Science Overview

Golcar Junior, Infant and Nursery School

Intent Statement

Why is it important to learn Science?

- It is important that our children develop their understanding of what Science is, how Science works and are given the opportunity to discover why Science is important in real life.
- It is essential that all pupils have the confidence and desire to explore and investigate through quality first hand scientific experience and enquiry, empowering them to develop a deeper knowledge and understanding of the world which we live in.

What does Science look like at Golcar JIN?

- For nursery and reception, Science is delivered through a blend of **continuous provision** and **targeted thematic blocks**, directly mapped to the 'Understanding the World' Early Learning Goals.

- For year 1 through to year 6, Science is taught through White Rose Science. The WRS scheme of learning covers all areas of the National Curriculum. Each physics, chemistry or biology unit is broken down in small steps which isolate what the children should think about. Working scientifically skills and scientific enquiry is carefully built into each unit of work. The WRS scheme progressively builds knowledge and skills over the year and provides a narrow focus to learning. The WRS scheme provides valuable teacher guidance consisting of: prior learning links, things to look out for, key questions, national curriculum links, key vocabulary, practical ideas and factual knowledge). There are supporting PowerPoints and worksheets with answers for each step. Valuable practical ideas are provided for each step to enhance and extend the learning outcomes which we endeavour provide.

How our Science curriculum meets our communities needs

As a school we have chosen to follow the White Rose Science scheme of work, a scheme authored by experts in their field. The scheme ensure that we are meeting the statutory curriculum requirements.

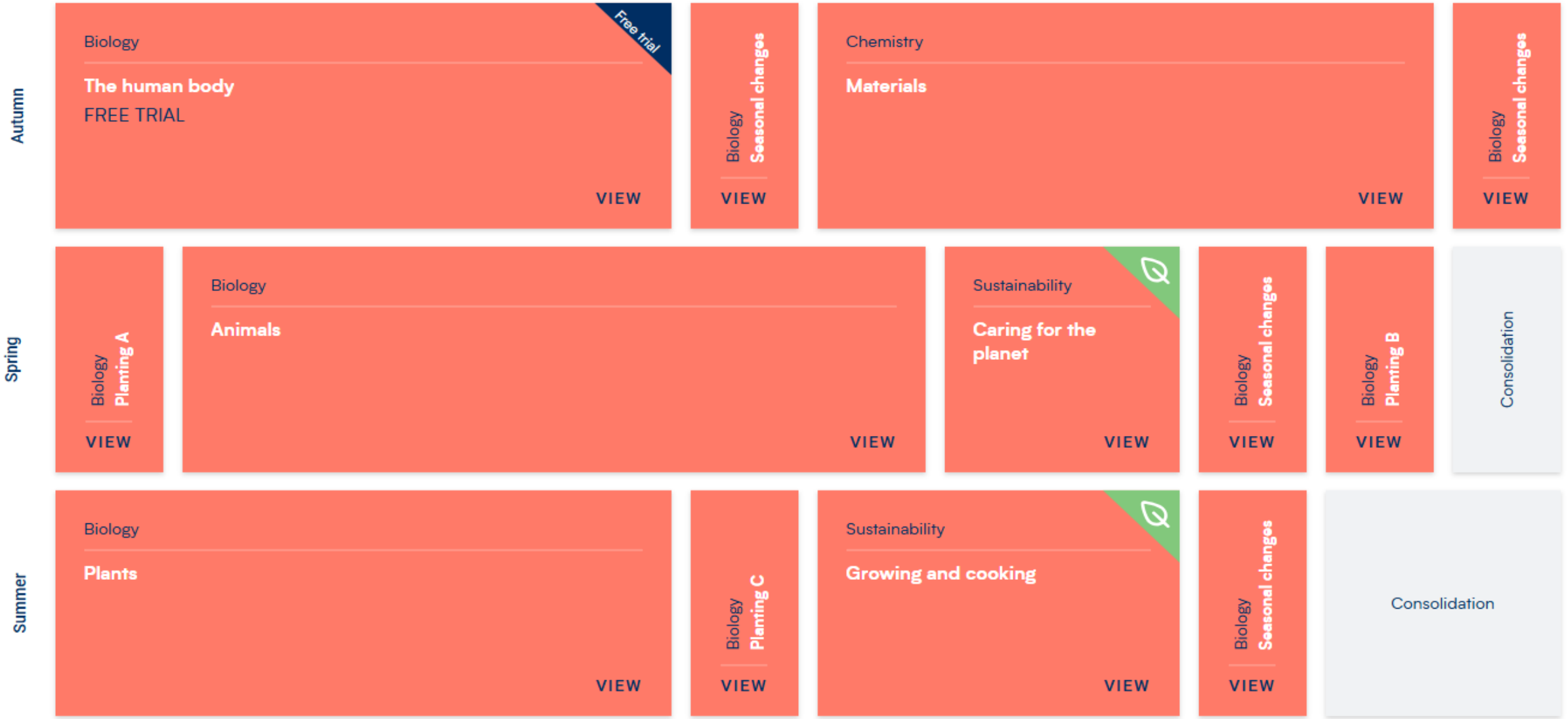
It also helps us to ensure learning is accessible for all:

- Hands on experiences for the children
- Variety of opportunities provided to record learning
- Adapted planning and a variety resources that are necessary – child by child basis
- Emphasis on growth mindset to support resilience, problem solving and reflection
- Science display to model specific scientific language and concepts
- Use of support staff to support individuals or groups
- Working scientifically training and resources provided for staff
- Science team available for guidance with teaching, learning and assessment

Science Curriculum Map EYFS

	Understanding the World
Autumn	Seasonal changes
Spring	Seasonal changes Plants and animals How materials change when heated
Summer	Seasonal changes Caring for the planet

Science Curriculum Map Year 1



Science Curriculum Map Year 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Biology **Animals' needs for survival** FREE TRIAL VIEW Free trial				Biology **Humans** VIEW		Chemistry **Materials** VIEW					Sustainability **Plastic** VIEW
Spring	Biology **Plants (light and dark)** VIEW				Biology **Living things and their habitats** VIEW						Biology **Plants (Light and dark)** VIEW	Consolidation
Summer	Biology **Plants (bulbs and seeds)** VIEW				Biology **Growing up** VIEW		Biology **Bulbs and seeds** VIEW	Biology **Growing up** VIEW	Sustainability **Wildlife** VIEW			Consolidation

Science Curriculum Map Year 3

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Biology **Skeletons** FREE TRIAL VIEW (Free trial)			Biology **Movement** VIEW	Biology **Nutrition and diet** VIEW			Sustainability **Food waste** VIEW	Chemistry **Rocks** VIEW			Consolidation
Spring	Chemistry **Fossils** VIEW		Chemistry **Soils** VIEW		Physics **Light** VIEW							Consolidation
Summer	Biology **Plants A** VIEW							Physics **Forces** VIEW	Physics **Magnets** VIEW		Biology **Plants B** VIEW	Sustainability **Biodiversity** VIEW

Science Curriculum Map Year 4

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Biology **Group and classify living things** FREE TRIAL VIEW (Free trial)			Biology **Data collection A** VIEW	Chemistry **States of matter** VIEW							Consolidation
Spring	Physics **Sound** VIEW				Biology **Data collection B** VIEW	Physics **Electricity** VIEW					Sustainability **Energy** VIEW	Consolidation
Summer	Biology **Data collection C** VIEW		Biology **Habitats** VIEW		Sustainability **Deforestation** VIEW	Biology **The digestive system** VIEW					Biology **Food chains** VIEW	

Science Curriculum Map Year 5

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Physics **Forces** FREE TRIAL VIEW (Free trial)					Physics **Space** VIEW					Sustainability **Global warming** VIEW	Consolidation
Spring	Chemistry **Properties of materials** VIEW					Biology **Animals including humans** VIEW				Biology **Life cycles** VIEW		
Summer	Biology **Reproduction A** VIEW					Chemistry **Reversible and irreversible changes** VIEW		Sustainability **Plastic pollution** VIEW		Biology **Reproduction B** VIEW		Consolidation

Science Curriculum Map Year 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Biology **Living things and their habitats** FREE TRIAL VIEW Free trial						Physics **Electricity** VIEW					Sustainability **Renewable ener** VIEW
Spring	Physics **Light** VIEW					Sustainability **Light pollution** VIEW	Biology **The circulatory system** VIEW			Biology **Diet, drugs and lifestyle** VIEW		
Summer	Biology **Variation** VIEW		Biology **Adaptations** VIEW				Biology **Fossils** VIEW		Consolidation	**Themed projects** (Year 7 ready) VIEW		

Golcar Goals EYFS

Autumn Term	I can observe seasonal changes	
Spring Term	I can observe seasonal changes I can learn about seasonal changes in different countries. I am learning about melting ice. I can explore animals around the world I can tell the difference between plant and animal.	Growth & Change: chick life cycle Environment: care growing caterpillars I can understand the key features of the life cycle of a plant and animal Growth & Change: frog life cycle I can tell you what a plant needs to grow.

Summer Term	I can observe seasonal changes I can learn about our world and how we can look after it. I can observe weather associated with a season. I know a hot place and a cold place in the world	I can show care and concern for living things in the environment I can talk about some of the things I have observed such as plants, animals, natural and found objects

Golcar Goals Year 1

Working Scientifically

Ask simple questions and recognise that they can be answered in different ways

Observe closely, using simple equipment

Perform simple tests

Identify and classify

Use observations and ideas to suggest answers to questions

Gather and record data to help in answering questions

Biology (to understand plants)

Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen.

Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.

Biology (to understand animals and humans)

Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates.

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 (birds, fish, amphibians, reptiles, mammals and invertebrates, 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.

Chemistry (to investigate materials)

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.

Physics (to understand the Earth's movement in space)

Observe changes across the four seasons.

Observe and describe weather associated with the seasons and how day length varies.

Golcar Goals Year 2

Working Scientifically

Ask simple questions and recognise that they can be answered in different ways

Observe closely, using simple equipment

Perform simple tests

Identify and classify

Use observations and ideas to suggest answers to questions

Gather and record data to help in answering questions

Biology (to investigate living things and their habitats)

Explore and compare the differences between things that are living, that are dead and 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.

Biology (to understand plants)

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.

Biology (to understand animals and humans)

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.

Chemistry (to investigate materials)

Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock and paper/cardboard for particular uses.

Golcar Goals Year 3

Working Scientifically
Ask relevant questions, using different types of scientific enquiries to answer them.

Make systematic and careful observations, set up simple, practical enquiries and comparative and fair tests.

Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers.

Gather, record, classify and present data in a variety of ways to help in answering questions

Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.

Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.

Identify differences, similarities or changes related to simple, scientific ideas and processes

Use straightforward, scientific evidence to answer questions or to support their findings

Biology (To understand plants)
Identify and describe the functions of different parts of flowering plants: roots, stem, 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 role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Biology (To understand animals and humans)
Identify that animals, including humans, need the right types and amounts of nutrition that they cannot make their own food and they get nutrition from what they eat.

Identify that humans and some animals have skeletons and muscles for support, protection and movement.

Physics (To understand movement, forces and magnets)
Compare how things move on different surfaces.

Notice that some forces need contact between two 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 two poles.

Predict whether two magnets will attract or repel each other, depending on which poles are facing.

Physics (To understand light and seeing)

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.

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.

Chemistry (To investigate materials)
Compare and group together different kinds of rocks on the basis of their 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.

Golcar Goals Year 4

Working Scientifically
Ask relevant questions, using different types of scientific enquiries to answer them.

Make systematic and careful observations, set up simple, practical enquiries and comparative and fair tests.

Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers.

Gather, record, classify and present data in a variety of ways to help in answering questions

Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.

Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.

Identify differences, similarities or changes related to simple, scientific ideas and processes

Use straightforward, scientific evidence to answer questions or to support their findings

Biology (To understand animals and humans)
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.

Biology (To investigate living things)
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 specific habitats.

Physics (To investigate sounds and hearing)
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.

Physics (To understand electrical circuits)
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.

Chemistry (To investigate materials)
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 the temperature at which this happens in degrees Celsius (°C), building on their teaching mathematics.

Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Golcar Goals Year 5

Working Scientifically
Plan enquiries , including recognising and controlling variables where necessary.

Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.

Take measurements, using a range of scientific equipment, with increasing accuracy and precision.

Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs and models.

Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.

Present findings in written form, displays and other presentations.

User test results to make predictions to set up further comparative and fair tests.

Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.

Biology (To understand animals and humans)

Describe the changes as humans develop to old age.

Biology (To understand living things and their habitats)

Describe the differences in the life cycle of a mammal, an amphibian, an insect and a bird.

Describe the life process of reproduction in some plants and animals.

Chemistry (To investigate materials)
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.

Physics (To understand the Earth's movement in space)
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.

Physics (To understand movement, forces and magnets)
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.

Golcar Goals Year 6

Working Scientifically
Plan enquiries , including recognising and controlling variables where necessary.

Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.

Take measurements, using a range of scientific equipment, with increasing accuracy and precision.

Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs and models.

Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.

Present findings in written form, displays and other presentations.

User test results to make predictions to set up further comparative and fair tests.

Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.

Biology (To understand animals including humans)
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.

Biology (To understand living things and their habitats)
Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.

Give reasons for classifying plants and animals based on specific characteristics.

Biology (To understand evolution and inheritance)
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.

Physics (To understand light and seeing)
Recognise that light appears to travel 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.

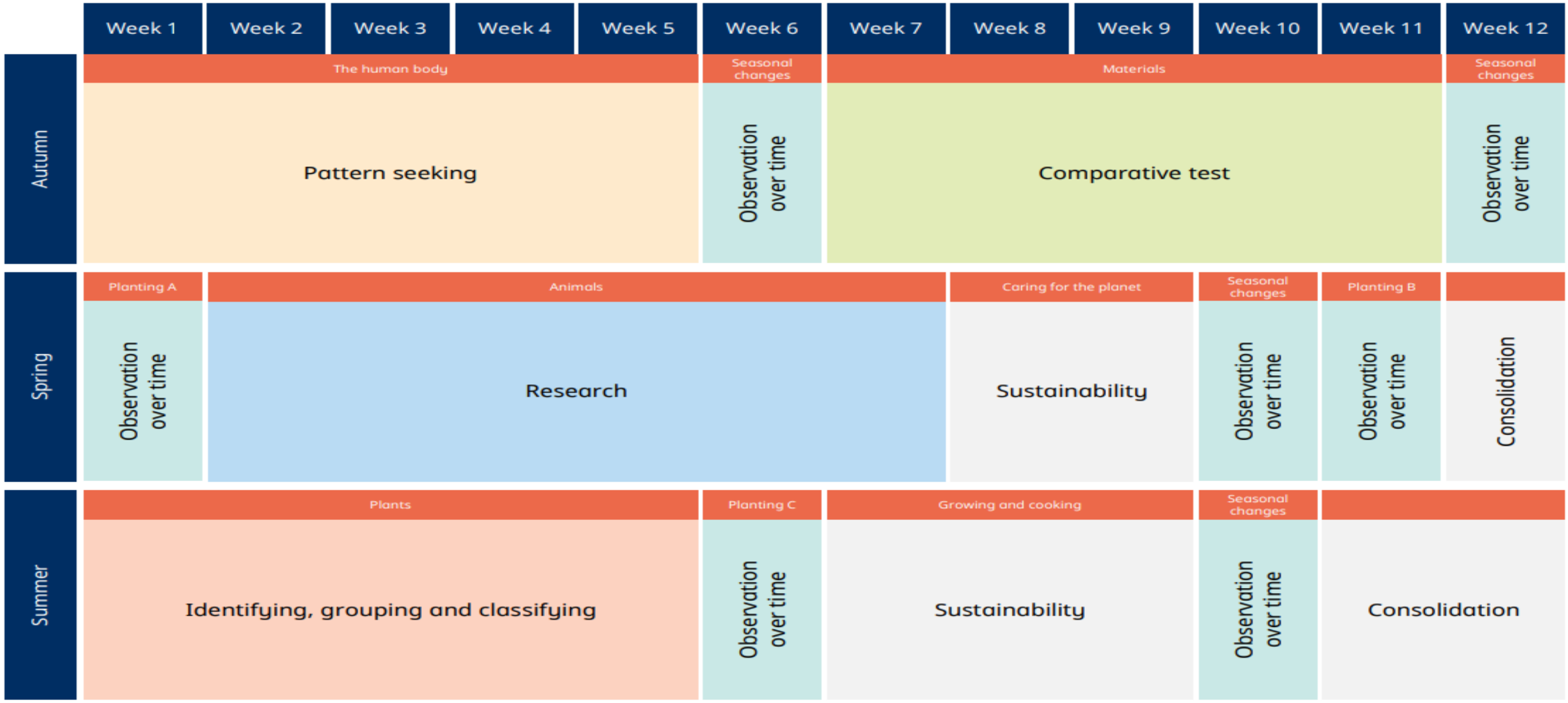
Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Physics (To understand electrical circuits)
Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.

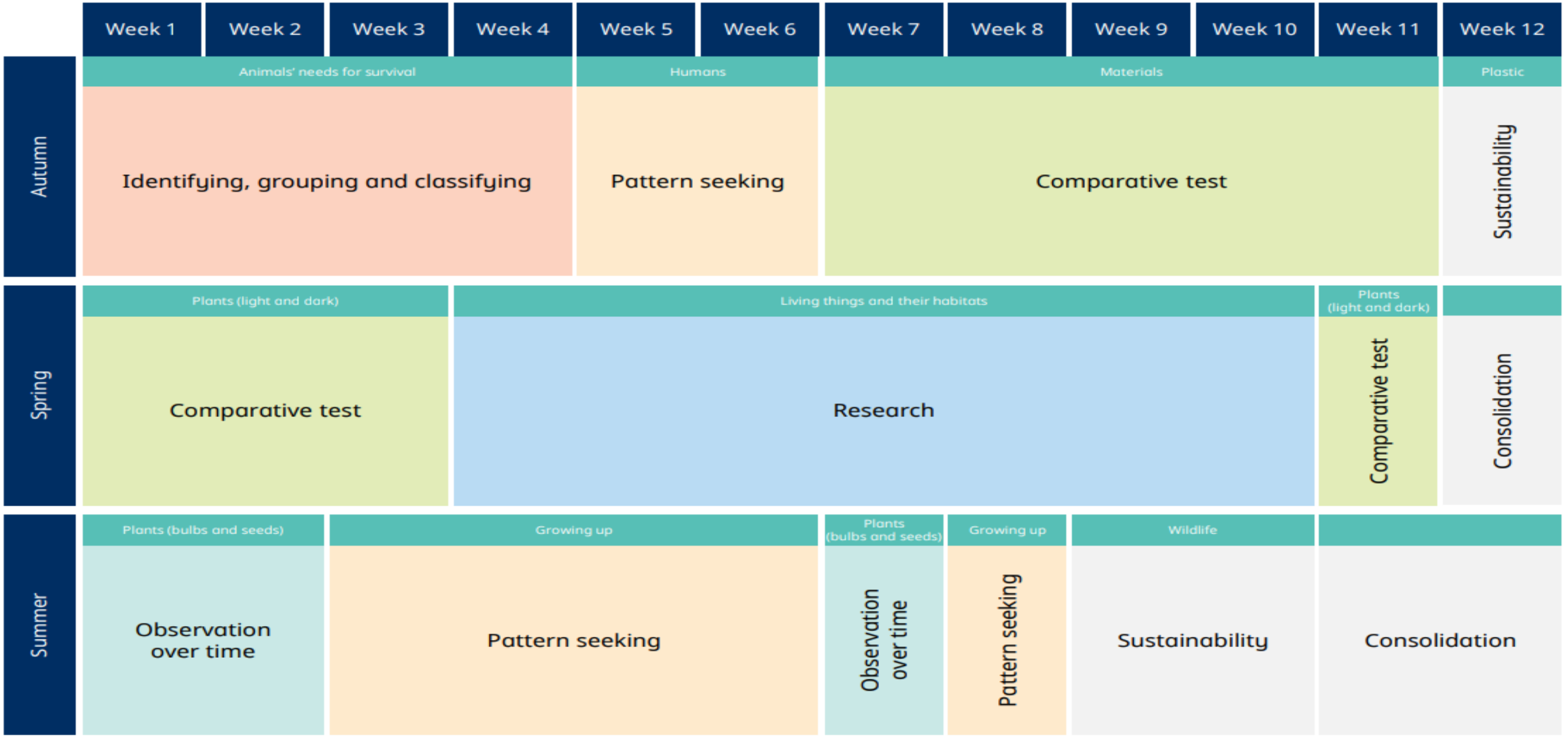
Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.

Use recognised symbols when representing a simple circuit in a diagram.

Science enquiry mapping Year 1



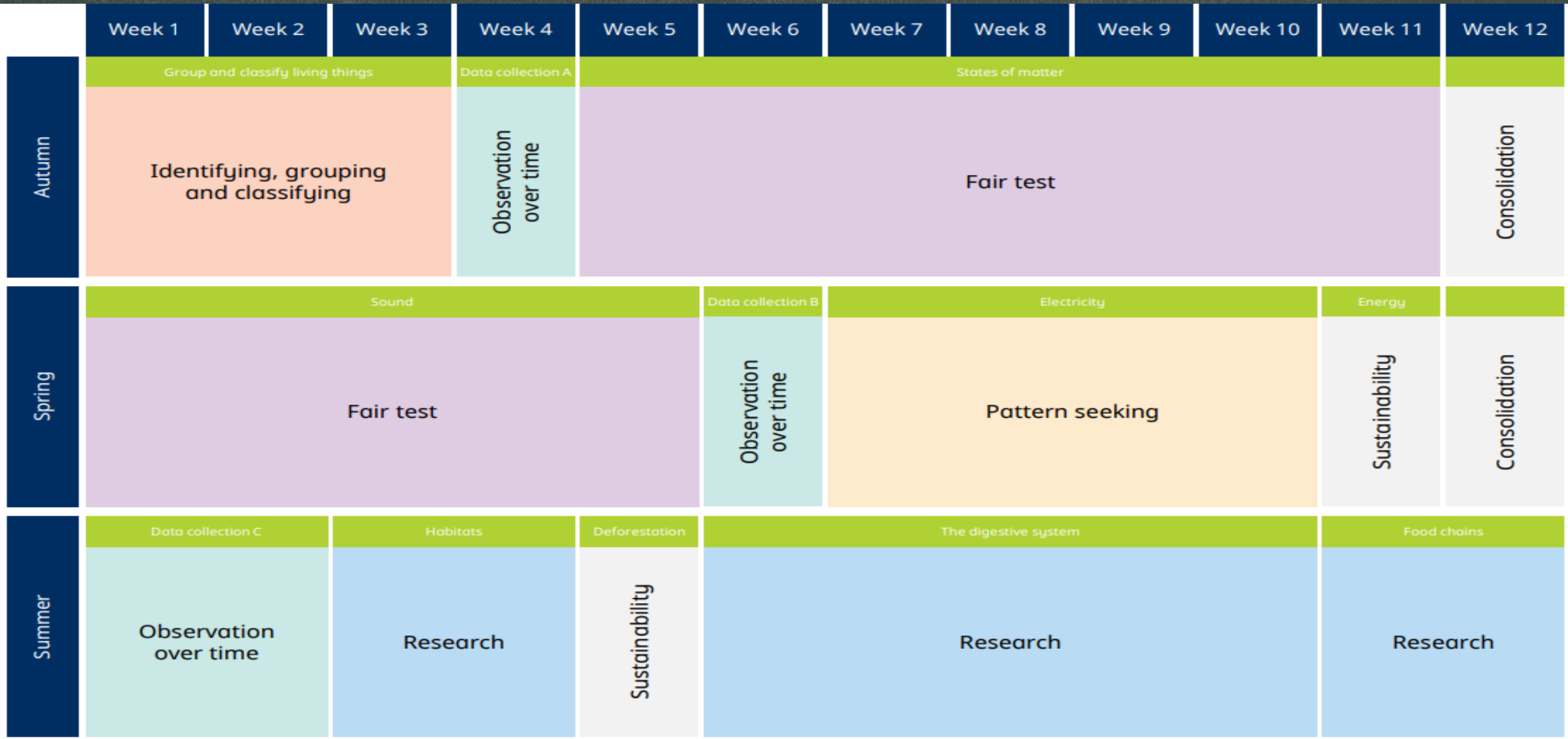
Science enquiry mapping Year 2



Science enquiry mapping Year 3

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Skeletons			Movement	Nutrition and diet			Food waste	Rocks			
	Identifying, grouping and classifying				Research			Sustainability	Identifying, grouping and classifying			Consolidation
Spring	Fossils		Soils		Light							
	Research		Comparative test		Fair test							Consolidation
Summer	Plants A						Forces		Magnets		Plants B	Biodiversity
	Observation over time						Pattern seeking		Pattern seeking		Observation over time	Sustainability

Science enquiry mapping Year 4



Science enquiry mapping Year 5

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Forces					Space					Global warming	
	Fair test					Research					Sustainability	Consolidation
Spring	Properties of materials					Animals including humans					Life cycles	
	Comparative test					Pattern seeking					Research	
Summer	Reproduction A					Reversible and irreversible changes			Plastic pollution	Reproduction B		
	Observation over time					Identifying, grouping and classifying			Sustainability	Observation over time		Consolidation

Science enquiry mapping Year 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Living things and their habitats						Electricity					Renewable energy
	Identifying, grouping and classifying				Observation over time		Fair test					Sustainability
Spring	Light					Light pollution	The circulatory system			Diet, drugs and lifestyle		
	Fair test					Sustainability	Research			Fair test		
Summer	Variation	Adaptations					Fossils			Themed projects		
	Pattern seeking						Research		Consolidation	Comparative test		Fair test

Key Vocabulary

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

Key Vocabulary

Living things and their habitats

White Rose SCIENCE

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

Key Vocabulary

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

Key Vocabulary

Materials

White Rose SCIENCE

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

Key Vocabulary

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

States of matter

White Rose SCIENCE

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

Key Vocabulary

Electricity

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

Earth and space

White Rose SCIENCE

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

Key Vocabulary

Seasonal changes

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

Sound

White Rose SCIENCE

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

Key Vocabulary

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

Forces and magnets

White Rose SCIENCE

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

Key Vocabulary

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

Key Vocabulary – Working Scientifically

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
measure, observe, compare, measurement, growth, trowel, temperature, bend, squash, twist, stretch, absorb		hardness, reaction, bar chart, pictogram, data, increase, decrease, prediction, dissection, scales, filter paper, filter funnel, measuring cylinder, thermometer, conclusion, evaluation, data, volume, decibel meter, stopwatch, beaker, temperature, Petri dish, block chart, bar graph, classifying, classification key		line graph, microscope, anomaly, anomalous result, control, control beaker, sieve, filtering, repeatability, accuracy, correlation, precision, angle, periscope, line graph, scatter graph, independent variable, dependent variable, controlled variables, duration, theory	

Exposure words

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
draw, label, change, same, table, record, tally, pipette, size, predict, similar, different, sort, group, identify, pattern, height, number, amount, hand lens, ruler, counting cubes, centimetres, meters, suitable, unsuitable, match, test, scientific enquiry, comparative test, research, pattern seeking		fair test, identify, group and classify, model, modelling, investigate, changed, measured, stayed the same, millimetres, millilitres, data logger, tape measure, features, scientists, diagram, sorting diagram, block diagram, distance, results		causal relationships, decimals, analyse, interpret, conclude, capacity, mass, approximate, justify, secondary source, evidence, duration, mean, calculate, method	

Key Vocabulary – Sustainability

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Earth, helpful, harmful, recycle, reuse, crops, farmer, cook	single-use plastic, wildlife, nature, local	food waste, landfill, food waste recycling, edible, inedible, biodiversity, rewilding, endangered, extinct	mains electricity, battery-powered, renewable energy, non-renewable energy, energy usage, habitat destruction, palm oil, sustainable	global warming, greenhouse gases, fossil fuels, climate change, glacier, carbon footprint, plastic pollution, pollution, microplastic	solar power, wind power, solar panels, wind turbine, migration, glare, light pollution, light trespass, skyglow, urban, rural, light emission

Impact Measures

We know learning has been successful in this subject area because:

- Our pupils exhibit high levels of enthusiasm for Science. Regular feedback indicates that they enjoy the subject, shown by their willingness to participate in discussions, experiments, and presentations.
- Pupils demonstrate analytical skills, effectively applying scientific methods to solve problems.
- Pupils display a growing understanding of environmental issues and the role Science plays in sustainability. Initiatives such as eco-clubs further embed this understanding.
- Our curriculum prepares pupils for secondary education, with a comprehensive foundation in scientific principles and practices.