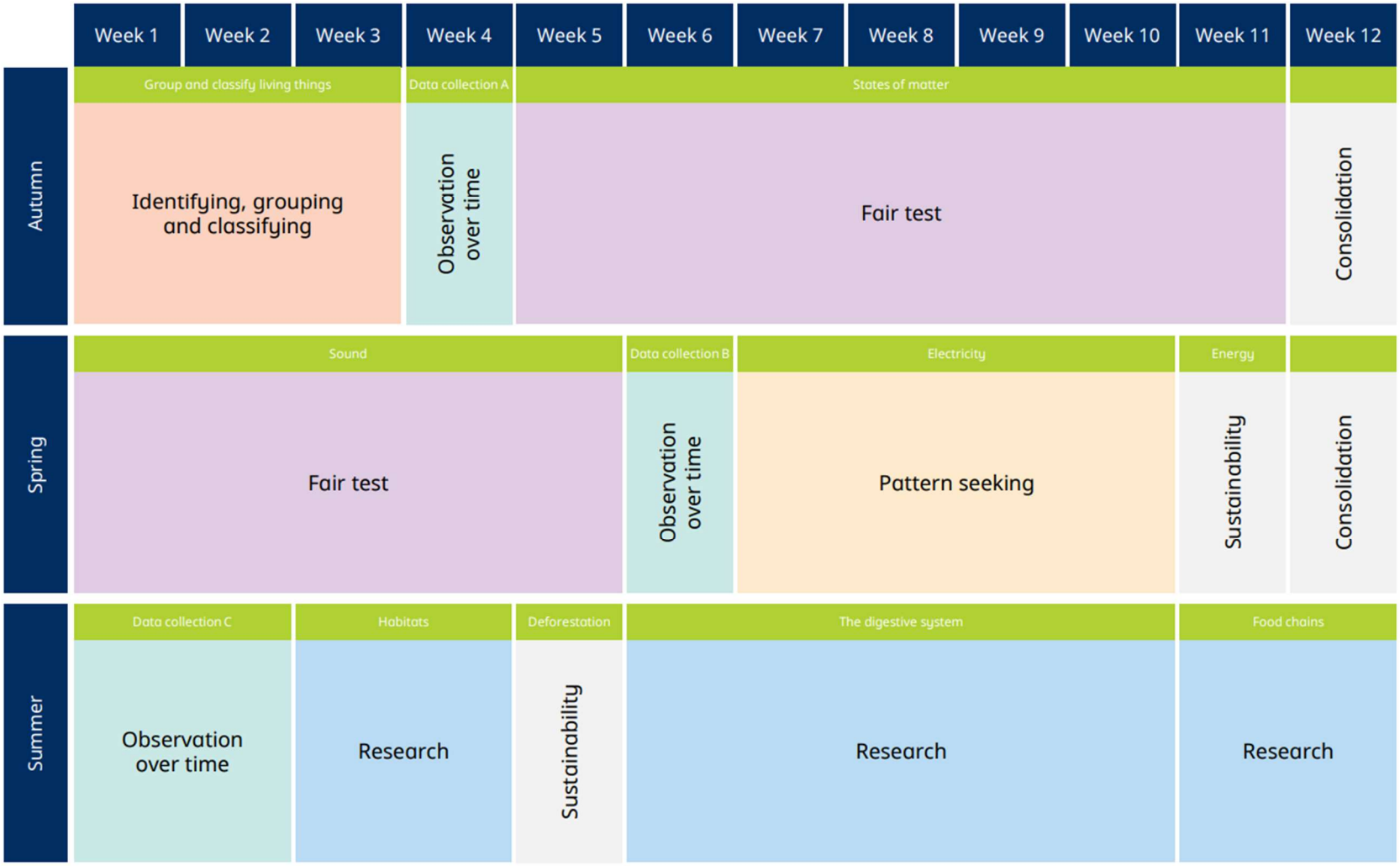
Enquiry Types Mapping

Year 3 | Enquiry types mapping



Enquiry Types Mapping

Year 4 | Enquiry types mapping

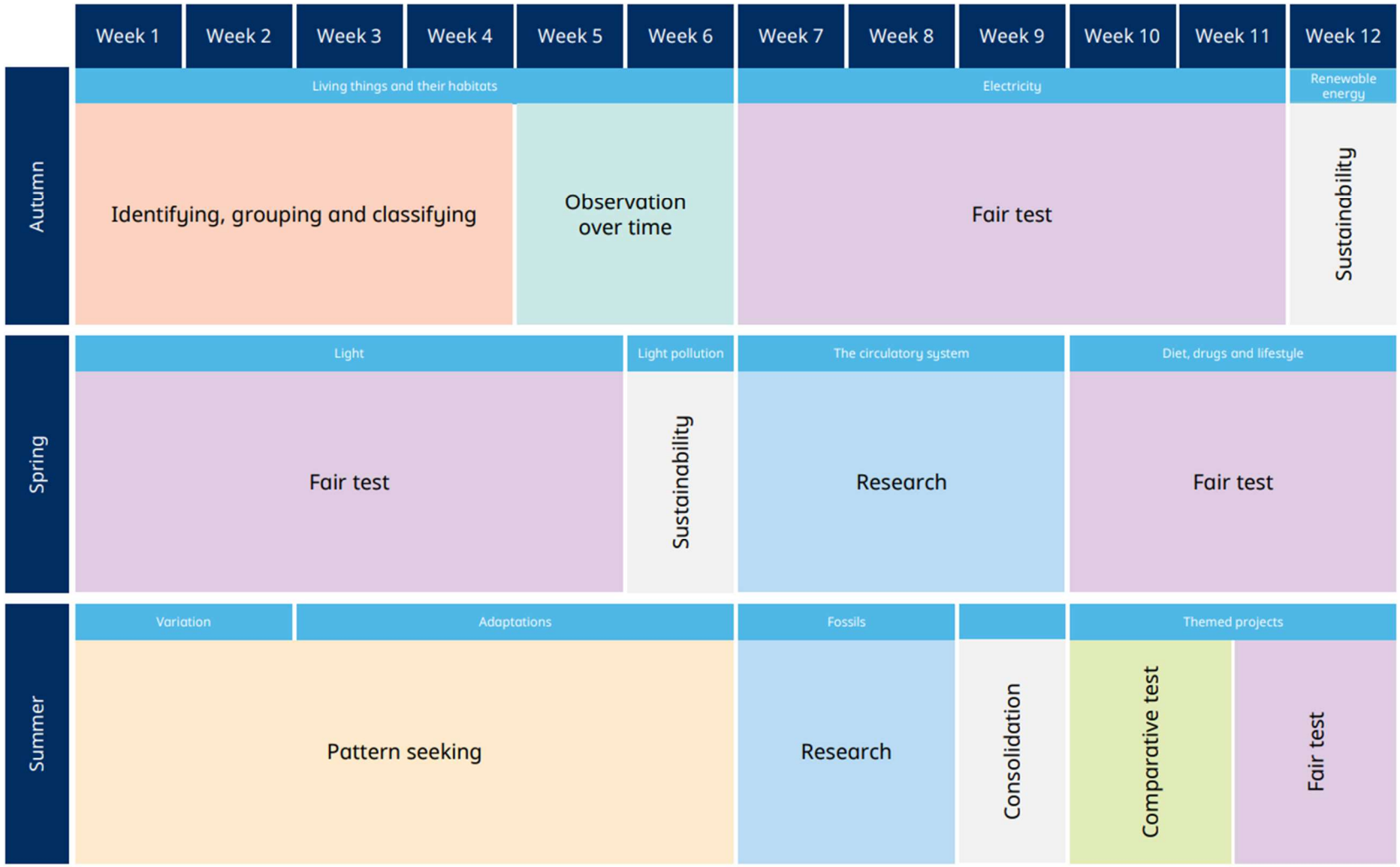


Enquiry Types Mapping

Year 5 | Enquiry types mapping

Enquiry Types Mapping

Year 6 | Enquiry types mapping



Science Knowledge Progression by Theme

Animals, including humans

White Rose SCIENCE

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • Identify and name a variety of common animals that are carnivores, herbivores and omnivores • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	• Notice that animals, including humans, have offspring which grow into adults • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	• Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • Identify that humans and some other animals have skeletons and muscles for support, protection and movement	• Describe the simple functions of the basic parts of the digestive system in humans • Identify the different types of teeth in humans and their simple functions • Construct and interpret a variety of food chains, identifying producers, predators and prey	• Describe the changes as humans develop to old age	• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • Describe the ways in which nutrients and water are transported within animals, including humans
Autumn 1 Spring 2	Autumn 1, Autumn 2 Spring 2 Summer 2, Summer 4	Autumn 1, Autumn 2, Autumn 3	Summer 4, Summer 5	Spring 2	Summer 3, Summer 4

Science Knowledge Progression by Theme

Living things and their habitats

White Rose SCIENCE

Year 2	Year 4	Year 5	Year 6
• Explore and compare the differences between things that are living, dead, and things that have never been alive • Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • Identify and name a variety of plants and animals in their habitats, including microhabitats • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food	• Recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • Recognise that environments can change and that this can sometimes pose dangers to living things	• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • Describe the life process of reproduction in some plants and animals	• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • Give reasons for classifying plants and animals based on specific characteristics
Spring 2 Summer 2, Summer 4	Autumn 1, Autumn 2 Spring 2 Summer 1, Summer 2	Spring 3 Summer 1, Summer 4	Autumn 1

Science Knowledge Progression by Theme

Plants

Year 1	Year 2	Year 3
• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • Identify and describe the basic structure of a variety of common flowering plants, including trees	• Observe and describe how seeds and bulbs grow into mature plants • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant • Investigate the way in which water is transported within plants • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal
Spring 1, Spring 5 Summer 1, Summer 2	Spring 1, Spring 3 Summer 1, Summer 3	Summer 1, Summer 4

Science Knowledge Progression by Theme

Materials

White Rose SCIENCE

Year 1	Year 2	Year 5
• Distinguish between an object and the material from which it is made • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • Describe the simple physical properties of a variety of everyday materials • Compare and group together a variety of everyday materials on the basis of their simple physical properties	• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	• Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • Demonstrate that dissolving, mixing and changes of state are reversible changes • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda
Autumn 3	Autumn 3	Spring 1 Summer 2

Science Knowledge Progression by Theme

Electricity

Year 4	Year 6
• Identify common appliances that run on electricity • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • Recognise some common conductors and insulators, and associate metals with being good conductors	• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram
Spring 3	Autumn 2

Science Knowledge Progression by Theme

Rocks

White Rose SCIENCE

Year 3
• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Recognise that soils are made from rocks and organic matter
Autumn 5 Spring 1, Spring 2

States of matter

Year 4
• Compare and group materials together, according to whether they are solids, liquids or gases • Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature
Autumn 3

Science Knowledge Progression by Theme

Earth and space

Year 5
• Describe the movement of the Earth and other planets relative to the sun in the solar system • Describe the movement of the moon relative to the Earth • Describe the sun, Earth and moon as approximately spherical bodies • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
Autumn 2

Seasonal change

Year 1
• Observe changes across the 4 seasons • Observe and describe weather associated with the seasons and how day length varies
Autumn 2, Autumn 4 Spring 4 Summer 4

Science Knowledge Progression by Theme

Sound

Year 4
• Identify how sounds are made, associating some of them with something vibrating • Recognise that vibrations from sounds travel through a medium to the ear • Find patterns between the pitch of a sound and features of the object that produced it • Find patterns between the volume of a sound and the strength of the vibrations that produced it • Recognise that sounds get fainter as the distance from the sound source increases
Spring 1

Light

Year 3	Year 6
• Recognise that they need light in order to see things and that dark is the absence of light • Notice that light is reflected from surfaces • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes • Recognise that shadows are formed when the light from a light source is blocked by an opaque object • Find patterns in the way that the size of shadows change	• Recognise that light travels in straight lines • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
Spring 3	Spring 1

Science Knowledge Progression by Theme

Forces and magnets

Year 3	Year 5
• Compare how things move on different surfaces • Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • Observe how magnets attract or repel each other and attract some materials and not others • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Describe magnets as having 2 poles • Predict whether 2 magnets will attract or repel each other, depending on which poles are facing	• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces • Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
Summer 2, Summer 3	Autumn 1

Evolution and inheritance

Year 6
• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
Summer 1, Summer 2, Summer 3

Vocabulary Progression by Theme

Animals, including humans

White Rose SCIENCE

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
hair, eyes, face, nose, ears, teeth, mouth, head, neck, arm, elbow, hand, leg, knee, foot light, dark, blind, hear, loud, quiet, noisy, sweet, salty, sour, bitter, savoury, skin, rough, smooth, hard, soft, smell, scent, sniff, stench animal, mammal, fur, wild mammal, pet, bird, wings, beak, feathers, webbed feet, flippers, tail, fins, scales, gills, amphibian, frog, toad, newt, reptile, lizard, crocodile, turtle, carnivore, sharp teeth, herbivore, plants, vegetable, fruit, omnivore	shelter, heart, exercise, physical health, mental health, healthy diet, unhealthy diet, meat, sugar, germs, hygiene, doctor, disease, plaque, gums, filling offspring, egg, parent, baby, child, teenager, life cycle, adolescent, frogspawn, tadpole, froglet, caterpillar, pupa, butterfly, insect, adult	skeleton, skull, ribcage, pelvis, femur, spine, antennae, exoskeleton, joint, hinge joint, ball-and-socket joint, muscle, biceps, triceps, contract, relax carbohydrates, proteins, dairy products, fats, fruit and vegetables, balanced diet, balanced meal, nutrition, Eatwell Guide, vegan diet, vegetarian diet, omnivorous diet, pescatarian diet	incisors, canines, premolars, molars, enamel, root, decay, digestive system, mouth, oesophagus, stomach, small intestine, large intestine, rectum, saliva producer, consumer, prey, predator, farming, overfishing, hunting	foetus, elderly adult, milestone, womb, period, reproduce, hormone, puberty, life expectancy, gestation period, gestation	circulatory system, blood vessels, arteries, veins, capillaries, red blood cells, white blood cells, lungs, plasma, oxygen, atria, ventricles, right atrium, left atrium, right ventricle, left ventricle, oxygenated blood, deoxygenated blood calories, saturated fats, unsaturated fats, trans fats, drug, painkiller, depressant, stimulant, cigarette, tar, nicotine, vape, carbon monoxide, addiction, heart rate

Vocabulary Progression by Theme

Living things and their habitats

Year 2	Year 4	Year 5	Year 6
Arctic plants, hibernate, habitat, cactus, desert, rainfall, ocean, seagrass, woodland, fern, moss, microhabitat, spider, snail, diet, food chain, living, dead, never alive	vertebrate, invertebrate, soft-bodied invertebrate, flowering plant, non-flowering plant, seasonal changes, natural resources, rewilding, nature reserve	monotreme, mammary gland, metamorphosis, larva, chrysalis, hatchling, nestling, fledgling, fertilisation, embryo, sperm cells, egg cells, sexual reproduction, anther, stigma, style, filament, ovary, ovule, clone, runner, tuber, asexual reproduction, cutting, parent plant	organism, excretion, reproduction, mollusc, arachnid, classification, coniferous tree, microorganism, bacteria, virus, fungi, characteristics

Plants

Year 1	Year 2	Year 3
plant, flower, leaf, petals, stem, roots, branch, trunk, roots, wildflower, daisy, garden plant, sunflower, nettle, buttercup, dandelion, deciduous tree, horse chestnut, oak, sycamore, evergreen tree, pine, holly, needles, seed, soil, growth	sunlight, compost, herb, blossom, bulb, shoot	water transportation, seedling, seed coating, germination, stamen, pistil, pollen, reproductive organs, pollination, pollinators, wind dispersal, animal dispersal, water dispersal, explosion dispersal, seed dispersal

Vocabulary Progression by Theme

Materials

Year 1	Year 2	Year 5
material, shiny, dull, rock, heavy, light, object, wood, metal, plastic, glass, wool, solid, liquid, melt, freeze, ice, float, sink, absorb, transparent, opaque	natural material, human-made material, recycle, flexible, rigid, stone, pebble, brick, brittle, flexible, translucent, tough, lightweight, strong, breakable, waterproof	electrical conductor, electrical insulator, thermal insulator, properties, lifespan, dissolve, soluble, insoluble, solution, mixture, reversible changes, reverse, chemical reaction, irreversible change, burning, heating, vinegar, bicarbonate of soda

Rocks

Year 3
granite, pumice, sandstone, chalk, marble, gneiss, crystals, grains, layers, texture, hardness, weathering, fossil, shell, fossilisation, sediment, sandy soil, clay soil, peat soil, chalky soil, organic matter, nutrients, deforestation, habitat loss

Vocabulary Progression by Theme

States of matter

Year 4
solid, liquid, gas, states of matter, pouring solid, ooblek, flow, freezing, melting, boiling, condensation, evaporation, melting point, water cycle, precipitation, atmosphere, petri dish

Electricity

Year 4	Year 6
appliances, plug, socket, cell, electrocuted, circuit, switch, battery, buzzer, conductor, insulator	series circuit, voltage, current, complete circuit, incomplete circuit

Vocabulary Progression by Theme

Earth and space

Year 5
Solar System, orbit, Sun, planets, Pluto, celestial body, gravity, heliocentric model, geocentric model, rotate, axis, North Pole, South Pole, Earth, night, day, moon, gravitational force, satellite

Seasonal changes

Year 1
autumn, daylight, night, weather, season, rainfall, weather, rain gauge, winter, rainy, snowy, windy, cloudy, frosty, sunny, spring, summer

Vocabulary Progression by Theme

Sound

Year 4
vibration, sound, volume, pitch, outer ear, ear bones, cochlea, ear drum, ear canal, decibel, insulate, high-pitched, low-pitched, background noise

Light

Year 3	Year 6
light sources, natural light sources, artificial light sources, Sun, sunglasses, protect, reflection, shadow	retina, iris, pupil, lens, ray diagram, solar eclipse, refraction, medium, rainbow, prism, coloured filter, spectrum of light

Vocabulary Progression by Theme

Forces and magnets

Year 3	Year 5
push, pull, force, contact force, friction, magnet, magnetic, poles, magnetic force, non-metal, iron, aluminium, steel, attract, repel	frictional force, motion, air resistance, parachute, surface area, water resistance, streamlined, non-contact force, gravity, weight, lever, gear, pulley, machine

Evolution and inheritance

Year 6
variation, species, inheritance, desirable characteristics, polar habitat, desert habitat, adaptations, evolution, common ancestor, natural selection, finch, Galapagos Islands, decompose, Charles Darwin, palaeontologist, Mary Anning