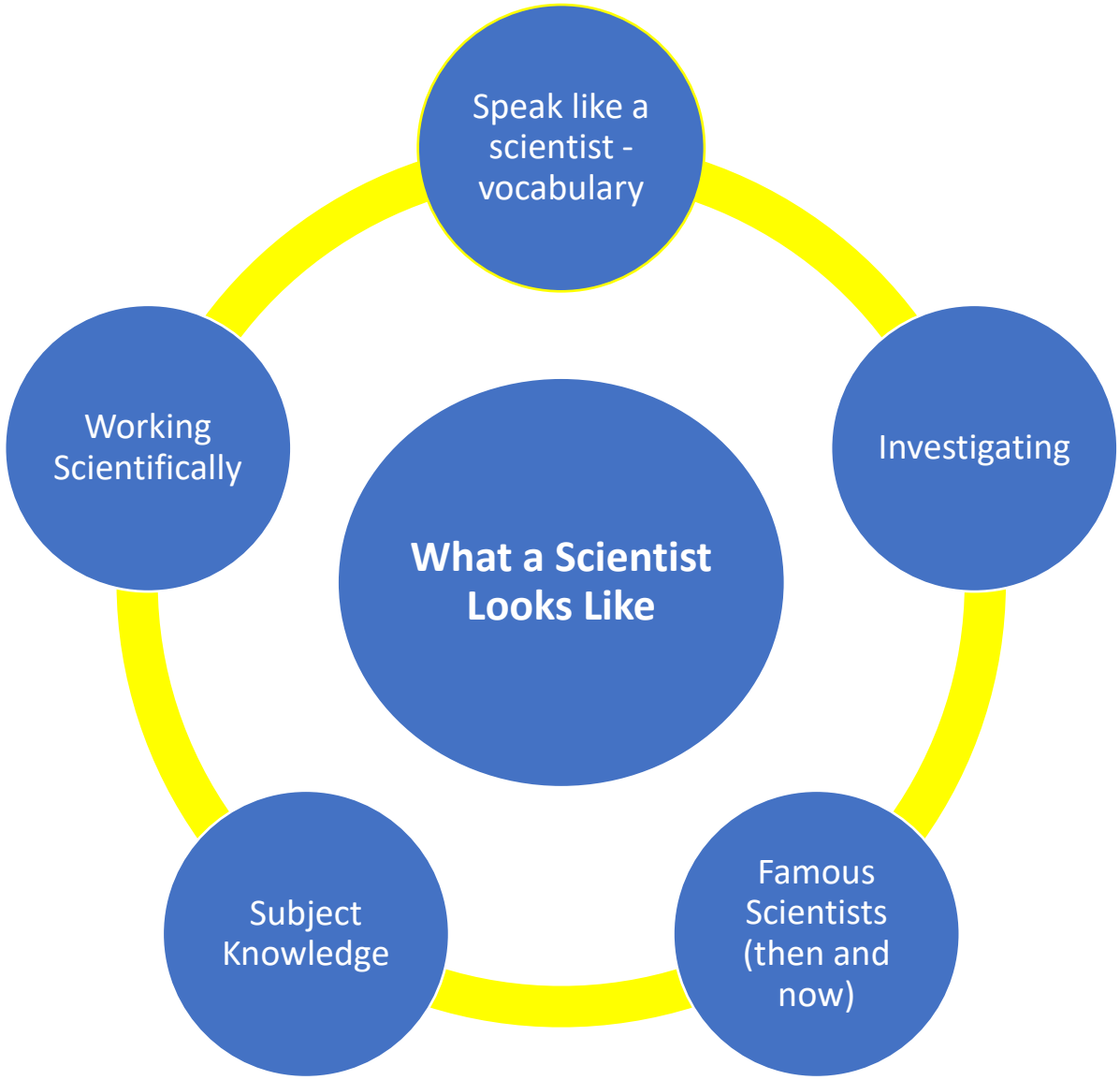
Speak like a scientist - vocabulary
Investigating
Famous Scientists (then and now)
Subject Knowledge
Working Scientifically
What a Scientist Looks Like

Science Progression in Domains of Knowledge

Working Scientifically Progression

EYFS	Year 1	Year 2
• Ask questions relating to why something happens • Guess what might happen next • Look at what happens you cause something • Arrange equipment to carry out a task • Understand how things may be grouped • Take part in group practical activities • Retell findings from practical activities • Understand why something happens • Explain what they have learned	• Use everyday language/begin to use simple scientific words to ask or answer a scientific question. • Begin to say what might happen in an investigation. • Observe objects, materials and living things and describe what they see. • Use simple, nonstandard equipment and measurements in a practical task • Sort and group objects, materials and living things, with help, according to simple observational features • Follow instructions to complete a simple test individually or in a group • Begin to record simple data. Talk about their findings and explain what they have found • Explain, with help, what they think they have found out. • Use every day or simple scientific language to ask and/or answer a question on given data	• Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways. • Begin to make predictions. • Observe something closely and describe changes over time. • Use simple equipment, such as hand lenses or egg timers to take measurements, make observations and carry out simple tests. • Decide, with help, how to group materials, living things and objects noticing changes over time and beginning to see patterns. • Do things in the correct order when performing a simple test and begin to recognise when something is unfair. • Gather data, record and talk about their findings, in a range of ways using simple scientific vocabulary. • Use simple scientific language to explain what they have found out. • Identify simple patterns and/or relationships using comparative language.

Science Progression in Domains of Knowledge

Working Scientifically

Year 3	Year 4
• Use ideas to post questions, independently, about the world around them. • Make predictions and begin to give a reason. • Make decisions about what to observe during an investigation. • Take accurate measurements using standards units. • Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships. • Discuss enquiry methods and describe a fair/comparative test. • Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts. • Draw, with help, a simple conclusion based on evidence from an enquiry or observation. • Gather, record and use data in a variety of ways to answer a simple question.	• Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence. • Make predictions and give a reason using simple scientific vocabulary. • Make systematic and careful observations. • Take accurate measurements using standard units and a range of equipment, including thermometers and data loggers. • Identify similarities/differences/changes when talking about scientific processes. Use and begin to create simple keys • Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables • Choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations). • Use recorded data to make predictions, pose new questions and suggest improvements for further enquiries. • Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence to support their findings.

Science Progression in Domains of Knowledge

Working Scientifically

Year 5	Year 6
• Raise different types of scientific questions and hypothesis. • Make predictions and give a reason using scientific vocabulary. • Plan and carry out comparative and fair tests, making systematic and careful observations. • Take measurements using a range of scientific equipment with increasing accuracy and precision. • Use and develop keys to identify, classify and describe living things and materials. • Plan a range of science enquiries, including comparative and fair tests. • Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models • Use a simple mode of communication to justify their conclusions one hypothesis. Begin to recognise how scientific ideas change over time. • Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.	• Pose/select the most appropriate line of enquiry to investigate scientific questions. • Make predictions and give a reason using scientific vocabulary. Base predictions on findings from previous investigations. • Make their own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests • Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately. Decide how long to take measurements for, checking Science Working Scientifically Skills Progression results with additional readings. • Identify and explain patterns seen in the natural environment. • Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests • Choose the most effective approach to record and report results, linking to mathematical knowledge. • Identify validity of conclusion and required improvement to methodology. Discuss how scientific ideas develop over time. • Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion.

Science Progression in Domains of Knowledge

Scientific Skills Vocabulary Progression					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
plan observe measure diagram table sort group compare similarity difference science Scientist data record	predict test research results pattern invention	variable fair method investigate record bar chart results table stopwatch conclusion trustworthy	control variable classify classification key proof ethics	model testable safety hazard temperature thermometer relationship estimate Line of best fit line data anomaly evidence advantage/disadvantage discovery	rate mean average secondary data source units scale evaluate reliable Theory affect

Science Progression in Domains of Knowledge

Scientific Vocabulary Progression – Year 1

Plants	Animals and their Needs	Taking Care of Earth	Seasons and Weather	Human Body	Materials and Magnets
growth garden plants wild plants deciduous evergreen fruit seed bulb flower leaf roots stem trunk	Animal names (for birds, fish, amphibians reptiles, mammals invertebrates) features legs wings fur tail underwater air amphibian mammal teeth carnivore herbivore omnivore diet pets domestic wild food shelter medicine responsibility gills, fins, scales beaks, wings, claws, feathers	care Earth world resources natural logging flooding pollution natural manufactures renewable Non-renewable fossil fuels deforestation construction extinction erosion recycle grazing biodiversity chemicals rubbish waste fumes landfill conservation	season spring Summer autumn winter wind rain snow axis tilt orbit rain gauge wind vane thermometer precipitation meteorologist Rainfall accurate cloud float dark fluffy storm forecast hurricane	hearing touch taste smell sight senses body parts (names of) iris eyelid eyelash pupil vision reflection contact lenses telescope microscope ear eardrum deaf hearing aid sound / soundwave taste buds scent sweet salt sour Bitter blind	everyday material wood plastic glass metal rock soft/hard dark/bright transparent/opaque rough/smooth waterproof/absorbent thick/thin bendy/stiff shiny/dull properties magnet attract repel force invisible Magnetism

Science Progression in Domains of Knowledge

Scientific Vocabulary Progression – Year 2

Astronomy	Materials and Matter	Plants	Electricity	Living Things and Environment	Human Body
planet Mercury Venus Mars Earth Jupiter Saturn Uranus Neptune Pluto solar system spherical orbit rotate axis waxing waning crescent constellation star The Great Bear Plough Orion robot mission space exploration astronaut	strong flimsy engineer inventor magnify microscope particles solid liquid squash twist stretch matter shape pour bonds	germinate energy nutrient life cycle shoot	electricity energy appliance battery mains dangerous safety wire circuit current Bulb flow conduct insulate	germinate energy nutrient life cycle shoot	survive scarce offspring drought pollution skeleton spine rib bones kneecap muscle organs protect joint digestion stomach intestine chew blood energy waste process nutrition

Science Progression in Domains of Knowledge

Scientific Vocabulary Progression – Year 3					
Forces and Magnets	Rocks	The Human Body	Light	Cycles of Nature	Plants
force push pull contact force gravity magnetism friction reduce increase magnetic field	rock mineral crumbly geologist sediment layers metamorphic pressure igneous volcano magma lava permeable impermeable fossil fossilised palaeontologist soil decay organic matter sandy chalky clay	voluntary/involuntary bicep intestine heart control contract relax endoskeleton femur cranium skull ligaments joint spinal column ribs scapula Pelvis nerves nervous system cerebllum minerals balanced diet vitamins	light darkness absence source retina transmit reflect concave convex shadow	seasons deciduous evergreen sap energy ripen mature decay dormant hibernate migrate	female male petal pollen pollination seed formation anther stigma reproduce disperse support Transport absorb

Science Progression in Domains of Knowledge

Scientific Vocabulary Progression – Year 4					
Electricity	States of matter	Sound	Human Body	Classification of Plants and humans	Ecology
electric shock frayed circuit flow cell buzzer switch component conductor filament Thomas Edison Lewis Latimer insulate/insulator Rubber	gas particles steam water vapour humidity evaporate condenses droplets vapour precipitation gravity status cumulus cirrus collection groundwater reservoir water source	vibration soundwaves sound barrier supersonic volume pitch vocal cord larynx cartilage ear canal/drum/bones hammer anvil	cell organs tissue incisor canine premolar molar omnivore enamel salivary glands taste buds oesophagus small/large intestine appendix muscle anus vertebrates/invertebrates skeleton cold/warm blooded amphibians metamophosis	Classification Botanist Photosynthesis Fungi Algae Ecosystem organism	habitat microhabitat polar rainforest desert producer consumer decomposer organisms predator prey ecosystem native exotic pollution emissions filter chemicals

Science Progression in Domains of Knowledge

Scientific Vocabulary Progression – Year 5

Astronomy	Forces	Living Things and Habitats	Materials	Human Body - Puberty	Meteorology
stronomy Theorise The Big Bang universe matter galaxy space light year mass matter black hole Ceres terrestrial Jovian (recap planets in solar system) satellite cellestial gibbous Neil Armstrong Buzz Aldrin Milky Way Proxima Centuari Andromeda galaxy Cluster Laniakea	increase decrease friction air resistance wind resistance streamline parachute upthrust float buoyancy surface area water resistant lever pulley gear fulcrum pivot	reproduction death interconnection birth mature incubate larvae gamete fertilisation sepals stamen pistil anther ovary Pollination naturalist primate	soluble insoluble flexible conductor conductivity (Recap properties of materials) thermal insulator control mixture dissolve solution solvent solute solubility substance separate sieve filter evaporate reversible irreversible change reaction	gestation puberty conception offspring embryo adolescence hormones menstruation aging lifespan metabolism wean growth stage life expectancy (terminology of parts of the genitals linked to puberty)	meteorology atmosphere troposphere stratosphere mesosphere thermosphere exosphere ozone ozone layer depletion stratosphere ultraviolet (UV) radiation Montreal Protocol chlorofluorocarb ons (CFCs) air mass Maritime climate Polar maritime polar continental polar maritime returning polar maritime tropical continental tropical maritime anemometer

Science Progression in Domains of Knowledge

Scientific Vocabulary Progression – Year 6					
Evolution	Reproduction	Light	Electricity	Classification of Living Things	Human Body
prehistoric sedimentary rock Mary Anning offspring variation inheritance environmental mutation DNA adapt adaptation biomes evolution natural selection species anthropology naturalist extinct placental mammal marsupial mammals	reproduce asexual cell division cloning regeneration fertilisation embryo sepals anther pistil ovary pollination symbiotic exocarp mesocarp endocarp sperm zygote foetus	illumination artificial source optic nerve cornea lens retina prism refract white light rainbow periscope 45° angle	current components insulator conductor series circuit short circuit volts voltage data logger Electrical engineer complete incomplete kill switch	classification taxon, taxonomy protist fungi bacteria prokaryotes unicellular multicellular cell membrane cytoplasm nucleus vacuole mitochondria cell wall chloroplast chlorophyll kingdom phylum genus arachnid cnidarian arthropod annelid	atrium (atria) ventricle(s) valves aorta pulmonary circuit systemic circuit blood vessels arteries veins capillaries diffusion waste products blood pressure heart rate pulse oxygen Diet exercise drugs alcohol red blood cells white blood cells haemoglobin platelets plasma

Science Progression in Domains of Knowledge

Scientists					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Helen Keller John Dunlop	Abd al-Rahman al-Sufic George de Mestral Edward Jenner Louis Pasteur	George Washington Carver Sir Isaac Newton Joseph Banks Captain Cook Agnes Arber	Thomas Edison Lewis Latimer Carl Linneaus	David Attenborough Jane Goodall Sir Isaac Newton	Charles Darwin Alfred Wallace Granville T Woods Carl Linneaus