

Malvern Primary School– Science Curriculum— Love to Investigate Links

Key: **Included in LE** **Stand alone Unit**



Aspect	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Into the Woods FOCUS: Plants (B) Seasons (P) Are all leaves the same?	Marvellous Mixtures FOCUS: Everyday materials (C) What shape is a bubble?	Ages Ago! FOCUS: Light (P) What are sunglasses for?	The Sound Collector FOCUS: Sound (P) How far can sound travel?	Walk like an Egyptian FOCUS: Materials (C) Why does milk go off?	We'll Meet Again: Sandbags & Sirens FOCUS: Human body (B) What can your heart rate tell you?
Autumn 2		Fire Fire! Animals including humans (B) How do germs spread?	Extreme Earth FOCUS: Rocks (C) How do fossils form? YES	Route 66 FOCUS: Electricity (P) What conducts electricity?	The Sky at Night FOCUS: Earth & space (P) How do rockets lift off? Why do planets have craters?	Mayan Mysteries FOCUS: Light (P) Is green really green?
Spring 1			There are places I'll remember... FOCUS: Human body (B) What are our joints for?	Journey Through the Human Body FOCUS: Animals including humans (B) How does toothpaste protect teeth?	Terrible Tudors? FOCUS: Forces (P) Why are zip wires so fast?	Call of the Wild FOCUS: Living things and their habitats (B) Where do wild plants grow?
Spring 2		Shipmate, Navigate! No science	Iron Man FOCUS: Forces & magnets (P) Why do magnets attract and repel?	Why Rome was not Built in a Day FOCUS: Living things and their habitats (B) What do squirrels eat?	When I Grow Up FOCUS: Animals including humans (B) Do we slow down as we get older?	Creative Curations FOCUS: Light (P) What is a reflection?
Summer 1	Memory Makers FOCUS: Seasons (P)	Critique Creatures FOCUS: Living things and their habitats (B) What is the lifecycle of a butterfly?	Circle of Life FOCUS: Plants (B) Is it safe to eat? What are flowers for?	A Norman Conquest FOCUS: Animals including humans (B) Can worms sense danger?	Cool Chemistry FOCUS: Materials (C) What materials conduct heat? Why does a compass always point north?	This Me FOCUS: Evolution and inheritance (B) How does inheritance work?
Summer 2	All Creatures Great and Small FOCUS: Animals including humans (B) What is camouflage? Investigation	Plant a little seed... FOCUS: Plants (B) How do plants grow in different environments?	Ancient Greek legacy FOCUS: Animals including humans (B) How do worms move?	Mountain High FOCUS: States of matter (C) Why does it flood?	Fantastic Beasts FOCUS: Living things and their habitats (B) What is the lifecycle of a mealworm?	Back to the Future FOCUS: Electricity / Light (P) Can fruit light a bulb?

Malvern Primary School– Science Curriculum (Working Scientifically)



Aspect	Foundation Stage	Year 1 & Year 2	• Year 3 & Year 4	• Year 5 & Year 6
Working Scientifically	<ul style="list-style-type: none"> I can make sense of my physical world and my community through exploration. I can Make observations and drawings I can explore similarities and differences between the natural world around me and contrasting environments. I am beginning to ask simple scientific questions. I can Explore changes. 	<ul style="list-style-type: none"> I can ask simple scientific questions and I recognise that they can be answered in different ways. I can use simple equipment to make observations and identify and classify things. I can perform simple tests. I can identify and classify I can use observations and ideas to suggest answers to questions. I can gather and record data to help answer questions 	<ul style="list-style-type: none"> I can use observations and knowledge to ask and answer different types of enquiries. I can set up a simple enquiry to explore a question. I can set up a test to compare two things. I can make careful and accurate observations. I can record, classify and present data in different ways. I can set up a fair test and explain why. I can use equipment to make measurements. I can record findings using scientific language, drawings, diagrams, keys, bar charts and tables. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can use results, to draw conclusions, suggest improvements and raise further questions. I can identify similarities and differences in processes. I can use scientific evidence to answer questions / support findings. 	<ul style="list-style-type: none"> I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I can use test results to make predictions to set up further comparative and fair tests. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. I can identify scientific evidence that has been used to support or refute ideas or arguments. I can use the outcome of test results to make predictions and set up a further comparative fair test. I can explain casual relationships in an enquiry.
Working Scientifically Vocabulary	Describe, test, explain, explore, enquire, compare and change.	Answer, compare, describe, equipment, gather, measure, pipette, results, similarities, sort, syringe, properties, observe, test, magnifying glass, object, record, equipment, patterns, pictogram, tally chart, venn diagram, question, scientific enquiry, group, data, findings	Accurate, bar chart, comparative test, conclusion, data logger, evidence, microscope, present, results, secondary sources, thermometers, prediction, measurement, enquiry, dependent variable, independent variable, fair test, similar, theory, hypothesis, classify,	Casual relationship, classification key, classify, controlled variable, degree of trust, dependent variable, independent variable, keys, precision, scatter graphs, variables, line graph, relationship, outlier

Malvern Primary School – Science Curriculum Progression



Aspect	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Physics	<p>Weather I can understand that the weather changes and recognise the daily weather.</p>	<p>Weather I can describe the daily weather.</p>	<p>Seasonal Changes I can observe changes across the four seasons. I can observe and describe weather changes in relation to seasons and varying day length. I can correctly sequence the seasons. I can compare similarities and differences between seasons. I can discuss the climate during each season. Au1, Spr1, Sum1</p>		<p>Light I can understand light is needed to see and reflects from surfaces and dark is absence of light. I have an awareness of dangers of sun light. I can recognise how shadows are formed, finding patterns in size. Au1 Forces and magnets I can explore friction and movement on different surfaces. I can explain how magnetic forces act at a distance. Observe magnets attracting and repelling materials. I can identify and name some magnetic materials. Group materials in relation to magnetic attraction. Predict and describe how magnetic poles attract and repel. Spr2</p>	<p>Sound Explore how vibrations make sound and they travel through the air. Find patterns between: Pitch and object features that created the sound and volume and strength of vibrations. Explore how volume changes over distance. Recognise that vibrations from sounds travel through a medium to the ear. Au1 Electricity Identify electric appliances Construct and identify a simple series circuit. Explore lighting a lamp dependent on a complete loop. Understand how switches work. Recognise some common conductors and insulators. Au2</p>	<p>Forces Explain the force of gravity pulling towards Earth. Describe effects of friction, air & water resistance. Explore levers, pulleys and gears having a greater effect due to smaller force. Spr1 Earth and Space Describe movement of Earth and planets relative to the sun. Describe movement of the Moon. Describe the sun, earth and moon as approximately spherical bodies. Explain the Earth's rotation in relation to day and night. Au2</p>	<p>Light Understand how light travels in a straight line for us to see objects that give out/reflect light. Explain how light helps us see. Explore shadow formation Au2/Spr2/Sum2 Electricity Construct complex circuits using a range of components, identifying and correcting errors. Explore changes in circuits through varying components. Use recognised symbols in a diagram. Explain how voltage of cells changes brightness of lamps and volumes of a buzzer. Sum2</p>
Chemistry	<p>Everyday materials To identify and name colours Au1</p>	<p>States of Matter Explore colour mixing. Au1 States of Matter To observe how chocolate melts and water freezes. Sum1</p>	<p>Everyday materials Distinguish between an object and the material it's made from. Identify and name a range of materials (wood, plastic, glass, metal, water and rock) Describe the physical properties of a variety of everyday materials. Compare and group materials according to physical properties. I can test which materials float and sink. I can determine which materials are absorbent. Spr2</p>	<p>Uses of every day materials Identify/compare the uses 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. I can identify if these changes are reversible or irreversible. I can explain how materials are used for more than one thing. I can explore if materials can be adaptable or not. I can compare the suitability of a variety of everyday materials for particular uses. A1, Sp1</p>	<p>Rocks Compare and group various rocks based on appearance and physical properties. Explain fossil formation including why they are generally formed from sedimentary rock. Understand soils are made from rocks and organic matter. I can explain what happens when rocks cause resistance, including what changes occur in water. Au2</p>	<p>States of matter Compare and group solids, liquids and gases. Understand changing of states when being heated or cooled, measuring temperatures. Explore the water cycle and the part of condensation and evaporation. Sum 2</p>	<p>Properties of materials Compare/group materials based on properties. Explain the property difference of solids, liquids and gases and how states can be changed Explore how solutions are created through dissolving. Explore which materials conduct heat and why Explore forms of separating mixtures. Give uses of everyday materials based on fair tests. Demonstrate dissolving, mixing and 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. Au1 Sum1</p>	

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Biology	<p>Animals To name a range of woodland, farm and zoo animals. Aut2/Sum2</p> <p>Plants To observe how flowers grow Sp2 / Sum 1</p> <p>Plants To name a range of common and exotic fruits. Sum 2</p> <p>Humans Begin to recognise that people get older on their birthdays. Sp2</p>	<p>Animals To explain that some animals are different (nocturnal/diurnal) To explore how farm yard animals have similarities and differences. Aut2/Sum2</p> <p>Plants To observe how seeds grow Sp2 / Sum 1</p> <p>Plants To name a range of vegetables. Sum 1</p> <p>Humans To explain how they have grown and changed. Sp2</p>	<p>Plants Identify / name common wild/garden plants including deciduous and evergreen trees. Describe the basic structure of a variety of common flowering plants including trees. Aut1</p> <p>Animals, including humans Name common animals including fish, amphibians, reptiles, birds and mammals. Identify/name common animals that are carnivores, herbivores and omnivores. Describe/compare structure of common animals, including how their teeth have adapted. I can name animals which camouflage and explain how this adaptation helps. Identify, name, draw and label the basic parts of the human and say which body part links to each sense. I can use my senses to explore and identify sounds, smells and textures. Au2 & Sum2</p>	<p>Living things and their habitats Explore and compare differences between living, dead and never alive. Identify suitable habitats, describing how they provide for basic needs for animals/plants and how these depend on each other. Identify plants/animals in their habitats including microhabitats. Use a simple food chain to show animals obtain food from plants and other animals. I can identify different sources of food. Using a classification key I can sort minibeasts according to their appearance, habitat and travel. I can explain how different minibeasts adapt their appearance and state what other animals use camouflage. Sum1</p> <p>Plants Observe and describe growth of seeds/bulbs using appropriate vocabulary. I can experiment how seeds grow in different environments. Describe how plants need water, light and a suitable temperate to grow healthy. I can explain how different plants are suited to their habitats. Sum2</p> <p>Animals, including humans Notice animals/humans have offspring. Identify the different stages of human growth. I can identify the stages of growth of a butterfly and other animals. A2, Sum1 Describe basic needs for survival and the importance of exercise, healthy eating (water, food and air) and hygiene. A2</p>	<p>Plants Describe functions of parts of flowering plants (root, stem/trunk, leaves and flowers). Explore what is required for life and growth and how they can vary. Investigate water transportation in plants. I can explore where plants and animals get their energy from. Explore plant life cycle (pollination, seed formation and seed dispersal). I can explain the different ways that plants disperse their seeds. Sum1</p> <p>Animals, including humans Identify humans and some animals have skeletons/muscles for movement, protection and support. Identify that animals and humans needs the right types of nutrition (from what they eat). Spr1 Sum2</p>	<p>Animals, including humans Describe basic functions of human digestive system. Identify types of teeth and their functions. Construct and interpret a variety of food chains. Spr1 Sum 1</p> <p>Living things and their habitats Group living things in various ways. Use classification keys to group and identify living things in the environment. Understand how environments change and dangers to living things. Describe how animals have adapted to live in mountainous climates Explain how zonation of plant life shows physical geography of the world Spr2/Su2</p>	<p>Living things and their habitats Describe difference in life cycle of a mammal, amphibian, insect and bird. Describe reproduction in plants and animals (difference between sexual and asexual reproduction) Explore the life cycle of flowering and non-flowering plants Describe the importance of bees to plant production Investigate how plants can be grown from parts of other plants Sp2/Sum2</p> <p>Animals, including humans Describe changes of humans as they grow old. Sp2/Sum2</p>	<p>Living things and their habitats Explore what plant and animal species are found in polar regions. Describe classification according to common observable characteristics including microorganisms, plants and animals. Give reasons for classifying based on characteristics. Construct food chains and webs based on animals found in the polar regions. Spr1</p> <p>Animals, including humans Describe functions of human circulatory system, heart, blood vessels and blood. Understand impact of health choices. Explore nutrient transportation. Aut1</p> <p>Evolution and inheritance Explain change of time using fossils. Identify vary in offspring produced by living things. Explore adaptation leading to evolution in plants and animals, including adaptation due to climate change and global warming. Sum1</p>

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Physics	Weather - hot, sunny, cold, wet, snow, rain, hail, rainbow and thunderstorm	Weather - hot, sunny, cold, freezing, wet, snow, rain, hail, cloudy, mist, rainbow and thunderstorm	Seasons - Seasons, temperature, hot, cold, freezing, melting, sun, clouds, cloudy, frost, sleet, weather, wind, snow, ice, lightning, thunder, fog, mist, hail, rainbow, day length, daylight, change, autumn, winter, spring, summer. Au1, Spr1, & Sum1		Light - Light source, darkness, image, mirror, reflect, opaque, translucent, transparent, shadow, labelled diagram, data logger, fair test. Au1 Magnetics and Forces - Forces - magnetic, non-magnetic, pole, north, south, gravity, friction, resist, attraction, repulsion. Spr2	Sound - particle, vibration, percussion instrument, wind instrument, string instrument, frequency, volume, pitch, vacuum, bass, tune, sound source, fainter, muffle Au1 Electricity - Appliances, electricity, electrical circuit, cells, wires, bulbs, switches, motors, buzzers, battery, loop, conductors, insulators, components, precautions and safety. Au2	Earth and space - planet, satellite, sphere, solar system, eclipse, star, universe, constellation, axis, celestial body, Moon, rotating, lunar, solar, telescope, rotation, dwarf planet, astronomical clocks, shadow clocks, sundials. Au2 Forces - acceleration, air resistance, buoyancy, effort, force meter, gravity, mass, Newton, pivot, rigid, gears, lever, friction, pulley, unsupported, water resistance, weight, mechanism Spr1	Light - angle of incidence, angle of reflection, refraction, spectrum, translucent, periscope Au2/Sp2/Sum2 Electricity -- series circuit, parallel circuit, resistance, voltage, terminal, loose connection, component Sum2
Chemistry	Materials - Colour Red, yellow, pink, green, orange, purple, blue, white. Au1	States of Matter - Colour, mix, consolidate and extend colours from Nursery, describe, test, explain, explore, compare, test, freeze, melt, describe, explain, explore, change, hot, cold Au1 / Sum1	Materials - Material, wood, plastic, glass, metal, water, rock, properties, object, group, hard/soft, stretchy/stiff, shiny/dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent/not absorbent, opaque/transparent Spr2	Materials - material, shape, solid, change, squash, bend, twist, stretch, purpose, object, suitability, purpose, use, wood, metal, plastic, glass, brick, rock, paper, cardboard A1, Sp1	Rocks - extinction, igneous, metamorphic, sedimentary, palaeontologist, weathering, rotten rock, crust, tectonic plates, scavengers, fossil, decay, matter, observation and fair test. Au2	States of matter - bond, condensation, evaporation, reversible, boiling point, melting point, liquid, gas, thermometer, water cycle, continuous precipitation, transpiration, surface run off process, sublimation, granular, water cycle, water vapour Sum 2	Materials - Hardness, solubility, transparency, conductivity, waterproof, absorbent, opaque, transparent, translucent, texture, conduct, insulate, electrical, magnetic. Solids, liquids, gases, substance, separated, powder, filtering, sieving, reversible, irreversible state, burning. Change state, melting, freezing, boiling, dissolve, soluble, insoluble, solvent, solute, solution, saturation, thermal, chemistry, change state, condensing, particle, residue, rusting, and thermal conductivity. Au1/Sum1	

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Biology	<p>Animals inc humans - pig, cow, cockerel, sheep, donkey, tarantula, owl, hamster, hedgehog, rabbit, giraffe, camel, elephant, lion, snake, monkey, frog, grow, tall, change, younger and older.</p> <p>Au2 & Sum2</p> <p>Plants - Flowers, change, different, same, water, sun, soil, Mangoes, pineapples, banana, guava, avocado, passion fruit And tangerine</p> <p>Spg2/Sum1</p>	<p>Animals inc humans - tarantula, owl, hamster, hedgehog, rabbit, nocturnal, diurnal, different, paws, hooves, large, soft, small, tall, short, sheep, lamb, donkey, Cockerel</p> <p>Dear, Cow, calf, Pig, Piglet, goose, bearded dragon, snake, change, grow, tall, short, baby, child and adult</p> <p>Au2 & Sum2</p> <p>Plants - Seed, sun, water, soil, enquire, describe, explain, explore, flower, tree, cabbage, leek, potatoes, onions, carrots, beetroot, cauliflower and broccoli.</p> <p>Au1</p>	<p>Animals inc humans - Carnivore, herbivore, omnivore, skeleton, fossil, teeth, animal, similar, different, extinct, humans, animals, senses, compare, similar, different, birds, fish, mammals, reptiles, amphibians, pets, groups, describe, structure, camouflage, body parts</p> <p>Au2 & Sum2</p> <p>Plants - living, environment, garden, wild, flowers, blossom, plant, tree, structure, roots, stem, leaves, petals, fruit, trunk, branch, bulb, seed, similar, different, bark, blossom, evergreen, deciduous, oak, holly, pine. Au1</p>	<p>Living things and their habitats- habitat, microhabitat, shelter, energy, food chain, source, environment, depend, living, alive, dead, non-living, needs, plant, animal, healthy Sum1</p> <p>Plants bulb, seed, temperature, shoot, growth, seedling, compare, describe, equipment, gather, measure, results, similarities, sort, observe, test, magnify glass, object, record, deciduous, evergreenSum2</p> <p>Animals inc humans—reproduction, offspring, adult, baby, toddler, teenager, elderly, basic needs, hygiene, exercise, medicine, survival, healthy, balanced diet, food, air, water, nutrition, growth, egg, caterpillar, pupa, butterfly. Sp2</p>	<p>Plants—Leaves, flowers, blossom, fruit, roots, seed, trunk, branches, stem, sepal, petal, stigma, style, anther, ovary, ovule</p> <p>Air, light, water, nutrients, soil, Pollen, pollination, seed formation, dispersal, reproduce Sum1</p> <p>Animals, including humans - , Humans, food, feeding, balanced, diet, carbohydrates, proteins, fats, vitamins, minerals, fibre, water. Classify, skeleton, support, protection, vertebrate, invertebrate, exoskeleton, hydrostatic skeleton, muscles, tendons, joints</p> <p>Spr1</p> <p>Humans, food, feeding, balanced, diet, fibre, proteins, fats, vitamins, minerals, water, classify, carbohydrates, skeleton, support, protection, vertebrate, invertebrate, exoskeleton, hydrostatic skeleton, muscles, tendons, joints.</p> <p>Sum2</p>	<p>Animals inc humans - digestion, digestive system, excretion, anus, , small intestine, large intestine, stomach, rectum, oesophagus, tongue, saliva, acid, bile, enzymes, incisors, canines, molars, premolar, chew, grind, cut, Producer, predator, prey, food chain, identify, image, carnivores, herbivores, interpret, human</p> <p>Spr1 Sum1</p> <p>Living things and their habitats - Classification, key, vertebrate, invertebrate, hydrostatic skeleton, amphibian, fish, reptile, bird, mammal, impact, habitat, environment, endangered, extinct, conservation, wildlife.</p> <p>Spr2</p>	<p>Living things and their habitats - life cycle, life span, embryo, womb, weaned, adolescence, metamorphosis, pupa, larva, chrysalis, caterpillar, tadpole, hatchling, fledgling, insect, asexual, germination, plantlets, reproduction, sexual, stamen, stigma, plantlet, fertilisation, filament, anther, sepal, ovary, ovule</p> <p>Spr2 /Sum2</p>	<p>Living things and their habitats - micro-organism, virus, thorax, arthropod, abdomen, arachnid, antenna, jointed limbs, crustacean, fungus, mollusc evolve species, food chain and food web.</p> <p>Spr1</p> <p>Evolution - evolution, natural selection, variation, advantageous, adaptation, characteristics, fossils, offspring. DNA inheritSum1</p> <p>Animals inc humans - Pulse, artery, vein, capillary, circulation, red blood cells, white blood cells, platelets. nutrition, carbohydrate, fat, protein, vitamins, small intestine, medicines, alcohol, tobacco, illegal drugs.</p> <p>Au1</p>