

THREE PEAKS PRIMARY ACADEMY – SCIENCE

	Year 1 Skills	Year 1 Language	Year 2 Skills	Year 2 Language
Working Scientifically	Ask simple questions, make simple observations, carry out simple tests, classify and sort, suggest answers, gather and record findings, use scientific language and begin to notice patterns	Questions, answers, equipment, results, sort, explore, observe, similar, prediction.	Ask simple questions, make simple observations, carry out simple tests using giving measuring equipment, classify and sort, suggest answers, gather and record findings and use these to answer questions, use and read scientific language and begin to notice patterns	Gather, order, notice patterns, link ideas, method, identify, classify, notice relationships, fair test.
Plants	identify a variety of common animals (fish, amphibians, reptiles, birds and mammals).	Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Trunk, Branches, Stem	observe and describe how seeds and bulbs grow into mature plants, find out about how plants need water, light, and a suitable temperature to grow and stay healthy.	Seeds, Bulbs, Water, Light, Temperature, Growth, Stamen, Petal, Pollen, Anther, Germinate, Produce, Temperature
Animals including Humans	identify a variety of common animals and their structure - (fish, amphibians, reptiles, birds and mammals). Identify carnivores, herbivores and omnivores. Name, draw and label the basic parts of the human body and the linked sense.	fish, amphibians, reptiles, birds, mammals, pets, 5 senses (taste, smell, vision, touch, hearing), tongue, nose, eyes, hands, ears, carnivores, omnivores, herbivores, leg, arm, neck, knees, hair, arms, mouth, elbows, teeth, meat, plants.	notice that animals have offspring that grow into adults, find out about basic needs of animals and humans, describe the importance of exercise on humans and about eating the right amount of different food types.	offspring, grow, adults, water, food air, exercise, hygiene, nutrition, reproduce, baby, toddler child, teenager, adult, fruit, vegetables, dairy, balanced diet,
Everyday Materials	differentiate between an object and the material that it's made from. Identify a variety of everyday materials e.g wood, plastic, glass etc. describe properties of everyday materials and then compare them.	wood, plastic, glass, paper, cardboard, water, metal, Rock, hard, soft, bendy, rough, smooth	identify and compare the suitability of everyday materials. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending etc.	squashing, bending, twisting, stretching, stretchy, stiff, shiny, dull, rough, smooth, waterproof, absorbent, opaque, transparent brick, paper, fabrics,
Seasonal Changes	observe changes across the four seasons and describe the weather associated with the seasons and how day length varies.	Summer, Spring, Autumn, Winter, sun, moon, day, night, light, dark, season, warm, cold, wind, rain, hail, fog, thunder, lightning, weather		

Living Things and their Habitats			<p>explore / compare differences between living, dead and things that have never been alive. Identify how living things live in habitats that they are most suited too.</p> <p>Explain how habitats provide the basic needs of different kinds of animals and plants and how they depend on each other,</p>	
Rocks				
Light				
Forces and Magnets				
States of Matter				
Sound				
Electricity				
Properties and Changes of Materials				
Earth and Space				
Forces				
States of Matter				
Evolution and Inheritance				

THREE PEAKS PRIMARY ACADEMY – SCIENCE

	Year 3 Skills	Year 3 Language	Year 4 Skills	Year 4 Language
Working Scientifically	make decisions, ask questions, set up testing opportunities (fair test / comparative), use notes when making observations, use a range of equipment to take measurements, gather and record findings in a range of ways, use scientific language to report findings, draw simple conclusions, identify patterns, similarities / differences	Scientific enquiry, comparative and fair test, careful observation, accurate measurements, gather, record, drawings, conclusions.	make decisions, ask questions, set up testing opportunities (fair test / comparative), use notes when making observations, use a range of equipment to take measurements, gather and record findings in a range of ways, use scientific language to report findings, draw simple conclusions, identify patterns, similarities / differences, use secondary sources to help answer questions, use scientific evidence to answer questions, use scientific language both verbal / written	Classify, present, labelled diagrams, differences, similarities, changes, evidence, increase, decrease, accurate, appearance
Plants	identify / describe the functions of different parts of flowering plants (roots, stem, leaves etc) explore the requirements of plants for life / growth (air, light, water etc) investigate the way in which water is transported, explore the part of flowers that play in the life cycle of flowering plants (pollination, seed formation / dispersal), know that plants make their own food.	common, wild plants, garden plants deciduous, evergreen tree, deciduous, evergreen, trunk branches, leaf, root, plant leaf, root, leaves, bud, flowers blossom, petals, root stem, fruit, vegetables, bulb, seed, air, light, water, nutrients, soil, reproduction, transportation, dispersal, pollination		
Animals including Humans	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 animals have skeletons for support, protection and movement.	nutrition, nutrients, carbohydrates protein, fats, fibre, water, vitamins minerals, skeleton, bones, joints endoskeleton, exoskeleton, hydrostatic skeleton, vertebrate, invertebrate contract, relax, muscles, ball joint	describe the simple functions of the basic parts of the human digestive system. Identify the types of teeth in humans and their functions. Construct and interpret a variety of food chains, identifying produces, predators, prey.	digestion, mouth, tongue - saliva, oesophagus, transports stomach, acid, enzymes, small intestine – absorbs, water, vitamins, large intestine, colon, incisors, cutting, slicing

		socket joint, hinge joint, gliding joint		canines, ripping, tearing, molars – chewing, grinding, producers, prey
Everyday Materials				
Seasonal Changes				
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 both the local / wider environment. Recognise that environments can change and that this can pose dangers to living things.	environment flowering, non-flowering, plants, animals, vertebrate, environment, vertebrate, fish, amphibians, reptiles birds, mammals, invertebrate, habitat snails, slugs, worms, spiders, insects, plants, flowering plants (including grasses), non-flowering (including mosses and ferns), human impact, nature reserves, garden ponds, litter, deforestation
Rocks	compare and group together different kinds of rocks on the basis of appearance and simple physical properties. Describe how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.	appearance, physical, properties, hard/soft shiny/dull, rough/smooth absorbent/not absorbent, fossils, sedimentary, rock, soils, organic matter buildings, gravestones, grains, crystals		
Light	recognise that they need light in order to see things and that dark is the absence of light. Notice that light reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect our eyes. Recognise that shadows are	light, see, dark reflect, surface, natural, star, Sun Moon, shadow, blocked, solid, artificial, torch, candle, lamp, sunlight, dangerous, protect eyes, translucent, transparent		

	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.			
Forces and Magnets	compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet. identify magnetic materials. describe magnets as having two poles. predict whether two magnets will attract or repel each other, depending on which poles are facing.	force, push, pull, open, surface, magnet, magnetic, attract, repel, magnetic poles, North, South		
States of Matter			explore a variety of every day materials and develop simple descriptions of the 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, measure or research the temperature at which this happens in degrees celsius. identify the part played by evaporation and condensation in the water cycle and associate the	solid, solidify, iron, ice, melt, freeze, liquid, gas, container, changing state, heated, cooled, degrees, celsius, thermometer, water cycle, evaporation, condensation, temperature, melting, warm, cool, water, water vapour

			rate of evaporation with temperature.	
Sound			<p>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 the 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.</p>	<p>vibrate, air, medium, ear hear, sound, volume, pitch, faint, fainter loud, louder, string, percussion, woodwind brass, insulate</p>
Electricity			<p>identify common appliances that run on electricity. Construct simple series circuits, identifying / naming the basic parts (cell, wire, bulb, switch, buzzer). Use their circuits to create simple devices. Draw the circuit as a pictorial representation. consider the precautions for working safely with electricity. identify whether or not a lamp will light in a simple series circuit. 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 common conductors and insulators and associate metals with being good conductors.</p>	<p>appliances, electricity, electrical circuit, cell, wire bulb, buzzer, danger electrical safety, sign, insulators wood, rubber, plastic, glass, conductors, metal , water, switch - open, closed</p>

## THREE PEAKS PRIMARY ACADEMY – SCIENCE

Properties and Changes of Materials				
Earth and Space				
Forces				
States of Matter				
Evolution and Inheritance				

	Year 5 Skills	Year 5 Language	Year 6 Skills	Year 6 Language
Working Scientifically	<p>plan different types of scientific enquiry to answer questions, including recognising and controlling variables. 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. reporting and presenting findings from enquiries including conclusions, relationships and explanations of degrees of trust in oral and written forms. explore / discuss their ideas, ask questions about scientific phenomena. recognise that scientific ideas change and develop over time. draw conclusions based on their data and observations,</p>	<p>plan, variables, measurements, accuracy, precision, repeat record data, scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph, line graph, predictions, further comparative and fair tests, report and present conclusions, casual relationships, explanations, degree of trust, evidence, support, arguments, identify, classify and describe patterns</p>	<p>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. using test results to make predictions to set up further comparative and fair tests</p> <p>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results.</p> <p>identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>asking their own questions about scientific phenomena.</p> <p>recognise that scientific ideas change and develop over time. draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their</p>	<p>plan, variables, measurements, accuracy, precision, repeat record data, scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph, line graph, predictions, further comparative and fair tests, report and present conclusions, casual relationships, explanations, degree of trust, evidence, support, arguments, identify, classify and describe patterns, quantitative measurements</p>

			findings. Pupils should read, spell and pronounce scientific vocabulary correctly.	
Plants				
Animals including Humans	describe the changes as humans to develop to old age. Draw a timeline that indicates stages in growth and development of humans. Learn about the changes experienced in puberty.	puberty, life cycle, gestation, growth, reproduce, foetus, baby, fertilisation, toddler, child, teenager, adult old age, life expectancy, adolescence, childhood, adulthood.	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. explore questions to understand how the circulatory system enables the body to function. learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body. explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.	heart, lungs, liver, kidney brain, skeletal, skeleton, muscle, muscular, digest digestion, digestive, circulatory system, heart, blood vessels, blood, impact, diet, exercise, drugs, lifestyle, nutrients, water, damage, drugs, alcohol, substances
Everyday Materials				
Seasonal Changes				
Living Things and their Habitats	describe the difference in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in	mammal, amphibian, insect, bird, plants, animals, plants: sexual, asexual. animals: sexual, rainforest, oceans, desert,	describe how living things are classified into broad groups according to common observable characteristics and based on	classify, compare Linnaean, Carl Linnaeus classification, domain kingdom, phylum, class

	<p>some plants and animals. Raise questions about their local environment throughout the year. Find out about the work of naturalists and animal behaviourists such as David Attenborough and Jane Goodall. find out about different types of reproduction, including sexual and asexual reproduction in plants and sexual reproduction in animals.</p>	<p>prehistoric, similarities, differences, germination, pollination, stamen, stigma.</p>	<p>similarities and differences, including micro-organisms, plants and animals. give reasons for classifying plants and animals based on specific characteristics. know that broad groupings, such as micro-organisms, plants and animals can be subdivided. should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). find out about significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.</p>	<p>order, family, genus, species characteristics, vertebrates invertebrates, microorganisms organism, flowering non-flowering</p>
<p>Rocks</p>				
<p>Light</p>			<p>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. work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it</p>	<p>light, travels, straight, reflect, reflection, light source, object, shadows, mirrors, periscope, rainbow, filters, absorb</p>

			works. look at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur).	
Forces and Magnets				
States of Matter				
Sound				
Electricity			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. construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. learn how to represent a simple circuit in a diagram using recognised symbols.	brightness, volume, switches, danger, series circuit, working safely with electricity, electrical safety sign, circuit, diagram, switch, bulb, buzzer, motor.
Properties and Changes of Materials	compare and group together everyday materials on the basis of their properties such as hardness, solubility, transparency, conductivity and their response to	properties, hardness solubility, transparency, conductive, dissolve liquid, solution, solute, separate separating, solids, liquids, gases, filtering, sieving, evaporating,		

	<p>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. 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 usually not reversible (burning &amp; acid on bicarbonate of soda). explore reversible changes including, evaporating, filtering, sieving, melting, dissolving (melting and dissolving are different processes). explore changes that are difficult to reverse (burning, rusting,)</p>	<p>reversible changes, mixing, evaporation, filtering, sieving, melting, irreversible, conductivity, insulation, chemical, opaque, translucent, rusting, residue, condensing</p>		
<p>Earth and Space</p>	<p>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</p>	<p>Earth, Sun, Moon moons, planets, stars solar system, Mercury, Venus, Mars, Jupiter Saturn, Uranus, Neptune Pluto, rotate, day, night, Aristotle, Ptolemy, Galileo Copernicus, Brahe, Alhazen, orbit,</p>		

	<p>apparent movement of the sun across the sky. 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. understand that a moon is a celestial body that orbits a planet (Earth has one moon, Jupiter has four large moons and numerous small ones)</p>	<p>axis, spherical, heliocentric, geocentric, hemisphere, season, tilt</p>		
<p>Forces</p>	<p>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. 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.</p>	<p>solid, liquid, gas, air, oxygen, powder, grain/ granular, crystals, ice/ water/ steam, water vapour, heated/ heating, cooled/ cooling, temperature, degrees Celsius, melt, freeze, solidify, melting point, molten, boil</p>		
<p>Evolution and Inheritance</p>			<p>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth</p>	<p>evolution suited/ suitable adapted/ adaptation offspring</p>

			<p>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. be introduced to the idea that characteristics are passed from parents to their offspring, i.e. different breeds of dogs, and what happens when, for example, labradors are crossed with poodles. appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer. find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.</p>	<p>characteristics vary/ variation inherit/ inheritance fossils</p>
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