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| EYFS | Characteristics of effective learning | Early Learning Goals |
| Enquiry Skills | Show curiosity about objects, events and people Questions why things happen  Engage in open-ended activity  Take a risk, engage in new experiences and learn by trial and error  Find ways to solve problems / find new ways to do things / test their ideas  Develop ideas of grouping, sequences, cause and effect Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world  Use senses to explore the world around them  Make links and notice patterns in their experiences Create simple representations of events, people and objects  Build up vocabulary that reflects the breadth of their experience | Choose the resources they need for their chosen activities Handle equipment and tools effectively  Answer how and why questions about their experiences Make observations  Develop their own narratives and explanations by connecting ideas or events  Explain why some things occur and talk about changes |
| Knowledge and understanding of the world | Know about the similarities and differences in relation to places, objects, materials and living things.  They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes. | |

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| Working Scientifically | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Plan | Ask simple questions when prompted  Suggest ways of answering a question | Ask simple questions Recognise that questions can be answered in different ways | Ask relevant questions when prompted Use different types of scientific enquiry to answer them. Set up simple and practical enquiries, comparative and fair tests with some support. | Ask relevant questions. Use different types of scientific enquiries to answer their questions Set up simple and practical enquiries, comparative and fair tests | Plan different types of scientific enquiries to answer questions. With prompting, recognise and control variables where necessary | Plan different types of scientific enquiries to answer questions Recognise and control variables where necessary |
| Do | Make relevant observations using simple equipment Conduct simple tests, with support Identify and classify with guidance | Observe closely, using simple equipment Perform simple tests Identify and classify | Make systematic and careful observations, using simple equipment Use standard units when taking measurements | Make systematic and careful observations using a range of equipment, including thermometers and data loggers Take accurate measurements using standard units, where appropriate | Select, with prompting, and use appropriate equipment to take readings Take precise measurements using standard units Begin to understand the need for repeat readings | Use a range of scientific equipment to take measurements Take measurements with increasing accuracy and precision Take repeat readings when appropriate |
| Record | Gather and record data | Record and communicate their findings in a range of ways and begin to use simple scientific language Gather and record data to help answer questions | With modelling and guidance, gather, record, classify and present data in a variety of ways to help to answer questions With prompting, use various ways of recording, grouping and displaying evidence and suggest how findings may be tabulated | Gather, record, classify and present data in a variety of ways to help to answer questions Record findings using simple scientific language, drawings and labelled diagrams Record findings using keys, bar charts, and tables | Take and process repeat readings Record data and results Record data using labelled diagrams, keys, tables and charts Use line graphs to record data | Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar charts and line graphs |
| Review | Recognise findings Use their observations and ideas to suggest answers to simple questions | Use their observations and ideas to suggest answers to simple questions | With prompting, suggest conclusions from enquiries Suggest how findings could be reported. Suggest possible improvements or further questions to investigate | Report on findings from enquiries, including oral and written explanations, of results and conclusions. Report on findings from enquiries using displays or presentations Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions | Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships. With support, present findings from enquiries orally and in writing Suggest further comparative or fair tests | Report and present findings from enquiries, including conclusions and causal relationships. Report and presents findings from enquiries in oral and written forms such as displays and other presentation Report and present findings from enquiries, including explanations of, and degree of, trust in results Identify scientific evidence that has been used to support or refute ideas or arguments Use test results to make predictions to set up further comparative and fair tests |
| Vocabulary | Questions, answers, equipment, gather, measure, record, results, sort, group, test, explore, observe, compare, describe, similar/ities, different/ces, beaker, pipette, syringe | Previous vocab plus observe changes over time, notice patterns, secondary sources, hand lenses, egg timers, identify, classify, data, | Previous vocab plus scientific enquiry changes over time, notice patterns, secondary sources, comparative tests, fair tests, careful, accurate, observations, equipment, gather, measure, record, data, evidence, results, keys, bar charts, table, results, conclusions, predictions, support, thermometers | Previous vocab plus enquiry types increase, decrease, identify, classify, order, notice patterns, relationships, appearance, present results, data loggers | Previous vocab plus, notice patterns, relationships, independent variable, dependent variable, controlled variable, accuracy, precision, degree of trust, classification keys, scatter graphs, line graphs, causal relationships, support/refute, data loggers | Previous vocab plus opinion/fact, confidently name scientific enquiry types |

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| Progression | | | | | | |
| Area of study | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Animals including humans | to be able to name and identify a range of animals in each group e.g. name specific birds and fish  To know that Animals vary in many ways having different structures e.g. wings, tails, ears etc. They also have different skin coverings e.g. scales, feathers, hair. These key features can be used to identify them.  Animals eat certain things - some eat other animals, some eat plants, some eat both plants and animals.  Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense | Understand that animals, including humans, have offspring which grow into adults 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.  To begin to draw and recognise life cycles of animals. | 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. - (see also Evolution and inheritance) |
| Vocabulary | Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak | Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene | Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints | Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain | Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty | Circulatory system, heart, blood, blood vessels, pumps, oxygen, carbon dioxide, lungs, nutrients, water, diet, exercise, drugs, lifestyle, evolution, suited/suitable, adapted, adaptation, offspring, reproduction, variation, inherit, inheritance, fossils |
| Plants | Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees. | Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy | Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers  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 | See living things and their habitats. | See living things and their habitats. | See living things and their habitats. |
|  | Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud  Names of trees in the local area  Names of garden and wild flowering plants in the local area Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem | Seeds, Bulbs, Water, Light, Temperature, Growth, shoot, seedling | Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal – wind dispersal, animal dispersal, water dispersal  Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, |  |  |  |
| 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 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 |
|  |  |  |  | Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate | Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings | Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering |
| 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, 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 |
|  |  |  |  |  |  | Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils |
| Everyday Materials | 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 variety of everyday materials on the basis of their simple physical properties | 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 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 | 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 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 |  |
|  | Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through | Names of materials – increased range from year 1  Properties of materials - as for year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid  Shape, push/pushing, pull/puling, twist/twisting, squash/squashing. Bend/bending, stretch/stretching |  | Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle | Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material |  |
| 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  Recognise that soils are made from rocks and organic matter |  |  |  |
|  |  |  | Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil |  |  |  |
| Seasonal Changes | Observe changes across the four seasons  Observe and describe weather associated with the seasons and how day length varies |  |  |  |  |  |
|  | Weather (sunny, rainy, windy, snowy etc.), seasons (Winter, Summer, Spring, Autumn), sun, sunrise, sunset, day length |  |  |  |  |  |
| Light | Name sources of light  Know shadows are the blocking of 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 |
|  | Light, source, shadow, block |  | Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous |  |  | As for year 3 plus straight lines, light rays. |
| Sound |  | Observe and name variety of sound  To investigate how sound changes over distance |  | 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 |  |  |
|  |  | Loud, quiet, increase, decrease, source |  | Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation |  |  |
| 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 conductors |  | 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 |
|  |  |  |  | Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol |  | Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage |
| 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, and identify some magnetic materials  Describe magnets as having two poles  Predict whether two 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 |  |
|  |  |  | Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole |  | Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears |  |
| Earth and Space |  |  |  |  | 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 |  |
|  |  |  |  |  | Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune) spherical, solar system, rotates, star, orbit, planets |  |