

Term	Topic/learning pathway	Keywords	Links to previous learning	Links to wider curriculum
<b>AUTUMN 1</b>	Introduction to science Baselines Recall  Scientific method Making a hypothesis	Method, hypothesis, conclusion, evaluation, variable, predict, reproducible, reliable, anomaly, error	asking relevant questions, setting up simple practicals, making observations and taking accurate measurements, using standard units, gathering, recording, classifying and presenting data, making conclusions, making predictions, suggesting improvements	
<b>AUTUMN 2</b>	<b>Forces</b> Speed Gravity <b>Matter</b> Particle model Separating mixtures	Acceleration, air resistance, contact force, distance–time graph, driving force, equilibrium, field, friction, gravitational field strength, gravity/gravitational force, interaction pair, mass, newton, newton meter, relative motion, resistive force, resultant force, speed, weight, boiling point, change of state, chromatography, condense, density. Diffusion, dissolve, distillation, evaporate, filtrate, filtration, freeze, gas, gas pressure, liquid, melt, melting point, mixture, particle, property, pure substance, residue, saturated solution, solid, solubility curve, soluble (insoluble), solute, solution, solvent, states of matter, sublime, substance	KS2 <b>Forces and surfaces, gravity/falling to earth, levers and pulleys, changes of state, heating and cooling on states</b>	KS4 - Maths, Summer 1 –graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages. KS4 - Maths, Summer 1 – area, perimeter and volume
<b>SPRING 1</b>	<b>Electromagnets</b> Potential difference/resistance Current	Ammeter, amps, atoms, attract, battery, cell, charged up, current, electrical conductor, electrical insulator, electric charge, electric field, electron, electrostatic force, lightning, negatively charged, neutral, ohms, parallel, positively charged, potential difference, rating, repel, resistance, series, voltage, Voltmeter, volts	KS3 <b>Magnets – attract/repel, electrical appliances, series and parallel circuits, conductors and insulators</b>	KS4 - Maths, Summer 1 –graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages. KS4 - Maths, Summer 1 – area, perimeter and volume
<b>SPRING 2</b>	<b>Organisms</b> Movement Cells	Amoeba, antagonistic muscle pair, bone, cell membrane, cell wall, chloroplast, circulatory system, concentration, cytoplasm, digestive system, euglena, flagellum, immune system, joints, leaf cell, ligaments, microscope, mitochondria, multi-cellular (organism), muscular skeletal system, nerve cell, nucleus, organ, organ system, red blood cell, reproductive system, respiration, respiratory system, root hair cell, skeleton, specialised cell, sperm cell, structural adaptations (of cells) tendons, tissue, uni-cellular (organism), vacuole	KS2 <b>Muscles, skeleton, nerves</b>	KS3 – PSHE, Autumn 2 – healthy eating KS4 - Maths, Summer 1 – graphs and charts PE, Spring 1 – exercise and the body
<b>SUMMER 1</b>	<b>Energy</b> Energy cost Energy transfer	chemical energy store, dissipation (dissipated), elastic energy store, energy, energy resource, fossil fuel, gravitational potential energy store, joule, kilojoule, kilowatt, kilowatt hour, kinetic energy store, law of conservation of energy, non-renewable, power, renewable, thermal energy store, watt	KS" <b>Electricity, circuit symbols</b>	KS4 - Maths, Summer 1 – graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages.

				KS4 - Maths, Summer 1 – area, perimeter and volume
<b>SUMMER 2</b>	<p><b>Reactions</b></p> <p>Acids and alkalis</p> <p>Metals and non-metals</p> <p><b>Waves</b></p> <p>Sound</p> <p>Light</p>	<p>Acid, alkali, base, chemical reaction, concentration</p> <p>Corrosive, dilute, displace, displacement, element, indicator, irritant, litmus, metal, neutral, neutralisation, oxidation, oxide, Periodic table, pH scale, product, reactant, reactivity, reversible, salt, strong acid, thermite reaction, universal indicator, word equation, <b>absorption, amplify, amplitude, angle of incidence, angle of reflection, auditory range, cochlea, concave, converging, convex, crest, decibel, diffuse reflection, dispersion, diverging, echo, eclipse, focal point, focus, frequency, hertz, incident ray, infrasound, inverted, longitudinal wave, luminous, medium, normal line, opaque, oscilloscope, ossicle, peak, photoreceptor, pitch, plane, primary colour, prism, refraction, spectrum, specular reflection, translucent, transparent, trough, ultrasound, vacuum, vibration, volume, wavelength</b></p>	<p>KS1</p> <p><b>light and dark, reflections, shadows, sound vibrations, pitch, volume, distance and waves</b></p> <p>KS2</p> <p>Making new materials via reactions, comparing material properties solutions, reversible changes, <b>light in straight lines, reflection,</b></p>	<p>KS4 - Maths, Summer 1 –graphs and charts</p> <p>KS4 - Maths, Spring 1 – fractions, decimals and percentages.</p> <p>KS4 - Maths, Summer 1 – area, perimeter and volume</p>

## Year 2

The academic year 2022-2023 will begin with the biology unit Organism rather than the intended module Ecosystems.

Due to the recent pandemic and missed learning, gaps in knowledge have been seen and steps have been taken to close these gaps. To do this, the original sequence of work has been amended to allow for a slower introduction of new content. Learning has been supplemented with missed KS2 sequencing to aid the comprehension of the new KS3 content. The taught content still follows the same sequence but with additional missed content, thus slowing the pace of the pathway.

Term	Topic/learning pathway	Keywords	Links to previous learning	Links to wider curriculum
<b>AUTUMN 1</b>	<p><b>Ecosystems</b></p> <p>Interdependence</p> <p>Plant reproduction</p>	Anther, bioaccumulation, carpel, community, competition, consumer, decomposer, ecosystem, environment, fertilisation, filament, food chain, food web, germination, habitat, interdependence, niche, ovary, ovule, petal, pollen, pollination, population, predator, prey, producer, seed, seed dispersal, sepal, stamen, stigma, style	<p>KS1</p> <p>Naming plants, basic structure of plants, Identifying animal kingdoms (birds, mammals etc) and groups (herbivore etc), plant requirements (light, water CO<sub>2</sub>), All living things have babies, Simple food chains, food sources,</p> <p>KS2</p> <p>Plant requirements (nutrients), variation between plants and needs, life cycles seed dispersal, Predator/prey, constructing food chains,</p>	KS3 – Art, Summer 1 /2 – our environment
<b>AUTUMN 2</b>	<p><b>The earth</b></p> <p>Earth structure</p> <p>Universe</p>	artificial satellite , asteroid, axis, ceramic, constellation, core, crust, day, deposition, durable, dwarf planet, Earth, erosion, exoplanet, galaxy, geocentric model, heliocentric model, igneous rock, lava, light year, magma, mantle, metamorphic rock, Milky Way, mineral, Moon, natural satellite, night, obsidian, orbit, phases of the Moon, planet, porous, rock cycle, season, sediment, sedimentary rock, Solar System, star, strata, Sun, transport, Universe, uplift, weathering, year	<p>KS1</p> <p>seasonal changes, weather</p> <p>KS2</p> <p>Rocks, materials, sun, earth and moon movements, day and night, axis rotation</p>	<p>KS4 - Maths, Summer 1 –graphs and charts</p> <p>KS4 - Maths, Spring 1 – fractions, decimals and percentages.</p> <p>KS4 - Maths, Summer 1 – area, perimeter and volume</p>
<b>SPRING 1</b>	<p><b>Genes</b></p> <p>Variation</p> <p>Human reproduction</p>	Adaptation, adolescence, amniotic fluid, cervix, cilia, condom, continuous variation, contraception, contraceptive pill, discontinuous variation, egg cell, ejaculation, embryo, environmental variation, fertilisation, foetus, gamete, gestation, implantation, inherited variation, menstrual cycle (period), menstruation , ovary, oviduct (fallopian tube), ovulation, penis, placenta, puberty, reproductive system, scrotum, semen, sex hormone, sexual intercourse, species, sperm cell, sperm duct, testicles (testes), umbilical cord, urethra, uterus (womb), vagina, variation	<p>KS1</p> <p>All living things have babies</p> <p>KS</p>	<p>KS3 – PSHE, Summer 1 – contraception</p> <p>KS3 – PSHE, Autumn 2 -puberty</p>
<b>SPRING 2</b>	<p><b>Forces</b></p> <p>Contact forces</p> <p>Pressure</p> <p><b>Matter</b></p> <p>Elements</p> <p>Periodic table</p>	atmospheric pressure, centre of gravity, centre of mass, compression, contact force, deformation, drag force, elastic limit, equilibrium, extension, fluid, friction, gas pressure, Hooke's Law, incompressible, law of moments, linear relationship, liquid pressure, lubrication, moment, newton, newton metres, Newtons per metre squared, pivot, pressure, reaction, streamlined, stress, tension, up thrust, water resistance, alkali metals, atom, carbonate, chemical formula, chemical properties,	<p>KS2</p> <p>Magnets and contact forces</p>	<p>KS4 - Maths, Summer 1 –graphs and charts</p> <p>KS4 - Maths, Spring 1 – fractions, decimals and percentages.</p> <p>KS4 - Maths, Summer 1 – area, perimeter and volume</p>

		chemical symbol, compound, element(s), group, halogen, hydroxide, molecule, natural polymer, nitrate (chemistry), noble gases, period, Periodic table, physical properties, polymer, sulphate, synthetic polymer, trend, unreactive		
<b>SUMMER 1</b>	<b>Electromagnets</b> <b>Magnetism</b> <b>electromagnetism</b>	circuit breaker, core (electromagnet), electric bell, electromagnet, loudspeaker, magnet, magnetic field, magnetic field lines, magnetic force, magnetic poles, magnetise, permanent magnet, solenoid	<b>KS2</b> Attract and repel, forces between objects, poles, contact and non contact magnets, grouping materials – magnetic and non magnetic	KS4 - Maths, Summer 1 –graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages. KS4 - Maths, Summer 1 – area, perimeter and volume
<b>SUMMER 2</b>	<b>Organisms</b> <b>Breathing</b> <b>Digestion</b>	Addiction, alcoholic, alveolus, anus, asthma, balanced diet, Bile, breathing, Bronchiole, bronchus, carbohydrase, carbohydrate, catalyst, condense, contract, deficiency, depressant, diaphragm, dietary fibre, digestion, digestive system, drug, enzyme, ethanol, exhale, food test, gas exchange, gullet, gut bacteria, hypothesis, inhale, large intestine, lipase, lipid, lungs, lung volume, malnourishment, medicinal drug, mineral (biology), nutrient, obese, passive smoking, protease, protein, recreational drug, rectum, respiration, respiratory system, ribs, small intestine, starvation, stimulant, stomach, trachea, unit of alcohol, villi, vitamin, withdrawal symptoms	<b>KS1</b> Naming body parts, linking organs to senses, <b>KS2</b> Breaking down food for energy, use of different teeth, function of heart/blood vessels, nutrient transport systems, nutrition, changes through age in humans, impact of diet/drugs on health	KS3 – PSHE, Autumn 2 – healthy eating KS4 - Maths, Summer 1 – graphs and charts PE, Spring 1 – exercise and the body

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<b>AUTUMN 1</b>	<p><b>Energy</b></p> <p>Work</p> <p>Heating and cooling</p> <p><b>Reactions</b></p> <p>Types of reaction</p> <p>Chemical energy</p>	<p>Conduction, convection, convection current, deform, displacement, infrared radiation, input force, lever, output force, Radiation, simple machine, temperature, thermal conductor, thermal energy store, thermal imaging camera, thermal insulator, thermometer, work, balanced symbol equation, catalyst, catalytic converter, chemical bond, chemical reaction, Combustion, conservation of mass, conserved, decomposition, endothermic reaction, energy level diagram, exothermic reaction, fossil fuel, fuel, non-renewable, physical change, products, reactants, renewable, thermal decomposition</p>	<p>KS2</p> <p>Reversible and irreversible reactions,</p>	<p>KS4 - Maths, Summer 1 –graphs and charts</p> <p>KS4 - Maths, Spring 1 – fractions, decimals and percentages.</p> <p>KS4 - Maths, Summer 1 – area, perimeter and volume</p>
<b>AUTUMN 2</b>	<p><b>Waves</b></p> <p>Wave effect</p> <p>Wave properties</p>	<p>Compression, electromagnetic spectrum, gamma rays, infrared (IR) (radiation), ionisation, longitudinal wave, loudspeaker, microphone, microwaves, pressure wave, radio waves, rarefaction, superpose, transmission, transverse wave, ultrasound, ultraviolet (UV), visible light, wave, X-rays</p>		<p>KS4 - Maths, Summer 1 –graphs and charts</p> <p>KS4 - Maths, Spring 1 – fractions, decimals and percentages.</p> <p>KS4 - Maths, Summer 1 – area, perimeter and volume</p>
<b>SPRING 1</b>	<p><b>Ecosystems</b></p> <p>Respiration</p> <p>Photosynthesis</p>	<p>aerobic respiration, algae, anaerobic respiration, biotechnology, chlorophyll, deficiency, fermentation, fertiliser, haemoglobin, iodine, magnesium, nitrates (biology), oxygen debt, phosphates, photosynthesis, plasma, potassium, producer, stomata</p>	<p>KS1</p> <p>Plant requirements (light, water CO<sub>2</sub>)</p> <p>KS2</p> <p>Plant requirements (nutrients), variation between plants and needs, life cycles seed dispersal,</p>	<p>KS3 – Art, Summer 1 /2 – our environment</p>
<b>SPRING 2</b>	<p><b>The earth</b></p> <p>Climate</p> <p>Earth’s resources</p>	<p>Atmosphere, carbon cycle, carbon sink, climate change, combustion, electrolysis, extraction, fossil fuel, global warming, greenhouse effect, greenhouse gas, mineral (chemistry), natural resources, ore, photosynthesis, recycling, respiration</p>	<p>KS2</p> <p>evaporation and condensation-water cycle</p>	<p>KS4 - Maths, Summer 1 –graphs and charts</p> <p>KS4 - Maths, Spring 1 – fractions, decimals and percentages.</p> <p>KS4 - Maths, Summer 1 – area, perimeter and volume</p>
<b>SUMMER 1</b>	<p><b>Genes</b></p> <p>Evolution</p> <p>inheritance</p>	<p>Allele, biodiversity, captive breeding, chromosome(s), competition, conservation, DNA, dominant (allele), endangered species, evolution, extinct, fossil, gene, gene bank, genetic modification, inherited characteristic(s), mutation, natural selection, peer review, population, Punnett square, recessive</p>	<p>KS1</p> <p>Recognising living and non-living, habitats of specific animals, basic life cycles</p> <p>Environmental changes pose threats, adaptations for habitat/survival – evolution, Classification, observable characteristics for classification, fossils-changes over time</p>	<p>KS3 – Art, Summer 1 /2 – our environment</p>

<b>SUMMER 2</b>	Summer exams			
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