COLLIS SCHOOL SCIENCE PROGRESSION

EYFS

	Biology		Chemistry	Physics
	Animals, including **humans**	Plants	Everyday materials	Seasonal Change
	Early Learning Goal: Understanding the World-The World: Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.			
EYFS	Autumn Term- Ourselves, Families Summer Term Living Things-Life Cycles • Know that animals, humans and plants are living things • Know that animals, humans and plants have life-cycles • Know that humans have a skeleton • Know the colour of their eyes • Know the features on a face	Autumn- Planting Bulbs Summer Term- Living Things- Life Cycles Know that plants grow from seeds and bulbs Know that young plants are called seedlings Know that some trees lose their leaves in the Autumn. Know that buds develop into leaves or flowers.	Spring Term Movement and machines, Recycling • Talk about the similarities and differences of materials. • Make observations and talk about changes • Know that some materials can be recycled	Autumn Term-Out and About Spring Term-Movement and machines Know that weather changes with the seasons Know how to mix colours and describe the changes. Talk about the way things move.
	Living, non-living, life-cycle, skeleton, face, eyes, nose, mouth	Plant, seed, bulb, seedling, flower, bud	Recycle, plastic, paper, glass, metal.	Season, weather, sun, rain, rainbow, snow, ice.

Year 1

	Biology		Chemistry	Physics
Animals, including humans	Animals, including **humans**	Plants	Everyday materials	Seasonal Change
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*	*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*	*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*	*Observe changes across the four seasons* *Observe and describe weather associated with the seasons and how day length varies*
Spring 1 and 2 Living Things - Animals • Know how to classify a range of animals by amphibian, reptile, mammal, fish and birds • Know and classify animals by what they eat • Know how to sort by living and non-living things – know that humans, animals and plants are living and that buildings, cars and rocks are non-living To ask simple questions when prompted. To suggest ways of answering a question.	Autumn 1 Living Things Humans • Know the name of parts of the human body that can be seen arm, leg, hand, foot, head, body, knee, elbow, ears, eyes, nose, mouth, tongue finger, thumb, stomach, bottom, ankle, toe. • Know our senses and that we use our: • **Eyes for sight** • Nose for smell • Mouth for taste • Ears for hearing Skin for touch To ask simple questions when prompted. To suggest ways of answering a question.	Summer 1 and 2 Plants • Know and name a variety of common wild and garden plants • Know and name the petals, stem, leaves and root of a plant • Know and name the roots, trunk, branches and leaves of a tree To suggest how findings could be recorded. To use observations to suggest answers to questions. To talk about what they have found out	Autumn 2 Materials • Know the name of the materials an object is made from • Identify and name a variety of every day materials • Wood comes from a tree **It is used to make furniture** • Plastic This can be moulded or shaped • **It is used for many objects** • Glass is a see through material • It is used to make windows • Metal is a strong material • It is used to make cars, planes and trains • Know about the properties of everyday materials • Compare and group materials on the basis of simple physical properties Perform simple tests. And To make relevant observations	1 week 4 times per year • Name the seasons and know about the type of weather in each season • Know how the day length changes in each season Sticky knowledge
Tier 2 fish, birds, Living, non-living Tier 3 amphibian, reptile, mammals, , carnivore, herbivore, omnivore	Tier 2: arm, leg, hand, foot, head, body, knee, elbow, ears, eyes, nose, mouth, tongue hearing, sight, smell, touch, taste Tier 3	Tier 2 petals, stem, leaves, root roots, trunk, branches leaves tree, plant, Tier 3 deciduous, evergreen	Tier 2 material, object, wood, plastic, glass, metal, water, rock, hard, soft, bendy, smooth, rough Tier 3 transparent, properties compare group	Tier 2 Spring, summer, autumn, winter season, weather sunny, cloudy, rainy, snowy, wet, dry, hot, cold Tier 3

Year 2

Biology			Chemistry	Physics
Living Things and their Habitats	Animals, including **humans**	Plants	Everyday materials	Seasonal Change
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*	*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* *Describe the importance for humans of exercise, eating the right amount of different types of food and hygiene*	*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 compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, 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*	*N/A*
Autumn 2 Habitats/Arctic Adaptation Spring 2 Habitats • Classify things by living, dead or never lived • Compare the differences between things that are living, dead and have never been alive Know that living things need food/nutrition and reproduce • Know how a specific habitat provides for the basic needs of things living there (plants and animals) Name 1 animal and 1 plant from each habitat – give 1 reason why each animal is suited to that habitat Desert Habitat **Plant: Cactus** **Animal: Camels** have long eyelashes to protect their eyes from the sand. Woodland Habitat **Plant: Bluebells** **Animal: Wood frogs** have camouflaged skin so they blend into the background very well Ocean Habitat **Plant: Algae** **Stingrays** have flat bodies and swim along the ocean floor. Their eyes are on the top of their body, and their mouth is on the bottom. Rainforest Habitat **Plant: Fern** **Spider monkeys** have long, strong limbs to help it to climb through the rainforest trees. Arctic Habitat Plant: algae Animal: seals have blubber to keep warm. • Match living things to their habitat • Name some different sources of food for animals • Know about and explain a simple food chain To use observations and own ideas to suggest answers to questions To record and communicate findings in variety of ways (pictures and simple sentences)	Autumn 2 and Spring 1 Animals Including Humans • Know that animals, including humans have offspring which grow into adults • Know the different stages of a human baby, toddler, child, teenager, adult, elderly • Know that humans need water, air, shelter and food to survive • Know why exercise is important for humans • Understand the importance for humans of eating the right amounts of different foods • Know why hygiene is important for humans • Name 2 things that humans need to do to keep clean (e.g. brush teeth, wash, clean clothes, brush hair) and 2 things humans need to do to keep healthy (balanced diet and exercise) • Name 2 things humans need to do to keep healthy (balanced diet and exercise) To observe closely To gather and record simple data To use observations and own ideas to suggest answers to questions	Summer 1 and 2 Plants • Know and explain how seeds and bulbs grow into plants • Know what plants need in order to grow and stay healthy (water, light & suitable temperature) • Record growth of seeds and bulbs into plants over time • Look at plants in the local environment To use simple measurements and equipment To gather and record simple data	Autumn 1 Materials • Know how materials can be changed by squashing, bending, twisting and stretching • Know why a material might or might not be used for a specific job Name 3 materials that are used for a particular purpose giving 1 reason linked to their property – glass is used for windows because it is transparent, fabric is used for clothes because it is flexible, metal is used for cutlery because it does not bend To ask simple questions To recognise that questions can be answered in different ways To observe closely To identify and classify	N/A
Tier 2: living, dead, never lived, habitat, food chain, reproduce nutrition, Tier 3: omnivore, carnivore, herbivore (from Y1)	Tier 2: human, offspring, survival, growth, exercise, healthy, hygiene, water, air, food and shelter, diet.	Tier 2: water, light, temperature, environment Tier 3: seed, bulb,	Tier 2: material (Y1), suitable, properties (Y1), uses, squash, bend, twist, stretch, flexible, hard, soft, Tier 3: waterproof durable, transparent	

Year 3				
Biology		Chemistry	Physics	
Animals, Including Humans	Plants	Rocks	Forces – Magnets	Light
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*	*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*	*Compare and group together different kinds of rocks on the basis of 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.*	*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*	*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 a solid object* *Find patterns in the way that the size of shadows change.*
• Know about the importance of a nutritious, balanced diet • Know that animals cannot make their own food • Know about the skeletal and muscular system of a human • Know that humans and some animals have skeletons and muscles for support, protection and movement Knows the five food groups Animals get energy through the food that they eat The skull protects the brain The ribs protect heart and lungs The spine supports the body To ask relevant questions when prompted	• Know the function of different parts of flowering plants and trees • Know how water is transported within plants • Know the plant life cycle, especially the importance of flowers Identify the parts of flowering plants: flower, stem/ trunk, leaves, roots The **stem** holds up the plant and transports water and nutrients The **flower** makes sees to grow new plants **Leaves** make food for the plant using sunlight and carbon dioxide The **stem** holds the plant up. It also transports water and nutrients around the plant The **roots** anchor the plant into the ground. They absorb water and nutrients from the soil. New plants are created by flowers attracting pollinators and forming and dispersing seeds. To set up simple, practical enquiries To set up comparative tests To use simple equipment and use standard units when taking measurements To report on findings from enquiries	• Compare and group rocks based on their appearance and physical properties, giving reasons • Know how soil is made and how fossils are formed • Know about and explain the difference between sedimentary, metamorphic and igneous rock The names of the 3 types of rocks (sedimentary, metamorphic and igneous) Weather can change rocks over time Fossils can be moulds of plant or animal remains preserved in rock	• Know about and describe how objects move on different surfaces • Know how some forces require contact and some do not, giving examples • Know about and explain how magnets attract and repel (each other and other materials) • Predict whether magnets will attract or repel and give a reason • Know that magnets have 2 poles Magnets have a N and S pole Like (same) poles repel and opposite poles attract Explain one everyday use of magnets Rough surfaces create more friction which will slow an object down To make careful observations To record findings in various ways using simple scientific language, drawings and labelled diagrams To use straightforward scientific evidence to answer questions	• Know that dark is the absence of light • Know that light is needed in order to see • To know that light is reflected from surfaces • Know and demonstrate how a shadow is formed and explain how a shadow changes shape • Know about the danger of direct sunlight and describe how to keep protected Dark is the absence of light Shadows are formed when an opaque object blocks the light To know that light can be reflected from some surfaces We should protect our eyes and skin from the sun To use results to draw simple conclusions
Tier 2 skeleton, ribs backbone fruit and vegetables, dairy, fats and oils, bone Tier 3 cranium, spine, organs, muscles, carbohydrates, proteins, vertebrate, invertebrate,	Tier 2 flower stem/ trunk, leaves, roots, petal Tier 3 pollination Life cycle, pollen, seed formation and dispersal	Tier 2 soil hard, soft, moulds, pressured, grains, Tier 3 sedimentary, metamorphic and igneous rock, erosion, permeable, impermeable, fossil, properties, crystals	Tier 2 object movement, push, pull surfaces distance Tier 3 friction, , magnets, attract and repel, poles, magnetic, 'like' (same), contact	Tier 2 light, dark, shadow, Tier 3 absence, opaque, transparent, translucent, reflect(ion), source

Year 4

Biology

Animals, Including 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.

- Identify and name the parts of the human digestive system
- Know the functions of the organs in the human digestive system
- Identify the different types of human teeth
- Know the functions of different human teeth
- Use and construct food chains to identify producers, predators and prey

Identify, and describe the following parts and name one basic function of each

- **Oesophagus** – This is a tube like structure that connects the mouth to the stomach.
- **Stomach** – breaks food down into small pieces.
- Digested food is absorbed in to the **small intestine**
- The leftover waste, parts of the food that your body can't use , goes on to the **large intestine.** You get rid of this waste when you go to the toilet!
- **Mouth** - The mouth is the opening to the digestive system.
- **Tongue** - helps us eat
- **Premolars** – help you chew and crush your food.
- **Canines** – sharpest teeth to tear our food.
- **Incisors** – Help you bite into your food
- **Molars** – powerful teeth for crushing and grinding of food

To record findings using keys, bar charts and tables
To gather, record, classify and present data in a variety of ways
To use results to make predictions for new values, suggest improvements and raise further questions

Tier 2: digestive, incisors, canines, premolars, molars, mouth, tongue, teeth,
Tier 3: carnivore, herbivore, stomach oesophagus, small and large intestine, predator, prey, producer

Living Things and Their Habitats

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.

- Know the characteristics of living things (MRS GREN – Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion, Nutrition)
- Recognise that living things can be grouped in a variety of ways.
- Use classification keys to group, identify and name living things in the local and wider environment
- Know that environments can change and how changes to an environment could endanger living things

Know how to identify a living thing.
Animals can be grouped according to their categories e.g. mammals, insects, birds, amphibians, reptiles. Know that animal categories share characteristics.
Positive impact humans can have on the environment are: Recycling, conservation areas and composting
Negative impact humans can have on the environment are: deforestation, pollution and litter
To make systematic and careful observations
To record findings using keys, bar charts and tables
To gather, record, classify and present data in a variety of ways

Tier 2: insects, birds, Movement Living, non-living, Sensitivity Growth Environment habitat, population, development, litter deforestation

Tier 3: Vertebrates, invertebrates, mammals, amphibians, reptiles, Respiration, Reproduction, Nutrition Excretion,

Chemistry

States of Matter

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.

- Group materials based on their state of matter (solid, liquid, gas)
- Know the temperature at which materials change state
- Know about and explore how some materials can change state
- Know the part played by evaporation and condensation in the water cycle

Know that water (liquid) becomes solid (ice) at 0 and gas (water vapour) at 100.
Know that boiling points and freezing points change for different liquids.
Can briefly describe water cycle: sun evaporates water into vapour; water vapour cools and condenses into clouds; when these get heavy it rains; water goes back into seas, rivers and lakes.
To ask relevant questions
To use different types of scientific enquiries to answer questions
To take accurate measurements using thermometers and data loggers

Tier 2: solid, liquid, gas, Celsius – C, temperature, state, melting, boiling, freezing.

Tier 3: evaporation, condensation, Precipitation

Physics

Electricity

Identify common appliances that run on electricity
Construct a simple series circuit identifying and naming its basic parts, including cell, wire, bulb, switch and buzzer
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

- Identify and name appliances that require electricity to function
- Construct a circuit
- All circuits need power either batteries or mains electricity
- Predict and test whether a lamp will light within a circuit
- Know the function of a switch
- Know the difference between a conductor and an insulator; giving examples of each
- A conductor is an object or type of material that allows the flow of an electrical current in one or more directions
- Metals for example copper, iron and steel are good conductors of electricity
- An insulator is a material whose internal electric charges do not flow freely.
- Rubber and plastic are good insulators of electricity

To report on findings from enquiries including oral and written explanations
To use results to make predictions for new values, suggest improvements and raise further questions

Tier 2: cells, wires, bulbs, switches and buzzers, series, appliance, electric(ity), switch, metal
Tier 3: circuit, conductor, insulator

Sound

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.

- Know how sound is made, associating some of them with vibrating

Sound is created when something vibrates and sends waves of energy (vibration) into our ears. The vibrations travel through the air or another medium (solid, liquid or gas) to the ear

- Know how sound travels from a source to our ears
- Know the correlation between pitch and the size of the object producing a sound

Pitch is how high or low a sound is. So on a stringed instrument: shorter, thinner and tighter strings produce a higher pitch

- Know the correlation between the volume of a sound and the strength of the vibrations that produced it

The louder the sound, the bigger the vibration. The closer you are to the sound the louder the sound will seem

- Know what happens to a sound as it travels away from its source

When you clap your hands, the air around your hands shakes. This is the air molecules vibrating
To set up fair tests
To report on findings from enquiries including oral and written explanations
To identify differences, similarities or changes related to simple scientific ideas and enquiries

Tier 2: vibration, volume, pitch, insulation, faint, auditory, source
Tier 3: cochlea

Year 5				
Biology		Chemistry	Physics	
Animals, Including Humans	Living Things and Their Habitats	Properties and Changes in Materials	Forces	Earth and Space
Describe the changes as humans develop to old age. *Draw a timeline to indicate stages in the growth and development of humans.* *Learn about the changes experienced in puberty.*	*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.*	*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.*	*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.*	*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.*
• Know how humans change as they develop to old age • Know the key changes experienced in puberty Name the stages of human growth and give a brief description of physical changes at each stage Name three key changes experienced in puberty	• Compare the life cycle of mammal, amphibian, insect and bird • Know the process of reproduction in some plants (methods of reproduction of flowering and non-flowering plants) • Know the process of reproduction in animals • Raise questions about their local environment throughout the year • Find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. Label parts of plant (including reproductive organs): stem, leaves, petals, roots, carpel and stamen, ovary The five steps of a plant life cycle: The five steps of a plant lifecycle: germination, a flower grows, pollination, fertilisation, and seed dispersal Mammals carry their young and give birth to live young. - Amphibians lay eggs in water and life cycle involves metamorphosis. Insects lay eggs and life cycle involves metamorphosis. Birds lay eggs with hard shells. To take precise measurements using standard units To record data using labelled diagrams, keys, tables and bar charts Suggest how evidence can support conclusions	• Compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets • Know and explain how a material dissolves to form a solution • Know and show how to recover a substance from a solution • Know and demonstrate how some materials can be separated (e.g. through filtering, sieving and evaporating) • Know and demonstrate that some changes are reversible and some are not • Know how some changes result in the formation of a new material and that this is usually irreversible Know that materials have different properties and can be grouped/ separated based on properties Can describe the properties of one material using the terms: soluble/ insoluble, translucent/ opaque, magnetic, conductive Can define soluble and insoluble A reversible change is melting and dissolving and can be changed back again. An irreversible change is burning, rusting or decaying cannot be undone. With prompting, to plan different types of scientific enquiries to answer questions To record data using labelled diagrams, keys, tables and bar charts Suggest how evidence can support conclusions To use test results to make predictions to set up further comparative and fair tests	• Know what gravity is and its impact on our lives • Identify and know the effect of air and water resistance • Identify and know the effect of friction • Explain how levers, pulleys and gears allow a smaller force to have a greater effect • Explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall. • Explore the effects of friction on movement and find out how it slows or stops moving objects. • Find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation. A force may push or pull something, making it move. Forces may make things start, stop, speed up or slow down. Gravity is a type of force which pulls things towards the centre of the earth. E.g. A ball falling to the ground. Air resistance is a type of friction between the air and another material, it affects how fast or slowly objects move through the air. E.g. An aeroplane flying through the air. Water resistance is another type of friction which slows objects down when moving through water. Eg. Trying to run through water Isaac Newton helped develop the theory of gravity and 3 laws of motion. With prompting, to plan different types of scientific enquiries to answer questions With prompting, to recognise and control variables where necessary To take precise measurements using standard units Present findings from enquiries orally and in writing such as in displays and other presentations To use test results to make predictions to set up further comparative and fair tests	• Know about and explain the movement of the Earth and other planets relative to the Sun • Know about and explain the movement of the Moon relative to the Earth • Know and demonstrate how night and day are created • Describe the Sun, Earth and Moon (using the term spherical) • Learn that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006). • Understand that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones). Describe the movement of the earth, sun and moon (in relation to one another) The earth orbits the sun once a year The earth rotates on its axis every 24 hours 8 planets in solar system and have different properties The tilt of the earth's orbit around the sun causes the seasons To record data using labelled diagrams, keys, tables and bar charts
Tier 2 adolescence, baby, toddler, teenager, adult, Tier 3 puberty, gestation, foetus	Tier 2 Tier 3 Sexual (flowering) and asexual (non-flowering) reproduction in plants, germination, pollination, fertilisation, seed formation, seed dispersal stamen = anther and filament (male)carpel = stigma, style, ovary and receptacle (female) sepal, Metamorphosis, Naturalist, animal behaviourist Sexual reproduction in animals	Tier 2 reversible and irreversible, material, liquid Tier 3 solution, soluble, insoluble, filtering, sieving and evaporating, dissolve, conductive, thermal, separate, magnetic, substance, evaporation	Tier 2 movement, motion, forces, opposites, equal, Tier 3 gravity, air resistance, water resistance and friction, Galileo Galilei and Isaac Newton, theory, scientist, levers, pulleys, gears, mechanisms	Tier 2 sun, moon,earth, rotates, spins, Tier 3 Planet names, globe, axis, orbits, movement, space, solar system, spherical, gravity, rings

Year 6				
Biology			Physics	
Animals, Including Humans	Living Things and Their Habitats	Evolution and Inheritance – What is Evolution?	Electricity	Light
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*	*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*	*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*	*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*	*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*
• Identify and name the main parts of the human circulatory system • Know the function of the heart, blood vessels and blood • Know the impact of diet, exercise, drugs and lifestyle on health • Know the ways in which nutrients and water are transported in animals, including humans Name and describe the main function of the parts of the human circulatory system: heart, blood vessels (arteries, veins, capillaries) Describe how diet, exercise, drugs, lifestyle and health are related. To take measurements with increasing accuracy and precision To take repeat readings when appropriate To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar charts, scatter graphs and line graphs	• Classify living things into broad groups according to observable characteristics and based on similarities and differences • Know how living things have been classified • Know that broad groupings, such as micro-organisms, plants and animals can be subdivided. • Give reasons for classifying plants and animals in a specific way • Find out about significance of the work of scientists such as Carl Linnaeus, a pioneer of classification. Name some of the characteristics used to classify living things. Explain how living things have been classified, including naming and describing some sub-groups. To plan different types of scientific enquiries to answer questions To take repeat readings when appropriate Report and present findings from enquiries including conclusions, causal relationships and explanations of results	• Know how the Earth and living things have changed over time • Know about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents) • Know how animals and plants are adapted to suit their environment • • Know about evolution and can explain what it is • Link adaptation over time to evolution. To know that living things have changed over time and describe how fossils provide information about living things that inhabited the Earth millions of years ago. To know that Charles Darwin, Alfred Wallace and Mary Anning were influential scientists. Describe how fossils can tell us about the past To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar charts, scatter graphs and line graphs To identify scientific evidence that has been used to support or refute ideas or arguments	• Compare and give reasons for why components work and do not work in a circuit • Draw circuit diagrams using correct symbols • Know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer Explain how the brightness of a lamp or volume of a buzzer is affected by cells (number and voltage). • Children should be able to look at a circuit and identify why a circuit works or doesn't work. • Use recognised symbols in simple circuit diagram • More cells or a higher voltage of cell means a lamp is brighter or the buzzer is louder. To plan different types of scientific enquiries to answer questions To recognise and control variables where necessary To identify scientific evidence that has been used to support or refute ideas or arguments	To know that light appears to travel in straight lines To know that an object can be seen because it gives out or reflects light into the eye in straight lines. To 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 To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them To design and make a periscope, using the idea that light appears to travel in straight lines to explain how it works To plan different types of scientific enquiries to answer questions To recognise and control variables where necessary To take measurements with increasing accuracy and precision
digestive system, circulatory system, drugs, blood vessels, blood cells, arteries, veins, capillaries, heart, oxygen, carbon dioxide, chamber, atrium, valve, ventricle	classification, observable/ observation, micro-organisms, subdivided, Carl Linnaeus,	Tier2: , offspring, adapt(ation), evolution, inheritance,natural selection, Tier 3: : genes,fossil,palaeontologist, Charles Darwin, Alfred Wallace, Mary Anning	Tier 2: : conductor, insulator, battery,current, resistance,cells, bulb, wire,buzzer,motor,switch Tier 3: series circuits,volts/voltage,	periscope, light source, filter, ray