Science

Progression of Knowledge

EYFS-Year 6

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Unit	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals, including humans	**Our Body** • Learn about different body parts and what they are used for • Consider how our bodies change from when we are a baby • Consider how we are all unique and different from one another **The Senses** • Discover how our senses interact with one another • Learn what our sense enable us to do **Animals** • Discover different types of animals - mammals, birds, insects • Observe different types of habitats around the world **Food** • Learn about where food comes from • Understand what makes a healthy diet • Identify animals used in food production	• 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	• 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 (water, food and air) • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	• 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	• 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	• Describe the changes as humans develop to old age	• 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
Rocket Words	**Our Body:** arm, leg, nose, hand, foot, ear, eye, mouth, **The Senses:** sight, taste, tongue, touch, sounds, hear, noise, trumpet, eye **Animals:** Bird, cow, sheep, goat, chicken, pig, farm, bear, breath, eat, drink, home, protection **Food:** cheese, milk, beef, bacon, pork,	**All about me:** head, body, brain, pupil, ear, sound, tongue, taste **All about animals:** Fish, amphibian, reptile, mammal bird, warm-blooded, cold-blooded, herbivore	**Growth:** nutrition, healthy, protein, carbohydrate, dairy, fat, exercise, hygiene **Life Cycles:** life cycle, foetus, womb, offspring, reproduction, transformation, metamorphosis, froglet	Cranium, mandible, rib cage, radius, pelvis, femur, fibula, scapula, vertebrae, coccyx, patella, tibia, biceps, abs, triceps, glutes, hamstrings protein, carbohydrate, mineral, vitamin	**Digestive System:** esophagus, stomach, spleen, small intestin, rectum, anus, appendix, colon, gall bladder, liver Teeth: incisor, canine, premolar, molar, herbivore, carnivore, omnivore	Offspring, foetus, dependent, adolescent, puberty, gestation, pregnant, toddler, prenatal, breeding, embryo, hormones	Circulatory system, BPM, diet, pulse, oxygenated, deoxygenated, atrium, ventricle, vessel, valve, diffusion, osmosis

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	eggs, lamb, wheat, flour, bread, cereal						
Famous Scientists				Adelle Davis (20th Century Nutritionist) Marie Curie (Radiation/X-Rays)	Ivan Pavlov (Digestive System Mechanisms) Joseph Lister (Discovered Antiseptics)		Justus von Liebig (Theories of Nutrition and Metabolism) Sir Richard Doll (Linking Smoking and Health Problems) Leonardo Da Vinci (Anatomy)
Linked Texts - reading across the curriculum		RSPB: My First Book of Garden Birds (Mike Unwin and Sarah Whittley) Snail Trail (Ruth Brown) Superworm (Julia Donaldson & Axel Scheffler)	The Gruffalo (Julia Donaldson) Meerkat Mail (Emily Gravett) No Place Like Home (Jonathon Emmett)	Funnybones (Janet and Allan Ahlberg) I Will Never Not Ever Eat a Tomato (Lauren Child) Goldilocks and the Three Bears (Samantha Berger)	Human Body Odyssey (Werner Holzwarth) Crocodiles Don't Brush Their Teeth (Colin Fancy) Wolves (Emily Gravett)		Pig-Heart Boy (Malorie Blackman) Skellig (David Almond) A Heart Pumping Adventure (Heather Manley) Hair in Funny Places (Babette Cole) Giant (Kate Scott) You're Only Old Once! (Dr. Seuss)
Living things and their habitats	• Discover the world of insects and invertebrates • Learn about their habitats • Go on an insect hunt		• 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 Identify and name a variety of plants and animals in their habitats, including microhabitats • Describe how animals obtain their food from plants and other animals, using the idea of a simple		• 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	• 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	• 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

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			food chain, and identify and name different sources of food				
Rocket Words	Insects, snail, worm, spider, honey, beetle, ladybird, fly		Reproduce, excrete, respire, habitat, microhabitat, survive, producer, consumer, organism, rainforest, endangered, biodiversity, ocean, ecosystem, desert, Arctic		Classification, vertebrate, invertebrate, mammal, reptile, fish, bird, amphibian, insect, warm-blooded, cold-blooded **Conservation:** migrate, monsoon, deforestation, biodiversity, emissions, pollution, pesticide, contaminate, drought, freshwater, marine sanctuaries, conservation areas	Living organism, naturalist, primatologist, metamorphosis, endangered, asexual, reproduction, fertilisation, placental mammal, monotreme mammal	Classification, microorganism, habitat, living organism, species, microscopic, ecosystem, kingdom, Linnaean System, cell
Famous Scientists					Cindy Looy (Environmental Change and Extinction) Jaques Cousteau (Marine Biologist)	David Attenborough (Naturalist and Nature Documentary Broadcaster) James Brodie of Brodie (Reproduction of Plants) Thomas Young (Theory of Light) Ibn al-Haytham (Light and our Eyes)	Carl Linnaeus (Identifying, Naming and Classifying Organisms)
Linked Texts – reading across the curriculum			Handa's Surprise (Eileen Brown) Once There Were Giants (Martin Waddell and Penny Dale)		The Vanishing Rainforest (Richard Platt) The Morning I Met a Whale (Michael Morpurgo) Journey to the River Sea (Eva Ibbotson)	Charlotte's Web (E.B. White) The Land of Neverbelieve (Norman Messenger) Mummy Laid an Egg (Babette Cole) Letters from the Lighthouse (Emma Carroll) The Gruffalo's Child (Julia Donaldson) The King Who Banned the Dark (Emily HaworthBooth)	Beetle Boy (M G Leonard) Insect Soup (Barry Louis Polisar) Fur and Feathers (Janet Halfmann)
Plants	• Explore plant • Learn about how plants are made and where they come from	• Identify and name a variety of common and wild and garden plants, including deciduous and evergreen trees	• Observe and describe how seeds and bulbs into mature plants • Find out and describe how plants need water,	• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers			

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	• Learn about how to look after plants • Understand why plants are so important • Learn some key vocabulary about different parts of plants	• Identify and describe the basic structure of a variety of common flowering plants, including trees	light and a suitable temperature to grow and stay healthy	• 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			
Rocket Words	Plant, seed, soil, water, stem, root, sunlight, garden	Seed, plant, stem, petal, deciduous, evergreen, fruit, vegetable	Temperature, sunlight, germinate, seed, bulb, seedling, flower, fruit,	Dispersal, photosynthesis, stigma, style, pistil, ovary, ovule, anther, filament, stamen, sepal, stem, flower, fruit			
Famous Scientists				Jan Ingenhousz (Photosynthesis) Joseph Banks (Botanist)			
Linked Texts - reading across the curriculum		A Little Guide to Wild Flowers (Charlotte Voake) The Things That I LOVE about TREES (Chris Butterworth) Harry's Hazelnut (Ruth Parsons)	Jack and the Beanstalk (Richard Walker) Ten Seeds (Ruth Brown) A Seed Is Sleepy (Dianna Aston)	The Story of Frog Belly Rat Bone (Timothy Basil Ering) The Hidden Forest (Jeannie Baker) George and Flora's Secret Garden (Jo Elworthy)			
Evolution and Inheritance							• 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,

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							• 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
Rocket Words							Inherit, adaptation, epiphytes, fossil, Mary Anning, palaeontologist, ichthyosaurus, Charles Darwin, evolved, natural selection, ancestor, Homo sapiens
Famous Scientists							Charles Darwin and Alfred Russel Wallace (Theory of Evolution by Natural Selection) Jane Goodall (Chimpanzees)
Linked Texts – reading across the curriculum							One Smart Fish (Christopher Wormell) The Molliebird (Jules Pottle) Our Family Tree (Lisa Westberg Peters) Moth (Isabel Thomas)
Materials	• Discover, by using the senses, the materials around them every day • Use vocabulary to describe different materials • Learn how materials can change • See where some materials come from • Begin to understand natural and man-made	• 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	• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, 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			• 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	

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		variety of everyday materials on the basis of their simple physical properties				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	
Rocket Words	Melt, wool, mirror, jumper, cold, freeze, ice, smooth	Material, fabric, wood, plastic, metal, property, opaque, transparent, strong, clay, brick, roof, slate, window pane, window frame, cotton	Material, property, obstacle, construction, stretchy, elastic, force, bend			**Changes:** Solute, solvent, reversible, evaporate, chemical change, effervescence, fair test, corrosion, combustion, extinguish, reaction, carbon dioxide **Properties:** conductive, magnetic, thermal, conduction, hardness, force, dissolve, solute, solvent, substance, filtering, evaporation	

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Famous Scientists						Spencer Silver, Arthur Fry and Alan Amron (Post-It Notes) Ruth Benerito (Wrinkle-Free Cotton)	
Linked Texts - reading across the curriculum		The Great Paper Caper (Oliver Jeffers) Who Sank the Boat (Pamela Allen) The Story of Cinderella (Walt Disney)	The Tin Forest (Helen Ward) Traction Man (Mini Grey) Three Little Pigs (Lesley Sims)			Itch (Simon Mayo) Kensuke's Kingdom (Michael Morpurgo) The BFG (Roald Dahl)	
Seasonal Changes	• Learn about the different seasons in the UK and the weather that cones with them • Measure and record different weather types • Consider how we need to be careful in different seasons	• Observe changes across the 4 seasons • Observe and describe weather associated with the seasons and how day length varies					
Rocket Words	Rain, snow, winter, summer, spring, autumn, wind, sun	Season, spring, summer, autumn, winter, hibernate, temperature, weather					
Famous Scientists							
Linked Texts - reading across the curriculum		Tree: Seasons Come, Seasons Go (Patricia Hegarty and Britta Teckentrup) One Year with Kipper (Mick Inkpen) After the Storm (Nick Butterworth)					
Rocks				• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock			

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				• Recognise that soils are made from rocks and organic matter			
Rocket Words				Chalk, flint, marble, limestone, sandstone, granite, igneous, metamorphic, sedimentary			
Famous Scientists				Mary Anning (Discovery of Fossils) Inge Lehmann (Earth's Mantle)			
Linked Texts - reading across the curriculum				The Pebble in My Pocket (Meredith Hooper) Stone Girl, Bone Girl (Laurence Anholt) The Street Beneath My Feet (Charlotte Guillain & Yuval Zommer)			
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		
Rocket Words					Thermometer, melting point, freezing point, boiling point, solid, liquid, gas, evaporation, particles,		

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					condensation, water vapour, substance		
Famous Scientists					Anders Celcius (Celcius Temperature Scale) Daniel Fahrenheit (Fahrenheit Temperature Scale/Invention of the Thermometer)		
Linked Texts - reading across the curriculum					Charlie and the Chocolate Factory (Roald Dahl) Once Upon a Raindrop: The Story of Water (James Carter) Sticks (Diane Alber)		
Earth and Space	• Understand what is in Space, • Understand what happens in Space • Find out about space travel by learning about rockets					• 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	
Rocket Words	Planet, Jupiter, Venus, Uranus, rocket, launch, star, travel					Heliocentric, geocentric, solar system, astronomy, terrestrial planet, gas giants, axis, orbit, moon, phase, waxing, waning	
Famous Scientists						Claudius Ptolemy and Nicolaus Copernicus (Heliocentric vs Geocentric Universe) Neil Armstrong (First man on the Moon) Helen Sharman (First British astronaut)	

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						Tim Peake (First British ESA astronaut)	
Linked Texts – reading across the curriculum						The Skies Above My Eyes (Charlotte Guillain & Yuval Zommer) George's Secret Key to the Universe (Lucy and Stephen Hawking with Christophe Galfard) The Way Back Home (Oliver Jeffers)	
Light				• 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 an opaque object • Find patterns in the way that the size of shadows change			• 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
Rocket Words				Absorb, reflect, bounce, opaque, shadow, umbra			Light, light source, reflected, variable, angle, mirror, opaque, transparent, sunshade, rotate, optical, spectrum
Famous Scientists				James Clerk Maxwell (Visible and Invisible Waves of Light)			
Linked Texts – reading across the curriculum				The Owl Who Was Afraid of the Dark (Jill Tomlinson) The Dark (Lemony Snicket)			

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				The Firework-Maker's Daughter (Philip Pullman)			
Forces	• Discover how we can apply force to an object • Identify how the nature and materials of an object can dictate how it responds to forces			• Compare how things move on different surfaces • Notice that some forces need contact between 2 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 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing		• 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	
Rocket Words	Push, pull, fast, slow, sink, float, press, suck			Magnetic, attraction repulsion, poles		Sir Isaac Newton, gravity, Galileo Galilei, parachute, water resistance, streamlined, buoyant, upthrust, friction, newton, lever, pulley	
Famous Scientists				William Gilbert (Theories on Magnetism) Andre Marie Ampere (Founder of Electro Magnetism)		Galileo Galilei (Gravity and Acceleration) Isaac Newton (Gravitation) Archimedes of Syracuse(Levers)	

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Linked Texts - reading across the curriculum				The Iron Man (Ted Hughes) Mrs Armitage: Queen of the Road (Quentin Blake) Mr Archimedes' Bath (Pamela Allen)		The Enormous Turnip (Katie Daynes) Leonardo's Dream (Hans de Beer) The Aerodynamics of Biscuits (Clare Helen Welsh)	
Electricity					• Identify common appliances that run on electricity • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • 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 conductor		• 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
Rocket Words					Circuit, conductor, insulator, cell, battery, component, voltage, current, bulb, switch, control, wind turbines, hydropower		Circuit, battery, electricity, resistor, variable resistor, dimmer switch, output, systematically, synchronised, signal, conductor, insulator
Famous Scientists					Thomas Eddison (First Working Lightbulb) Joseph Swan		

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					(Incadesecant Light Bulb)		
Linked Texts – reading across the curriculum					Until I Met Dudley (Roger McGough) Oscar and the Bird: A Book about Electricity (Geoff Waring) Electrical Wizard: How Nikola Tesla Lit Up the World (Elizabeth Rusch)		
Sound	• Explore loud and quiet sounds • Identify places where it is noisy and places where it is quiet				• 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		
Rocket Words	Sound, hear, noise, trumpet				Vibration, medium, source, energy, materials, reflect, volume, decibels, pitch, instruments, particles, sound source		
Famous Scientists					Aristotle (Sound Waves) Gailileo Galilei (Frequency and Pitch of Sound Waves) Alexander Graham Bell (Invented the Telephone)		

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Linked Texts - reading across the curriculum					Horrid Henry Rocks (Francesca Simon) Moonbird (Joyce Dunbar) The Pied Piper of Hamelin (Natalia Vasquez)		