

Term	Topic/learning pathway	Keywords	Links to previous learning	Links to wider curriculum
<b>AUTUMN 1</b>	<p><b>Forces</b> Speed Gravity <b>Matter</b> Particle model</p>	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, condense, density	<p>KS2 Forces and surfaces, gravity/falling to earth, levers and pulleys, changes of state, heating and cooling on states</p>	<p>KS4 - Maths, Summer 1 –graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages. KS4 - Maths, Summer 1 – area, perimeter and volume</p>
<b>AUTUMN 2</b>	Separating mixtures	chromatography,. 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	<p>KS2 Forces and surfaces, gravity/falling to earth, levers and pulleys, changes of state, heating and cooling on states</p>	<p>KS4 - Maths, Summer 1 –graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages. KS4 - Maths, Summer 1 – area, perimeter and volume</p>
<b>SPRING 1</b>	<p><b>Electromagnets</b> Potential difference/resistance Current</p>	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	<p>KS3 Magnets – attract/repel, electrical appliances, series and parallel circuits, conductors and insulators</p>	<p>KS4 - Maths, Summer 1 –graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages. KS4 - Maths, Summer 1 – area, perimeter and volume</p>
<b>SPRING 2</b>	<p><b>Organisms</b> Movement Cells</p>	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	<p>KS2 Muscles, skeleton, nerves</p>	<p>KS3 – PSHE, Autumn 2 – healthy eating KS4 - Maths, Summer 1 – graphs and charts PE, Spring 1 – exercise and the body</p>
<b>SUMMER 1</b>	<p><b>Energy</b> Energy cost Energy transfer</p>	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	<p>KS” Electricity, circuit symbols</p>	<p>KS4 - Maths, Summer 1 – graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages. KS4 - Maths, Summer 1 – area, perimeter and volume</p>

<p style="text-align: center;"><b>SUMMER 2</b></p>	<p style="text-align: center;"> <b>Reactions</b>  <b>Acids and alkalis</b>  <b>Metals and non-metals</b>  <b>Waves</b>  <b>Sound</b>  <b>Light</b> </p>	<p>         Acid, alkali, base, chemical reaction, concentration          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> <b>KS1</b>  <b>light and dark, reflections,</b>  <b>shadows, sound vibrations, pitch,</b>  <b>volume, distance and waves</b>  <b>KS2</b>          Making new materials via          reactions, comparing material          properties solutions, reversible          changes, <b>light in straight lines,</b>  <b>reflection,</b> </p>	<p>         KS4 - Maths, Summer 1 –graphs          and charts          KS4 - Maths, Spring 1 – fractions,          decimals and percentages.          KS4 - Maths, Summer 1 – area,          perimeter and volume       </p>
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<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>	<b>Energy</b> Work Heating and cooling <b>Reactions</b> Types of reaction Chemical energy	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	KS2 Reversible and irreversible reactions,	KS4 - Maths, Summer 1 –graphs and charts KS4 - Maths, Spring 1 – fractions, decimals and percentages. KS4 - Maths, Summer 1 – area, perimeter and volume
<b>AUTUMN 2</b>	<b>Waves</b> Wave effect Wave properties	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		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>Ecosystems</b> Respiration Photosynthesis	aerobic respiration, algae, anaerobic respiration, biotechnology, chlorophyll, deficiency, fermentation, fertiliser, haemoglobin, iodine, magnesium, nitrates (biology), oxygen debt, phosphates, photosynthesis, plasma, potassium, producer, stomata	KS1 Plant requirements (light, water CO <sub>2</sub> ) KS2 Plant requirements (nutrients), variation between plants and needs, life cycles seed dispersal,	KS3 – Art, Summer 1 /2 – our environment
<b>SPRING 2</b>	<b>The earth</b> Climate Earth's resources	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	KS2 evaporation and condensation-water cycle	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 1</b>	<b>Genes</b> Evolution inheritance	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	KS1 Recognising living and non-living, habitats of specific animals, basic life cycles Environmental changes pose threats, adaptations for habitat/survival – evolution, Classification, observable characteristics for classification, fossils-changes over time	KS3 – Art, Summer 1 /2 – our environment

<b>SUMMER 2</b>	Summer exams			
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