Science -Milestone 1-3

	Milestone 1			Milestone 2			Milestone 3		
Subject	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
Year A Topics	Aut 1: The Gruffalo	**Sp 1: Where in the world are we?**	Su 1: Up, Up and Away	**Aut 1: Bear Grylls**	**Sp 1: Tudors**	**Su 1: Around the World**	Aut 1: Island Survival	**Sp 1 Greeks**	**Su 1: Location, Location**
	Aut 2: Light and Dark	Sp 2: Toys	Su 2: Chocs Away	Aut 2: Tudors	Sp 2: Around the World	Su 2: Egyptians	**Aut 2: Anglo Saxons**	Sp 2: Spy School	Su 2: Aztecs
Year B Topics	Aut 1: At the Circus	**Sp 1: Dinosaurs**	**Su:1 At the Seaside**	**Aut 1: Night at Museum**	**Sp 1: Extreme World**	**Su:1 Romans**	Aut 1: Vikings	**Sp 1: Titanic**	Su:1 WW2
	Aut 2: Polar Adventures	Sp 2: Fun Food Factory	Su:2 Great Fire of London	Aut 2: Extreme World	Sp 2: Romans	Su:2 Chellaston and Me	**Aut 2: Peak Adventures**	Sp 2: Titanic	**Su:2 Rivers**

Threshold Concept (SKILL) Working scientifically
This concept involves learning the methodologies of the discipline of science.

• Ask simple questions. • 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.	• Ask relevant questions. • 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.	• 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. • Use 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.

Year A

Year A Living things and their habitat: To know how to explore and compare the differences between things that are living, dead, and things that have never been alive; • To know how to 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; • To know how to identify and name a variety of plants and animals in their habitats, including microhabitats; • To know how to 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. **Seasons:** • To know how to observe changes across the 4 seasons; • To know how to observe and describe weather associated with the seasons and how day length varies. (Observations and investigations to be made throughout the year.)	**Year A Plants:** • To know how to observe and describe how seeds and bulbs grow into mature plants; • To know how to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. **Everyday materials:** • To know how to distinguish between an object and the material from which it is made; • To know how to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock; • To know how to describe the simple physical properties of a variety of everyday materials; • To know how to compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Year A Animals including humans:** • To know how to notice that animals, including humans, have offspring which grow into adults; • To know how to find out about and describe the basic needs of animals, including humans, for survival (water, food and air); • To know how to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Year A Living things and their habitat:** • To know how to recognise that living things can be grouped in a variety of ways; • To know how to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment; • To know how to recognise that environments can change and that this can sometimes pose dangers to living things. **Animals including humans- skeletons:** • To know how to 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; • To know how to identify that humans and some other animals have skeletons and muscles for support, protection and movement.	**Year A States of matter:** • To know how to compare and group materials together, according to whether they are solids, liquids or gases; • To know how to 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); • To know how to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	**Year A Animals including humans- digestive system:** • To know how to 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; • To know how to describe the simple functions of the basic parts of the digestive system in humans. • To know how to Identify the different types of teeth in humans and their simple functions. **Sound:** • To know how to identify how sounds are made, associating some of them with something vibrating; • To know how to recognise that vibrations from sounds travel through a medium to the ear; • To know how to find patterns between the pitch of a sound and features of	**Year A Earth and Space:** • To know how to describe the movement of the Earth and other planets relative to the Sun in the solar system; • To know how to describe the movement of the Moon relative to the Earth; • To know how to describe the Sun, Earth and Moon as approximately spherical bodies; • To know how to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	**Year A Light:** • To know how to recognise that light appears to travel in straight lines. • To know how to 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; • To know how 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 know how to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	**Year A Properties and changes of materials:** • To know how to 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; • To know how to know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution; • To know how to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating; • To know how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic; • To know how to demonstrate that dissolving, mixing and changes of state are reversible changes; • To know how to 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. **Animals including humas:** • To know how to identify and name the main parts of the human circulatory system, and describe

						the object that produced it; • To know how to find patterns between the volume of a sound and the strength of the vibrations that produced it; • To know how to recognise that sounds get fainter as the distance from the sound source increases.			the functions of the heart, blood vessels and blood; • To know how to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function; • To know how to describe the ways in which nutrients and water are transported within animals, including humans.
Significant Individuals	Rachel Carson- Ocean Habitats George James Symons- rain gauge	Jane Colden-Botanist Ole Kirk Christiansen-Lego Inventor	Maria Sibylla Merian- animal Life cycles	Carl Linnaeus- Classification William Rontgen- x-ray	**Joseph Priestley-oxygen**	**William Beaumont - digestive system** **Aristotle- soundwaves**	**Tim Peake/ Neil Armstrong/ Margaret Hamilton**	**Isaac Newton - colour theory**	**Archimedes- Water displacement** **Marie Maynard Daly - Circulatory system** **Dr Christian Barnard- first human heart surgery**
Enrichment/ Sustainability	**Forest Schools Autumn Walk**	**Homefield's Heart- Sustainability community soft plastic project.**	**Healthy Living Week** **MUSEUM**	**Skeletons Day**	**Cadbury's World**	**Ask a Dentist**	**National Space Centre** **Space Day**	**STEM Week**	**Disect Heart (Secondary school Led)**
Assessment- Proof of Progress	Quiz	Mind Map	Quadrant	Mind Map	Mind Map	Mind Map	Mind Map	Mind Map	Mind Map
Teacher Assessment of Primary Science (TAPS)	Living and non-living reasoning (Working Scientifically- identify and classify) Rain Gauge Investigation (Working Scientifically- Gather and record data)	Leaf Looks (Working Scientifically-Observe closely, using simple equipment and asks questions) Reflectiveness (Working Scientifically- Perform simple tests and Identify and classify.)	Handspan (Working Scientifically- Using their observations and ideas to suggest answers to questions)	Identifying invertebrates (Working Scientifically- Gather, record, *classify* and present data in a variety of ways to help in answering questions.) Measurement Investigation (Working Scientifically- Make accurate measurements and evidence to support findings)	Materials Drying (Working Scientifically- to set up a fair test)	Teeth in Liquids New Report (Working Scientifically- reporting findings) String Telephones (Working Scientifically- Identify differences, similarities or changes related to simple, scientific ideas and processes.)	Craters (Working Scientifically- Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Gather and record data using tables and graphs.)	Light (Working Scientifically Take accurate measurements and records data on a graph)	Nappies (Working Scientifically- Plan enquiries, including recognising and controlling variables where necessary.) Reaction Catches- (Working Scientifically- Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.)
	Year B								
	Year B Use of everyday materials: • To know how to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses; • To know how to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Year B Animals including humans:** • To know how to identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals; • To know how to identify and name a variety of common animals that are carnivores, herbivores and omnivores; • To know how to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets); • To know how to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**Year B Seasons:** • To know how to observe changes across the 4 seasons; • To know how to observe and describe weather associated with the seasons and how day length varies. **Plants:** • To know how to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees; To know how to identify and describe the basic structure of a variety of common flowering plants, including trees.	**Year B Light:** • To know how to recognise that they need light in order to see things and that dark is the absence of light; • To know how to notice that light is reflected from surfaces; • To know how to recognise that light from the sun can be dangerous and that there are ways to protect their eyes; • To know how to recognise that shadows are formed when the light from a light source is blocked by an opaque object; • To know how to find patterns in the way that the size of shadows change. **Electricty:**	**Year B Rocks and Soils:** • To know how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties; • To know how to describe in simple terms how fossils are formed when things that have lived are trapped within rock; • To know how to recognise that soils are made from rocks and organic matter. **Plants:** • To know how to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers; • To know how to 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;	**Year B Forces:** • To know how to compare how things move on different surfaces; • To know how to notice that some forces need contact between 2 objects, but magnetic forces can act at a distance; • To know how to observe how magnets attract or repel each other and attract some materials and not others; • To know how to 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; • To know how to describe magnets as having 2 poles;	**Year B Evolution and inheritance:** • To know how to recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago; • To know how to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents; • To know how to identify how animals and plants are adapted to suit their environment in different	**Year B Forces:** • To know how to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object; • To know how to identify the effects of air resistance, water resistance and friction, that act between moving surfaces; • To know how to recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	**Year B Living Things and their habitats:** • To know how to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird; • To know how to describe the life process of reproduction in some plants and animals. • To know how to 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; • To know how to give reasons for classifying plants and animals based on specific characteristics.

		•		• To know how to identify common appliances that run on electricity; • To know how to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers; • To know how to 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; • To know how to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit; • To know how to recognise some common conductors and insulators, and associate metals with being good conductors.	• To know how to investigate the way in which water is transported within plants; • To know how to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	• To know how to predict whether 2 magnets will attract or repel each other, depending on which poles are facing.	ways and that adaptation may lead to evolution. **Electricity:** • To know how to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit; • To know how to 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; • To know how to use recognised symbols when representing a simple circuit in a diagram.		**Animals including humans- reproduction:** • To know how to describe the changes as humans develop to old age.
Significant Individulas	Charles Macintosh- waterproofs Preet Chandri- Polar Preet			Thomas Edison-Lightbulb Magnes-Magnet	Mary Anning- Palaeontologist Alan Titchmarsh-Botanist	Sir Isaac Newton- Gravity	Charles Darwin- Natural Selection Steve Backshall- Naturalist	Sir Isaac Newton- Gravity Leonardo da Vinci- inventor- sculptor- engineer Michael Faraday- First Motor	Greta Thunberg-Activist Zacharias Janssen-Microscope
Enrichment/ Sustainability	**Preet Chandri**	**Homefields Heart wildlife garden**	**We are Meteorologists- weather reporters (Green Screen)**		**Homefield's Heart- Blue Peter badge (Eco)**	**STEM live- Roman Catapult**			**Activist Debate**
Assessment- Proof of Progress	**Quiz**	**Mind Map**	**Quadrant**	**Mind Map**	**Mind Map**	**Mind Map**	**Mind Map**	**Mind Map**	**Mind Map**
Teacher Assessment of Primary Science (TAPS)	Rocket Mice (Working Scientifically- Perform simple tests to answer questions)	Body Parts (Working Scientifically- Use observations and ideas to suggest answers to questions.) Plant Structure (Working Scientifically Observe closely, using simple equipment.)	Seasonal Change (Working Scientifically- Observe over time and record data to help in answering questions)	Explaining Light Conductors and Insulators (Working Scientifically)	Rock Reporters (Working Scientifically-Reporting Findings) Draw and Label FLOWERING PLANT (Working Scientifically- Making observations and ask relevant questions.)	Car Graph and Conclusion (Working Scientifically- Handling Data and Conclusions)	Egg Strength (Working Scientifically- Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.)	**Catapults** (Working Scientifically- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models.)	Outdoor Keys (Working Scientifically- Record data and results of increasing complexity using scientific diagrams and labels, ***classification keys,*** tables, bar and line graphs, and models.) Measuring Growth- (Working Scientifically- Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.)

Science Vocabulary Progression

Year A Living things and their habitat:

- Living or dead**: living, dead, never living,** not living, alive, never been alive, healthy.
- **Habitats** including **microhabitats**: **depend,** shelter, safety, **survive**, suited, space, minibeast, air.
- **Life processes:** movement, sensitivity, growth, reproduction, nutrition, excretion, respiration.
- **Food chains: food sources,** food, producer, consumer, predator, prey.
- Names of habitats and microhabitats: e.g. under leaves, woodland, rainforest, sea shore, ocean, urban, local habitat.

Previously introduced vocabulary: senses, **carnivore**, **herbivore**, **omnivore**, **seed**, **water**, names of materials.

Seasons

- **Seasons: spring, summer, autumn, winter**, seasonal change.
- **Weather**: e.g. sun, rain, snow, sleet, frost, ice, fog, cloud, hot/warm, cold, storm, wind, thunder, weather forecast.
- Measuring weather: temperature, rainfall, wind direction, thermometer, rain gauge.
- Day length: night, day, **daylight.**

Year A Plants:

- Growth of plants: **germination**, **shoot, seed dispersal,** grow, food store, life cycle, die, wilt, seedling, sapling.
- Needs of plants: **sunlight, nutrition,** light, healthy, space, air.
- Name different types of plant: e.g. bean plant, cactus.
- Names of different habitats: e.g. rainforest, desert.

Previously introduced vocabulary: **water**, **temperature**, warm, hot, cold, habitat.

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Previously introduced vocabulary: **water**, **temperature**, warm, hot, cold, habitat.

Everyday materials

- Names of **materials**: wood, plastic, glass, metal, water, rock, paper, cardboard, rubber, fabric.
- Properties of materials: **hard, soft, shiny, dull, stretchy**, **rough, smooth, bendy, not bendy, transparent, opaque, waterproof, not waterproof**, **absorbent, not absorbent,** sharp, stiff.
- Other: **object.**

Year A Animals including humans:

- Being born and growing: **Young, offspring, live young**, grow, **develop**, change, hatch, lay, fly, crawl, talk.
- Young and adult names: e.g. lamb and sheep, kitten and cat, duckling and duck.
- **Life cycle** stages: e.g. baby, toddler, child, teenager, **adult;** frogspawn, tadpole, froglet, frog.
- Survival and staying healthy: basic needs, survive, food, air, **exercise, diet, nutrition**, healthy, balanced diet, **hygiene, germs.**
- Food groups: fruit and vegetables, proteins, dairy and alternatives, carbohydrates, oil and spreads, fat, salt, sugar.

Previously introduced vocabulary: **water**.

Year A Living things and their habitat:

- Living things: **organisms, specimen,** species.
- Grouping living things: **classification,** classification keys, classify, **characteristics**.
- Names of invertebrate animals: snails and slugs, worms, spiders, insects.
- Invertebrate body parts: e.g. wing case, abdomen, thorax, antenna, segments, mandible, proboscis, prolegs.
- Environmental changes: **environment,** environmental dangers, adapt, natural changes, climate change, deforestation, pollution, urbanisation, invasive species, **endangered species, extinct.**

Previously introduced vocabulary: carbon dioxide, **fish, bird, mammal, amphibian, reptile**, skeleton, bone, **vertebrate, invertebrate,** backbone, names for animal body parts, names of common plants, photosynthesis.

Animals including humans- skeletons:

- Food groups and **nutrients**: fibre, fats **(saturated and unsaturated**), vitamins, minerals.
- Skeletons and muscles: skeleton, **muscles, tendons, joints,** protection, support, organs, voluntary muscles, involuntary muscles, biceps, triceps, contract, relax, bone, cartilage, shell, **vertebrate, invertebrate,** endoskeleton, exoskeleton, hydrostatic skeleton.
- Names of human bones: e.g. skull, spine, backbone, vertebral column, ribcage, pelvis, clavicle, scapula, humerus, ulna, pelvis, radius, femur, tibia, fibula.
- Other: **energy**.

Previously introduced vocabulary: movement.

Year A States of matter:

- **States of matter: solids, liquids, gases,** particles.
- State change: **evaporate, condense, melt, freeze**, heat, cool, melting point, freezing point, boiling point, **water vapour**.
- Water cycle: **precipitation**, evaporation, condensation, ground run-off, collection, underground water, bodies of water (sea, river, stream), water droplets, hail.
- Other: atmosphere.

Previously introduced vocabulary: temperature, rain, cloud, snow, wind, sun, hot, cold, absorb, carbon dioxide

Year A Animals including humans- digestive system:

- Digestive system: **digest**, digestion, tongue, teeth, saliva, salivary glands, **oesophagus, stomach,** liver, pancreas, gall bladder, **small intestine,** duodenum**, large intestine, rectum,** anus, faeces, organ.
- Types of teeth and dental care: **molar**, **premolar**, **incisor**, **canine**, wisdom teeth, tooth decay, plaque, enamel, baby (milk) teeth.
- Food chains and animal diets: decomposer, food web.

Sound:

- Parts of the **ear: eardrum.**
- Making sound: **vibration,** vocal cords, **particles.**
- Measuring sound: **pitch**, **volume, amplitude, sound wave,** quiet, loud, high, low, travel**, distance.**
- Other: **soundproof, absorb sound.**

Year A Earth and Space:

- Solar system: **star, planet.**
- Names of planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus.
- Shape: **spherical bodies, sphere.**
- Movement: **rotate, axis, orbit, satellite.**
- Theories: **geocentric model, heliocentric model, astronomer.**
- Day length: sunrise, sunset, midday, time zone.

Previously introduced vocabulary: **Sun, moon, shadow**, day, night, heat, **light**, **reflect**.

Year A Light:

- Reflection: periscope.
- Seeing light: **visible spectrum, prism.**
- How light travels: light waves, wavelength, straight line, **refraction.**

Previously introduced vocabulary: names and properties of materials, absorb.

Year A Properties and changes of materials:

- Properties of **materials**: thermal **conductor/insulator,** magnetism, electrical resistance, **transparency**.
- Mixtures and solutions: dissolving, substance, soluble, insoluble.
- Changes of materials: reversible change, physical change, irreversible change, chemical change, burning, new material, product.
- Separating: sieving, filtering, magnetic attraction.

Previously introduced vocabulary: electrical **conductor/insulator,** bulb, **translucent**.

Animals including humans- Circulatory System:

Circulatory system: circulation, **heart**, pulse, heartbeat, heart rate, lungs, breathing, **blood vessels**, blood, pump, transported, **oxygenated blood, deoxygenated blood,** oxygen, arteries, veins, capillaries, chambers, plasma, platelets, white blood cells, red blood cells.

- Lifestyle: **drug, alcohol,** smoking, disease, calorie, energy input, energy output.
- Other: water transportation, nutrient transportation, waste products.

Previously introduced vocabulary: carbon dioxide.

Science Vocabulary Progression Year B

Year B Use of everyday materials:

- Changing shape: squash, bend, twist, stretch.
- **Properties** of **materials:** e.g. strong, flexible, light, hard-wearing, elastic.

Other: **suitability**, recycle, pollution.

Year B Animals including humans:

- Names of animal groups: **fish, amphibians, reptiles, birds, mammals.**
- Animal diets: **carnivore, herbivore, omnivore.**
- Human and animal body parts: e.g. body, head, neck, arms,

Year B Seasons:

- **Seasons: spring, summer, autumn, winter**, seasonal change.
- **Weather**: e.g. sun, rain, snow, sleet, frost, ice, fog, cloud, hot/warm, cold, storm, wind, thunder, weather forecast.

Year B Light:

- **Light** and seeing: **dark,** absence of light, **light source,** illuminate, visible, **shadow, translucent,** energy, block.
- **Light sources:** e.g. candle, torch, fire, lantern, lightning.
- **Reflective light: reflect, reflection,** surface, **ray**,

Year B Rocks and Soils:

- Types of rock: **sedimentary rock, igneous rock, metamorphic rock.**
- **Properties of rocks: permeable,** semi-permeable, **impermeable,** durable.
- Names of rocks: e.g. marble, chalk, granite, sandstone, slate.
- Formation of rocks and fossils: natural, human-made, **magma, lava,** molten

Year B Forces:

- How things move: move, movement, **surface**, distance, strength.
- Types of **forces:** push, pull, contact force, non-contact force, **friction**.
- **Magnets: magnetic, magnetic field,** magnetic

Year B Evolution and Inheritance:

- **Evolution** and **inheritance:** evolve, **adaptation,** inherit, **natural selection, adaptive traits, inherited traits,** mutations, theory of evolution, ancestors, biological parent,

Year B Forces:

- Types of forces: **air resistance, water resistance, buoyancy, upthrust,** Earth's **gravitational pull, gravity**, opposing forces, driving force.

Year B Living Things and their Habitats:

- **Reproduction**: **asexual reproduction, sexual reproduction**, **gestation, metamorphosis,** gametes, tuber, runners/side branches, plantlet, cuttings, embryo, adolescent, penis, vagina, egg, pregnancy, gestation.

		elbows, legs, knees, face, ears, eyes, nose, hair, mouth, teeth, hands, feet, tail, wings, feathers, fur, beak, fins, gills. • Human senses: **sight, hearing, touch, smell, taste.** • Exploring senses: loud, quiet, soft, rough. • Other: human, animal, pet **Plants:** • Names of common plants: **wild plant, garden plant, evergreen** tree, **deciduous** tree, common flowering plant, **weed,** grass. • Name some features of plants: e.g. **flower**, vegetable, **fruit**, berry, **leaf/leaves**, blossom, **petal**, **stem**, trunk, branch, **root**, **seed, bulb,** soil. • Name some common types of plant e.g. sunflower, daffodil.	• Measuring weather: temperature, rainfall, wind direction, thermometer, rain gauge. • Day length: night, day, **daylight.**	scatter, reverse, beam, angle, mirror, moon. • Sun safety: dangerous, glare, damage, UV light, UV rating, sunglasses, direct. Previously introduced vocabulary: **opaque, transparent,** sunlight, sun. **Electricity:** • **Electricity:** mains-powered, battery-powered, **mains electricity,** plug, **appliances**, devices. • Circuits: **circuit,** simple series circuit, complete circuit, incomplete circuit. • Circuit parts: bulb, cell, wire, buzzer, switch, motor, **battery.** • Materials: **electrical conductor, electrical insulator.** • Other: safety. Previously introduced vocabulary: names of materials.	rock, **sediment, erosion, fossilisation,** layers, bone, fossil. • Soil: sandy, chalky, clay, peaty, loamy, topsoil, subsoil, bedrock, mineral, organic matter, compost. • Other: **palaeontology.** Previously introduced vocabulary: soil, **water**, air. **Plants:** • Water transportation: transport, **evaporation, evaporate, nutrients,** absorb, anchor. • Life cycle of flowering plants: **pollination** (insect/wind), pollen, nectar, pollinator, seed formation, **seed dispersal** (animal/wind/water), reproduce, **fertilisation,** fertilise, **stamen,** anther, filament, **carpel (pistil),** stigma, style, ovary, ovule, **sepal**, carbon dioxide. Previously introduced vocabulary: life cycle**.**	force, bar magnet, horseshoe magnet, ring magnet, magnetic **poles** (north pole, south pole), **attract, repel,** compass. • Magnetic and non-magnetic materials: e.g. iron, nickel, cobalt. Previously introduced vocabulary: metal, names of materials.	chromosomes, genes, Charles Darwin. • Other: selective breeding, artificial selection, breed, cross breeding, genetically modified food, cloning, DNA. Previously introduced vocabulary: classification, **offspring, characteristics, habitat, environment,** adapt, **variations**, human, **fossil,** suited, cells, names of different habitats, names of animals and their body parts, species, **sedimentary rock**, lava, **igneous rock**, **metamorphic rock**, **magma**, heat, **fossilisation**. **Electricity:** • Flow and measure of electricity: **voltage, amps, resistance, electrons**, volts (V), **current.** • Circuits**: symbol,** circuit diagram, component, function, filament. • Variations: dimmer, brighter, louder, quieter. • Types of electricity: natural electricity, human-made electricity, solar panels, power station. • Other: positive, negative.	• **Mechanisms:** levers, pulleys, gears/cogs. • Measurements: **weight, mass,** kilograms (kg), Newtons (N), scales, speed, fast, slow. • Other: **streamlined**, Earth. Previously introduced vocabulary: air, heat, moon.	Previously introduced vocabulary: **life cycle, pollination,** offspring, **fertilise,** fertilisation, sepal, filament, anther, stamen, pollen, petal, stigma, style, ovary, carpel, ovule, stem, bulb, roots, mammal, adult, baby, sperm, cells, live young. • Classifying: Carl Linnaeus, Linnaean system, flowering and non-flowering plants, variation. **Microorganisms**: **bacteria,** single-celled, microbes, microscopic, virus, fungi, fungus, mould, antibiotic, yeast, ferment, **microscope**, decompose **Animals including humans- life cycles/ reproduction etc.** • Process of reproduction: **gestation, asexual reproduction, sexual reproduction,** sperm, egg, cells, clone. • Changes and **life cycle:** embryo, foetus, uterus, **prenatal, adolescence, puberty, menstruation, adulthood,** menopause, **life expectancy,** old age, hormones, sweat. • Changing body parts: e.g. breasts, penis, larynx, ovaries, genitalia, pubic hair. Previously introduced vocabulary: reproduction, **reproduce,** types of animals and animal groups, **fertilisation.**