



Haverigg Primary School: Science Overview

| | Autumn One | Autumn Two | Spring One | Spring Two | Summer One | Summer Two |
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| Reception | Health Week: Looking after our Teeth | Types of Materials TAPS: Ice Balloons | Wonderful World: Different environments, building an understanding of where mammals live and why | Planets: introduction through topic | Plants Growing Beans Observing: plants, roots, shoots Labelling Pond Dipping: Frogspawn | Animals inc Humans Life Cycles of frogs and butterflies |
| Year 1 | Seasons Observing seasonal change Plants Identifying and naming plants and trees in our Nature Zone | Seasons Observing seasonal change Animals Inc Humans Name and label basic parts of the body: Skelton, body parts and sense associated with body part | Seasons Observing seasonal change Materials Naming materials Describing physical properties of materials and comparing | Seasons Observing seasonal change Animals inc Humans Identify, name and compare a variety of animals Carnivores, herbivores and omnivores | Seasons Observing seasonal change Plants Structure of a variety of flowering plants and trees Label plants | Seasons Observing seasonal change |
| Year 2 | Animals inc. Humans Leaning about Ourselves: Babies and their adults/ Young to old Human survival Health and Hygiene | Materials Suitability of materials Waterproof | Living Things and their Environment Habitats and adaptations Living, dead and never been alive | Plants How seeds and bulbs grow What plants needs | Plants How seeds and bulbs grow What plants needs | Living things Plants in their habitats and plants survival |
| Year 3 | Animals inc. Humans Skeleton and Muscles Nutrition: importance of food groups | Materials Rocks & Soils: igneous, metamorphic & sedimentary | Light How shadows are formed Eye safety | | Plants Life Cycle – pollination, seed dispersal Job of each part of a plant Plants and Animals reproduction | Forces Introducing magnets: attraction / repulsion Friction |
| Year 4 | Materials Changing states: solids, liquids & gases | Sound | Animals inc. Humans Teeth Digestive System | | Living things and the Environment 7 life processes Classification of plants and animals | Electricity |
| Year 5 | Forces and Magnets Air Resistance Water Resistance Gravity Friction | Earth & Space | | Materials Properties of materials: hardness, durability Changing Materials: Reversible and irreversible changes | Living things and their environment Life cycles Animal and plant reproduction | Animal inc Humans Life cycle of humans Babies to old age |
| Year 6 | Animals inc. Humans Circulatory System Importance of diet & exercise Leading a positive lifestyle | Electricity Series & Parallel Circuits Voltages linking to brightness of bulbs and loudness of buzzers Light Travels in straight lines Travels in light waves How shadows are created | | | Living Things and their Environment Classification of plants and animals | Evolution Animals adapting too their environment to survive Work of Charles Darwin |

Science Progression of Skills, Knowledge and Vocabulary

Animals inc Humans

| | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Curriculum Objectives | <p><u>ELG – PSED – Managing self:</u> Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. Know and talk about the different factors that support their overall health and wellbeing: -regular physical activity -healthy eating -toothbrushing -having a good sleep routine</p> <p><u>ELG – UTW - The Natural world:</u> Explore the natural world around them, making observations and drawing pictures of animals and plants. Life cycles of frogs and butterflies Naming animals around the world</p> | <p>I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals; I can identify and name a variety of common animals that are carnivores, herbivores and omnivores; I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets); I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> | <p>I can notice that animals, including humans, have offspring which grow into adults; I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air); I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> | <p>I can 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; I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> | <p>I can describe the simple functions of the basic parts of the digestive system in humans; I can identify the different types of teeth in humans and their simple functions; I can construct and interpret a variety of food chains, identifying producers, predators and prey.</p> | <p>I can describe the changes as humans develop to old age.</p> | <p>I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood; I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function; I can describe the ways in which nutrients and water are transported within animals, including humans</p> |
| Scientific Enquiry (TAPS) | <p><u>Record</u> <i>I can observe closely to describe the footprints I can compare the size of different footprints.</i></p> <p><u>Forensic Footprints</u> <i>Children can use their sense to acquire information.</i></p> | <p style="text-align: center;"><u>Interpret and Report</u> <i>I can name and group.</i> animal Classification</p> <p><i>Can the children name a variety of animals including fish, amphibians, reptiles, birds, mammals? Can the children classify animals according to different animal groups and/or what they eat?</i></p> <p style="text-align: center;"><u>Evaluate</u> <i>I can use my observations and ideas to suggest answers to questions.</i></p> <p style="text-align: center;">Body Parts</p> <p><i>Can the children observe and name parts of the human body? Can the children use their observations to say which part of the body is associated with each sense?</i></p> | <p style="text-align: center;"><u>Evaluate</u> <i>I can use my observations and ideas to suggest answers to questions</i> Germ investigation with bread – The best thing for washing hands</p> | <p style="text-align: center;"><u>Asking Q's and planning enquiry</u> <i>I can ask relevant questions and use different types of scientific enquires to answer them</i> Skeleton Research Assessment:</p> <ul style="list-style-type: none"> • Can children ask questions about the diversity of human skeletons? • Can children turn questions into a form that can be investigated? | <p style="text-align: center;"><u>Review (Evaluate)</u> Teeth (eggs) in liquids <i>I can use results to draw simple conclusions, make predictions for new values suggest improvements and raise further questions</i> Assessment</p> <ul style="list-style-type: none"> • Can children use results to draw conclusions? • Can children suggest explanations for their findings? | <p style="text-align: center;"><u>Observe and measure</u> Human growth survey <i>I can take measurements using a range of equipment</i></p> | <p style="text-align: center;"><u>Evaluate</u> <i>I can evaluate fossils to consider how animals have adapted to their surroundings</i></p> <p style="text-align: center;">Fossil Habitats</p> |

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| Vocabulary Progression | | <ul style="list-style-type: none"> • <u>Names of animal groups:</u> fish, amphibians, reptiles, birds, mammals. • <u>Animal diets:</u> carnivore, herbivore, omnivore. • <u>Human and animal body parts:</u> e.g. body, head, neck, arms, elbows, legs, knees, face, ears, eyes, nose, hair, mouth, teeth, bones, spines, skull, pelvis, femer, skin, heart, lungs, muscle, hands, feet, tail, wings, feathers, fur, beak, fins, gills. • <u>Human senses:</u> sight, hearing, touch, smell, taste. • <u>Exploring senses:</u> loud, quiet, soft, rough, smooth, bumpy • <u>Other:</u> human, animal, pet. | <ul style="list-style-type: none"> • <u>Being born and growing:</u> Young, offspring, live young, grow, develop, change, hatch, lay, fly, crawl, talk. • <u>Young and adult names:</u> e.g. lamb and sheep, kitten and cat, duckling and duck. • <u>Life cycle stages:</u> e.g. baby, toddler, child, teenager, adult; frogspawn, tadpole, froglet, frog. • <u>Survival and staying healthy:</u> basic needs, survive, food, air, exercise, diet, nutrition, healthy, balanced diet, hygiene, germs, water • <u>Food groups:</u> fruit and vegetables, proteins, dairy and alternatives, carbohydrates, oil and spreads, fat, salt, sugar, | <ul style="list-style-type: none"> • <u>Food groups and nutrients:</u> carbohydrate, protein, calcium, fibre, fats, water (saturated and unsaturated), vitamins, minerals. • <u>Skeletons and muscles:</u> skeleton, muscles, tendons, joints, protection, support, organs, voluntary muscles, involuntary muscles, biceps, triceps, contract, relax, bone, cartilage, shell, vertebrate, invertebrate, endoskeleton, exoskeleton, skeleton. • <u>Names of human bones:</u> e.g. skull, spine, vertebral column, ribcage, pelvis, clavicle, scapula, humerus, ulna, pelvis, radius, femur, tibia, fibula. • <u>Other:</u> energy. | <ul style="list-style-type: none"> • <u>Digestive system:</u> digest, digestion, tongue, teeth, saliva, salivary glands, oesophagus, stomach, liver, small intestine, large intestine, rectum, anus, faeces, organ. • <u>Types of teeth and dental care:</u> molar, incisor, canine, wisdom teeth, tooth decay, plaque, enamel, baby (milk) teeth. • <u>Food chains and animal diets:</u> decomposer, food web. <p>Previously introduced vocabulary: producer, consumer, prey, predator, excretion, habitat.</p> | <ul style="list-style-type: none"> • <u>Process of reproduction:</u> gestation, asexual reproduction, sexual reproduction, sperm, egg, cells, clone. • <u>Changes and life cycle:</u> embryo, foetus, uterus, prenatal, adolescence, puberty, menstruation, adulthood, menopause, life expectancy, old age, hormones, sweat. • <u>Changing body parts:</u> e.g. breasts, penis, larynx, ovaries, genitalia, pubic hair. <p>Previously introduced vocabulary: reproduction, reproduce, types of animals and animal groups, fertilisation.</p> | <ul style="list-style-type: none"> • <u>Circulatory system:</u> circulation, heart, pulse, heartbeat, heart rate, lungs, breathing, blood vessels, blood, pump, transported, oxygenated blood, deoxygenated blood, oxygen, arteries, veins, capillaries, chambers, plasma, platelets, white blood cells, red blood cells. • <u>Lifestyle:</u> drug, alcohol, smoking, disease, calorie, energy input, energy output. <p>Previously introduced vocabulary: carbon dioxide.</p> |
| Enrichment of Subject | Dental nurse | Nature zone- minibeasts, evidence of other animals Seawall to the bird hide Visit from nurse | | Linked to health week | Identifying food chains in local environment – beach crab, plant, bird | | |

Living Things and Their Environment

| | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Curriculum Objective | ELG – UTW - The Natural world: Explore the natural world around them, making observations and drawing pictures of animals and plants. Life cycles of frogs and butterflies Identifying which animals belong to certain habitats – polar bear, tiger, whale | | I can explain the differences between things that are living, dead, and things that were never alive I can explain that most living things live in habitats which suit them and depend on each other I can name some plants and animals in their habitats including micro – habitats I can explain how animals get their food from plants and other animals using a simple food chain | | I can show that living things can be grouped together in various ways I can explore and use classification keys to help group, identify and name a variety of living things I can explain that environments can change and that this sometimes means that living things are put in danger | I can describe the difference in the life cycles of a mammal, an amphibian an insect and a bird I can describe how some animals and plants reproduce | I can give reasons for classifying plants and animals based on specific characteristics. I can describe how plants, animals and micro-organisms are classified into broad groups according to common observable characteristics and based on similarities and differences |
| Scientific Enquiry (TAPS) | <u>Interpret and report & Evaluate</u> I can recognise that plants and animals are living things which grow. <u>Senses Walk</u> I can explore the environment and make observations. | | <u>Interpret and report</u> I can name and group Nature spotters Can children use spotter sheets to identify plants/animals? Can children classify the types of plants/animals they have found? | | Record I can gather, record, classify and present data in a variety of ways to help answer questions. Local environment survey Assessment Can children group living things in different ways? | TAPS – Life cycle research (Interpret and report) I can talk about and present findings from enquiries, including conclusions, causal relationships and explanations of how reliable the information is | <u>Interpret and Record</u> I can report and present findings using appropriate scientific language Invertebrate research Assessment: Can children report and present information about an invertebrate classification group? |
| Vocabulary Progression | Lifecycles, grow, tadpole, froglet, frog, nature, pond, habitat, butterfly, chrysalis, pupas, caterpillar. Beach, nature zone, sea, woodland, desert, polar regions, rainforest | | Living or dead: living, dead, never living, not living, alive, never been alive, healthy. Habitats including microhabitats: depend, shelter, safety, survive, suited, space, minibeast, air. Life processes: movement, sensitivity, growth, reproduction, nutrition, excretion, respiration. Food chains: food sources, food, producer, consumer, predator, prey. | | Living things: organisms, specimen, species. Grouping living things: classification, classification keys, classify, characteristics. Names of invertebrate animals: snails and slugs, worms, spiders, insects. Invertebrate body parts: e.g. wing case, abdomen, thorax, antenna, segments, mandible, proboscis, prolegs. | Reproduction: asexual reproduction, sexual reproduction, gestation, metamorphosis, egg, sperm, plantlet, cuttings, embryo, adolescent, egg, pregnancy, gestation. Previously introduced vocabulary: life cycle, pollination, offspring, fertilise, fertilisation, sepal, filament, anther, stamen, pollen, petal, stigma, style, ovary, carpel, | Classifying: flowering and non-flowering plants, variation, mosses, fern, conifers Microorganisms: bacteria, single-celled, microbes, microscopic, virus, fungi, fungus, mould, antibiotic, yeast, ferment, microscope, decompose. |

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| | | | Names of habitats and microhabitats: e.g. under leaves, woodland, rainforest, sea shore, ocean, urban, local habitat. Previously introduced vocabulary: senses, carnivore, herbivore, omnivore, seed, water, names of materials. | | Environmental changes: environment, environmental dangers, adapt, natural changes, climate change, deforestation, pollution, urbanisation, invasive species, endangered species, extinct. Previously introduced vocabulary: carbon dioxide, fish, bird, mammal, amphibian, reptile, skeleton, bone, vertebrate, invertebrate, backbone, names for animal body parts, names of common plants, photosynthesis. | ovule, stem, bulb, roots, mammal, adult, baby, sperm, cells, live young. | |
| Enrichment of Subject | Nature zone, Cumbria Safari Zoo | | Pond dipping, rockpools, wild life area, sea wall | | Beach and lagoon Classification - | Pond cycle School nurse – reproduction | - RSPB – Lighthouse protection Rock pool looking at the ferns, mosses, confers. Boom project – introduce the the small blue butterfly from Barrow to Haverigg (2023) |

Materials

| | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Curriculum Objective | | Everyday Materials I can distinguish between an object and the material from which it is made; I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock; I can describe the simple physical properties of a variety of everyday materials; I can compare and group together a variety of everyday materials on the basis of their simple physical properties. | Use of Everyday Materials I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses; I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. | Rocks I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties; I can describe in simple terms how fossils are formed when things that have lived are trapped within rock; I can recognise that soils are made from rocks and organic matter. | States of Matter I can compare and group materials together, according to whether they are solids, liquids or gases; I can 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); I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. | Properties and Changes of Materials I can 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; I can know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution; I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating; I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic; I can demonstrate that dissolving, mixing and changes of state are reversible changes; I can 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 | Evolution I can explain that the kinds of living things that live on the earth now are different from those that inhabited the Earth millions of years ago and that fossils provide this information. I can explain that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. I can give examples of how animals and plants are adapted to suit their environment in different ways and can explain that adaptation may lead to evolution. |
| Scientific Enquiry (TAPS) | Observe and Measure With support can children describe their observations and make simple comparisons. Can children use drawings/photos and labels to present their evidence Frozen Balloon | Ask questions and plan enquiry I can ask questions and know they can be answered in different ways. Ways to test transparency Can children test whether materials are opaque or transparent? Can children compare materials on the basis of their transparency? | Record I can collect and record data to help answer questions Material hunt Can children observe closely to find objects made of different materials? | Interpret & Report: I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Rock Reports Assessment: | I can set up practical enquires, comparative and fair tests Drying Materials Assessment Can children identify what is to be changed and what is to be kept the same. | TAPS – Materials (Sugar cubes) Recording I can record data and results of increasing complexity, using scientific diagrams and labels I can identify scientific evidence that has been used | Evaluate: I can identify scientific evidence that has been used to support or refute ideas or arguments. Fossil Habitats <u>Assessment:</u> |

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| | <p>Curriculum Link: Changes over time. Melting, freezing and changes in materials.</p> | <p>Can children discuss different ways to test transparency?</p> <p>Set up enquiry I can do tests.</p> <p>Floating and Sinking</p> <p>Can children test whether materials are opaque or transparent? Can children compare materials on the basis of their transparency? Can children discuss different ways to test transparency?</p> | <p>Can children record their findings?</p> | <p>Can children group rocks based on properties? Can children talk about / draw a diagram / write about their findings? Can children draw conclusions about the least / most wearing rock?</p> | <p>Can children identify what to observe / measure to see if there is a difference</p> <p>I can make observations and take measurements using a range of equipment.</p> <p>Measuring Temperature.</p> <p>Assessment:</p> <p>Can children use a thermometer to measure temperature accurately?</p> | <p>to support or refute ideas or arguments</p> <p>TAPS – Insulation (Enquiry)</p> <p>I can use test results to make predictions to set up further comparative and fair tests.</p> | <p>Can children use evidence (from fossils or research) to develop ideas?</p> <p>Can children discuss whether evidence supports ideas?</p> |
| Vocabulary Progression | | <p>Names of materials: wood, plastic, glass, metal, water, rock, paper, cardboard, rubber, fabric.</p> <p>Properties of materials: hard, soft, shiny, dull, stretchy, rough, smooth, bendy, not bendy, transparent, opaque, waterproof, not waterproof, absorbent, not absorbent, sharp, stiff.</p> | <p>Changing shape: squash, bend, twist, stretch.</p> <p>Properties of materials: e.g. strong, flexible, light, hard-wearing, elastic.</p> <p>Other: suitability, recycle, pollution.</p> | <p>Types of rock: sedimentary rock, igneous rock, metamorphic rock.</p> <p>Properties of rocks: permeable, semi-permeable, impermeable, durable.</p> <p>Names of rocks: e.g. marble, chalk, granite, sandstone, slate.</p> <p>Formation of rocks and fossils: natural, human-made, magma, lava, molten rock, sediment, erosion, fossilisation, layers, bone, fossil.</p> <p>Soil: sandy, chalky, clay, peaty, loamy, topsoil, subsoil, bedrock, mineral, organic matter, compost.</p> <p>Other: palaeontology, Natural and manmade</p> <p>Previously introduced vocabulary: soil, water, air.</p> | <ul style="list-style-type: none"> States of matter: solids, liquids, gases, particles. State change: evaporate, condense, melt, freeze, heat, cool, melting point, freezing point, boiling point, water vapour. Water cycle: precipitation, evaporation, condensation, ground run-off, collection, underground water, bodies of water (sea, river, stream), water droplets, hail. Other: atmosphere. <p>Previously introduced vocabulary: temperature, rain, cloud, snow, wind, sun, hot, cold, absorb, carbon dioxide.</p> | <ul style="list-style-type: none"> Properties of materials: thermal conductor/insulator, magnetism, electrical resistance, transparency. Mixtures and solutions: dissolving, substance, soluble, insoluble. Changes of materials: reversible change, physical change, irreversible change, chemical change, burning, new material, product. Separating: sieving, filtering, magnetic attraction. <p>Previously introduced vocabulary: electrical conductor/insulator, bulb, translucent.</p> | <ul style="list-style-type: none"> Evolution and inheritance: evolve, adaptation, inherit, natural selection, adaptive traits, inherited traits, mutations, theory of evolution, ancestors, biological parent, chromosomes, genes, Charles Darwin. |
| Enrichment of Subject | | Rag Tag art resources | | <ul style="list-style-type: none"> STEM workshop Rockpark Millom Whitescar Caves Carnforth | Water workshop with United Utilities looking at the local reservoir | | |
| Forces, Seasons and Plants | | | | | | | |
| | Reception | Year 1 | | Year 3 | | Year 5 | |
| Curriculum Objective | | <p>I can observe changes across the 4 seasons;</p> <p>I can observe and describe weather associated with the seasons and how day length varies.</p> | | <p>I can compare how things move on different surfaces;</p> <p>I can notice that some forces need contact between 2 objects, but magnetic forces can act at a distance;</p> <p>I can observe how magnets attract or repel each other and attract some materials and not others;</p> <p>I can 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;</p> <p>I can describe magnets as having 2 poles;</p> <p>I can predict whether 2 magnets will attract or repel each other, depending on which poles are facing.</p> | | <p>Forces</p> <p>I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object;</p> <p>I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces;</p> <p>I Can recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</p> <p>Planets</p> <p>I can describe the movement of the Earth and other planets relative to the Sun in the solar system;</p> <p>I can describe the movement of the Moon relative to the Earth;</p> <p>I can describe the Sun, Earth and Moon as approximately spherical bodies;</p> <p>I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> | |
| Scientific Enquiry (TAPS) | | <p style="text-align: center;">Record</p> <p style="text-align: center;">I can collect and record data to help answer questions.</p> <p style="text-align: center;">Seasons throughout the Year</p> <p style="text-align: center;">Can children observe changes across the seasons?</p> <p style="text-align: center;">Can children record and discuss changes across the seasons?</p> | | <p style="text-align: center;">Set Up Enquiry</p> <p style="text-align: center;">I can set up simple practical enquiries, comparative and fair tests</p> <p style="text-align: center;">Magnet Test</p> <p style="text-align: center;">Assessment:</p> | | <p style="text-align: center;">TAPS – Craters (Recording)</p> <p style="text-align: center;">I can record data and results of increasing complexity, using scientific diagrams and labels</p> <p style="text-align: center;">I can identify scientific evidence that has been used to support or refute ideas or arguments</p> | |

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| | | | <ul style="list-style-type: none"> Can children decide on an approach to compare magnet strength? Can children recognise and control variables where necessary? | |
| Vocabulary Progression | <p>Seasons: spring, summer, autumn, winter</p> <p>Weather: e.g. sun, rain, snow, sleet, frost, ice, fog, cloud, hot/warm, cold, storm, wind, thunder, weather forecast.</p> <p>Day length: night, day, daylight.</p> | <p>How things move: move, movement, surface, distance, strength.</p> <p>Types of forces: push, pull, contact force, non-contact force, friction.</p> <p>Magnets: magnetic, magnetic field, magnetic force, bar magnet, horseshoe magnet, ring magnet, magnetic poles (north pole, south pole), attract, repel, compass.</p> <p>Magnetic and non-magnetic materials: e.g. iron, nickel, cobalt, brass, copper</p> <p>Previously introduced vocabulary: metal, names of materials.</p> | <p>Types of forces: air resistance, water resistance, buoyancy, upthrust, Earth's gravitational pull, gravity, opposing forces, driving force.</p> <ul style="list-style-type: none"> Mechanisms: levers, pulleys, gears/cogs. Measurements: weight, mass, kilograms (kg), Newtons (N), scales, speed, fast, slow. Other: Earth. <p>Previously introduced vocabulary: air, heat, moon.</p> <ul style="list-style-type: none"> Solar system: star, planet. Names of planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus. Shape: spherical bodies, sphere. Movement: rotate, axis, orbit, satellite. Day length: sunrise, sunset, midday, time zone. <p>Previously introduced vocabulary: Sun, moon, shadow, day, night, heat, light, reflect.</p> | |
| Enrichment of Subject | <p>Daily weather chart for local area</p> <p>Nature zone – features of the different seasons</p> | STEM workshop | STEM forces workshop | React science show |

Sound and Light

| | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Curriculum Objective | | | | <p>I can recognise that they need light in order to see things and that dark is the absence of light;</p> <p>I can notice that light is reflected from surfaces;</p> <p>I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes;</p> <p>I can recognise that shadows are formed when the light from a light source is blocked by an opaque object;</p> <p>I can find patterns in the way that the size of shadows change.</p> | <p>I can identify how sounds are made, associating some of them with something vibrating;</p> <p>I can recognise that vibrations from sounds travel through a medium to the ear;</p> <p>I can find patterns between the pitch of a sound and features of the object that produced it;</p> <p>I can find patterns between the volume of a sound and the strength of the vibrations that produced it;</p> <ul style="list-style-type: none"> recognise that sounds get fainter as the distance from the sound source increases. | | <p>I can recognise that light appears to travel in straight lines;</p> <p>I can 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;</p> <p>I can 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;</p> <p>I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> |
| Scientific Enquiry (TAPS) | <p>Asking Questions and Plan Enquiry:</p> <p>I can explore how to make different sounds with the materials?</p> <p>I can make predictions about the kind of sound which will be made?</p> <p>Scooping Sounds</p> <p>Plan & design: Explores & observes through play. Makes simple predictions of what might happen.</p> | | | <p>Record:</p> <p>I can gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>Making Shadows</p> <p>Assessment:</p> <p>Can children make a series of careful observations?</p> <p>Can children record their observations in a systematic way that relates to the question?</p> | <p>Ask questions and plan enquiry</p> <p>I can ask questions and use different types of scientific enquires to answer them.</p> <p>Investigating Pitch</p> <p>Can children suggest how to alter pitch?</p> <p>Can children carry out simple tests of these ideas?</p> | | <p>Ask Questions & Plan Enquiry</p> <p>I can ask questions to learn more about light</p> <p>I can begin to use these questions to investigate</p> <p>Light Questions</p> <p>Assessment:</p> <p>Children will be able to demonstrate to teachers what they know about light through the questions they are creating in the lesson.</p> |

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| | | | | | | | <p>Record I can record the results of an experiments</p> <p>Shadow Investigation Assessment: Children meeting the objective would be able to show in their diagram (or in discussion with the teacher) how to position the torch and the object to make a shadow. Their diagram may also show how they would be accurate when changing, measuring or controlling variables. For example, this group have considered how to use rulers/tape to move the torch in small increments.</p> |
| Vocabulary Progression | | | | <p>Light and seeing: dark, absence of light, light source opaque, transparent, illuminate, visible, shadow, translucent, energy, block.</p> <p>Light sources: e.g. candle, torch, fire, lantern, lightning, sunlight, sun</p> <p>Reflective light: reflect, reflection, surface, ray, scatter, reverse, beam, angle, mirror, moon.</p> <p>Sun safety: dangerous, glare, damage, UV light, UV rating, sunglasses, direct.</p> | <p>Parts of the ear: eardrum.</p> <p>Making sound: vibration, vocal cords, particles.</p> <p>Measuring sound: pitch, volume, amplitude, sound wave, quiet, loud, high, low, travel, distance.</p> <p>Other: soundproof, absorb sound.</p> | | <p>Reflection: periscope.</p> <p>Seeing light: visible spectrum, prism.</p> <p>How light travels: light waves, straight line, refraction, absorb, reflection</p> |
| Enrichment of Subject | | | | STEM light workshop | | | <p>STEM workshop</p> <p>Millom school transition activity prisms</p> |

Plants

| | Reception | Year 1 | Year 2 | Year 3 | | |
|---------------------------|--|---|--|---|--|--|
| Curriculum Objective | <p>ELG – UTW - The Natural world: Explore the natural world around them, making observations and drawing pictures of animals and plants. Basic concept of growth Watching a bean grow</p> | <p>I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees; I can identify and describe the basic structure of a variety of common flowering plants, including trees.</p> | <p>I can observe and describe how seeds and bulbs grow into mature plants; I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> | <p>I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers; I can 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; I can investigate the way in which water is transported within plants; I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> | | |
| Scientific Enquiry (TAPS) | | <p>Observe and Measure I can use my observations and ideas to suggest answers to questions.</p> <p>Shades of Colour What did we find? Which colour was most common? Which colour was hardest to find?</p> | <p>Observe and measure I can look closely, using equipment I can collect and record data to help answer questions <u>Compare growth</u> Can children observe closely, noticing differences and similarities? Can children measure and compare the height of plants?</p> | <p>Observe + Measure I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment Measuring Plants Assessment:</p> <ul style="list-style-type: none"> Can children use simple apparatus to measure water/height? Can children record their measurements? <p>Evaluate:</p> | | |

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| | | <p>Observe and Measure I can look closely, using equipment.</p> <p>Leaf looking Can children observe closely and make an accurate representation of a leaf that they have found</p> | | <p>I can use straightforward scientific evidence to answer questions or to support my findings.</p> <p>Function of a Stem Assessment:</p> <ul style="list-style-type: none"> • Can children make careful observations? • Can children use observations to suggest how water is transported? | | |
| Vocabulary Progression | | <p><u>Names of common plants:</u> wild plant, garden plant, evergreen tree, deciduous tree, common flowering plant, grass.</p> <p><u>Name some features of plants:</u> e.g. flower, vegetable, fruit, berry, leaf/leaves, blossom, petal, stem, trunk, branch, root, seed, soil.</p> <p><u>Name some common types of plant</u> e.g. daffodil, bluebells, dandelions, daisies, nettles</p> | <p><u>Growth of plants:</u> germination, shoot, seed dispersal, grow, food store, life cycle, die, wilt, seedling, sapling.</p> <p><u>Needs of plants:</u> sunlight, nutrition, light, healthy, space, air.</p> <p><u>Name different types of plant:</u> e.g. bean plant, cactus, bulb</p> <p><u>Names of different habitats:</u> e.g. rainforest, desert.</p> <p>Previously introduced vocabulary: water, temperature, warm, hot, cold, habitat.</p> | <p><u>Water transportation:</u> transport, evaporation, evaporate, nutrients, absorb, anchor.</p> <p><u>Life cycle of flowering plants:</u> pollination (insect/wind), self-pollination, pollen, nectar, pollinator, seed formation, seed dispersal (animal/wind/water), reproduce, fertilisation, fertilise, stamen, anther, filament, carpel (pistil), stigma, style, ovary, ovule, sepal, carbon dioxide oxygen, chlorophyll, photosynthesis, pores,</p> <p>Previously introduced vocabulary: life cycle.</p> | | |
| Enrichment of Subject | | <i>Nature Zone and field to identify plantts</i> | <i>Growing Sunflowers</i> | <i>Using field – dandelion clocks? Planting beds?</i> | | |

Electricity

| | | | | Year 4 | Year 6 |
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| Curriculum Objective | | | | <p>I can identify common appliances that run on electricity;</p> <p>I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers;</p> <p>I can 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;</p> <p>I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit;</p> <p>I can recognise some common conductors and insulators, and associate metals with being good conductors.</p> | <p>I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit;</p> <p>I can 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;</p> <p>I can use recognised symbols when representing a simple circuit in a diagram.</p> |
| Scientific Enquiry (TAPS) | | | | <p><u>Interpret and report : Electrical conductors</u></p> <p><i>I can report on findings from enquires, including spoken and written explanations, displays or presentations of results and conclusions.</i></p> <p>Assessment Questions</p> <p><i>Can children explain their results and their conclusions?</i></p> <p><i>Can the children recognise</i></p> | <p><u>Set up an Enquiry</u></p> <p>I can plan a scientific enquiry:</p> <ul style="list-style-type: none"> - <i>to answer a question</i> - <i>controlling variables to ensure it is a fair test</i> <p style="text-align: center;">Bulb Brightness</p> <p><i>Can children create a scientific question which identifies the 'change' and 'measure'?</i></p> <p><i>Can children identify control variables to plan a fair test?</i></p> <p style="text-align: center;"><u>Observe & Measure</u></p> <p><i>I can create a series circuit</i></p> |

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| | | | | | <p><i>I can make observations and measure the results of an experiment</i></p> <p>Conductive dough</p> <p><i>Can children use the conductive dough to make a circuit?</i></p> <p><i>Can the children systematically trouble shoot if something is not working?</i></p> |
| Vocabulary Progression | | | | <p><i>Electricity: mains-powered, battery-powered, mains electricity, plug, appliances, devices.</i></p> <p><i>Circuits: circuit, simple series circuit, complete circuit, incomplete circuit, LED, lamp, variable resistor, push switch</i></p> <p><i>Circuit parts: bulb, cell, wire, buzzer, switch, motor, battery.</i></p> <p><i>Materials: electrical conductor, electrical insulator.</i></p> <p><i>Other: safety.</i></p> | <p><i>Flow and measure of electricity: voltage, amps, resistance, electrons, volts (V), current.</i></p> <p><i>Circuits: symbol, circuit diagram, component, function, filament.</i></p> <p><i>Variations: dimmer, brighter, louder, quieter.</i></p> <p><i>Types of electricity: natural electricity, human-made electricity, solar panels, power station.</i></p> <p><i>Other: positive, negative.</i></p> |
| Enrichment of Subject | | | | STEM Workshop | STEM Workshop |

“Think big, think differently and always creatively”
Haverigg Primary School