

Porthleven School

Science Knowledge Drops (2024-2025)

We are safe. We belong. We are responsible. We learn. We can.

Stage	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	<p>All About Me</p> <p>Humans all have heads, arms, legs and other body parts.</p> <p>As we get older we change and look different.</p> <p>We have five senses: touch, taste, smell, hear and see.</p> <p>Vocabulary: Head, nose, ears, neck, leg, knee, foot, toes, arm, hands, fingers, chest, tummy. Baby, toddler, teenager, adult, elderly. Sight, sound, taste, smell, touch.</p>	<p>Celebrations</p> <p>Spiders have a head, body, eyes, 8 legs and fangs.</p> <p>Reindeers have a head, eyes, nose, antlers, 4 legs, hooves, tail and a body.</p> <p>Spiders, insects and worms belong to a group of animals called minibeasts.</p> <p>Some animals have similar body parts where others have different ones.</p> <p>Materials can change when heated or cooled.</p> <p>Vocabulary: Spider, Halloween, head, body, fangs, legs, eyes. Creepy crawlies, Christmas, snow, chocolate, cold, freezing, melting, soft.</p>	<p>People Who Help Us</p> <p>Humans take care of themselves by exercising, healthy eating, brushing our teeth, sleeping and being safe.</p> <p>Many people have jobs that help us to keep healthy and safe such as Dentists, Doctors, Firemen and Policemen.</p> <p>Materials can change when heated.</p> <p>Vocabulary: People, dentist, firefighter, police officer, teacher, teeth, health, safe, safety, 999, emergency, emergency services, hygiene, infection</p>	<p>Minibeasts and growing</p> <p>Spiders, insects and worms belong to a group of animals called minibeasts.</p> <p>When a caterpillar grows it turns into a butterfly.</p> <p>Some of the food that we eat such as fruit and vegetables grows on plants.</p> <p>Seeds grow into plants. They need light and water to grow.</p> <p>Some animals have similar body parts where others have different ones.</p> <p>All animals change as they grow up.</p> <p>Vocabulary: Minibeast, insect, habitat, diet, caterpillar, butterfly,</p>	<p>Animals</p> <p>Some animals have similar body parts where others have different ones.</p> <p>Some animals only live in specific places in the world.</p> <p>Where an animal lives is called its habitat.</p> <p>There are 4 seasons: Autumn, winter, spring and summer.</p> <p>Some animals hibernate when it gets colder in Autumn and Winter.</p> <p>Vocabulary: Animal, seasons, hibernation, habitat, warm, cold, rest, fat, movement, Earth, live, weather, food, shelter.</p>	<p>Under the Sea</p> <p>Where an animal lives is called its habitat.</p> <p>Some animals live in water and some live on land.</p> <p>Some animals have similar body parts where others have different ones.</p> <p>Fish have a body, eyes, fins, tails and gills.</p> <p>Some objects float and some sink in water.</p> <p>Vocabulary: Fish, sea, life, ocean, ocean floor, sand, coral reef, shore, rockpool, habitat, turtle, eye, fin, tail, mouth, gills, float, sink, crab, lobster, dolphin, seal, whale, starfish, octopus, jellyfish, shark.</p>

			growing, legs, food, life cycle.		
Year 1	<p>Seasonal Changes - Autumn Weather can change.</p> <p>There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow.</p> <p>Days are longer and hotter in the summer and shorter and colder in the winter.</p> <p>There are four seasons: Spring, Summer, Autumn, Winter and each has different weather.</p> <p>Vocabulary: weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p> <p>Everyday Materials (Links to Toy topic)</p> <p>There are many different materials including plastic, wood, glass, paper, card, rock, ceramics and fabrics.</p> <p>Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass).</p> <p>The properties of a material determine whether they can be used for a purpose.</p> <p>Vocabulary: 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</p>	<p>Seasonal Changes - Winter & Spring same as Autumn.</p> <p>Animals inc Humans - Animals & Human Body</p> <p>There are many different animals with different characteristics and body parts including fish, amphibians, reptiles' birds and mammals.</p> <p>Animals have senses to help individuals survive touch, smell, hearing, taste and sight. When animals sense things they are able to respond.</p> <p>Animals need food to survive. Animals can be grouped as carnivores, herbivores or omnivores.</p> <p>Animals need a variety of food to help them grow, repair their bodies, be active and stay healthy.</p> <p>Vocabulary: head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, fish, amphibians, reptiles' birds and mammals, parts of the human body including those within the school's RSE policy, senses, touch, see, smell, taste, hear, fingers, skin, eyes, nose, ears, tongue.</p>	<p>Seasonal Changes - Summer Same as Autumn.</p> <p>Plants</p> <p>Plants grow from seeds/bulbs.</p> <p>Plants need light and water to grow and survive.</p> <p>Plants have roots, stems and leaves.</p> <p>Plants are important and have different parts with different jobs.</p> <p>We can eat lots of plants such as fruit and vegetables.</p> <p>An evergreen tree keeps its green leaves all year round. A deciduous tree leaves change colour and fall off each year in Autumn.</p> <p>Vocabulary: leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, evergreen, deciduous, names of trees in the local area, names of garden and wild flowering plants in the local area</p> <p>Climate Change – Extra unit There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow.</p> <p>Weather is what happens in one area. Climate is how we describe weather over the whole planet.</p> <p>Climate change can affect humans and animals. We can help to stop climate change.</p>		

<p>Year 2</p>	<p>Living things and their habitats</p> <p>Some things are living, some were once living but now dead and some things never lived.</p> <p>Animals and plants live in different habitats. They are adapted to survive in different habitats.</p> <p>Animals obtain their food from plants and other animals in food chains.</p> <p>A producer is a living thing that produces its own food such as green plants.</p> <p>A predator is an animal that eats another animal.</p> <p>Animals can be grouped as carnivores, herbivores or omnivores.</p> <p>Vocabulary: living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, names of local habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold.</p>	<p>Everyday Materials</p> <p>There are many different materials that have different properties.</p> <p>Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass).</p> <p>The properties of a material determine whether they are suitable for a purpose.</p> <p>Materials can be changed by physical force (twisting, bending, squashing and stretching).</p> <p>Vocabulary: opaque, transparent, translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching.</p>	<p>Animals including humans.</p> <p>Y1 Animals need a variety of food to help them grow, be active and stay healthy.</p> <p>Animals reproduce new animals when they reach maturity. They have offspring that grow into adults.</p> <p>All animals change as they grow up until they reach maturity and eventually die.</p> <p>Animals move, breathe, eat, reproduce, and grow in order to survive.</p> <p>Different animals move in different ways to help them survive.</p> <p>Exercise keeps animal's bodies healthy.</p> <p>There are five main food groups: proteins, carbohydrates, fruit and vegetables, fats and dairy.</p> <p>Hygiene is ways we keep our bodies clean.</p> <p>We can help to keep germs away with good hygiene.</p> <p>Vocabulary: offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/chicken, kitten/cat, caterpillar/butterfly), survive, survival, water, food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types,</p>	<p>Plants</p> <p>Plants grow from seeds/bulbs.</p> <p>Plants need light, water and warmth to grow and survive.</p> <p>Flowers make seeds to make more plants (reproduce)</p> <p>Plants have roots, stems and leaves.</p> <p>Plants are important and have different parts with different jobs.</p> <p>Vocabulary: light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling names of plants in local habitats and microhabitats.</p> <p>Plastic Pollution</p> <p>Recycling is the process of converting waste materials into new materials and objects.</p> <p>There are many different materials that have different describable and measurable properties.</p> <p>Materials can be changed by physical force (twisting, bending, squashing and stretching).</p> <p>Pollution can stop animals being able to move, breathe, eat in order to survive.</p> <p>Vocabulary: plastic, tally, sort, identify, materials, recycle, reuse, reduce</p>
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<p>Year 3</p>	<p>Forces & Magnets</p> <p>Forces are pushes and pulls, which make things, move and stop moving.</p> <p>Forces are shown by arrows in a diagram. The direction of the arrow shows the direction of the force.</p> <p>Friction is a force between two surfaces that are sliding, or trying to slide, across each other.</p> <p>Most forces need contact between objects, but magnets can act at a distance.</p> <p>Magnets can attract or repel one another. Like poles repel but opposite poles attract each other.</p> <p>Magnets attract some materials such as most metals.</p> <p>Vocabulary: 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</p>	<p>Rocks & Soils</p> <p>There are different types of rocks and soils.</p> <p>Rocks are classified in three groups: igneous (Granite) , sedimentary (Sandstone & Limestone) and metamorphic (Marble).</p> <p>Different rocks and soils have different properties.</p> <p>Fossils are formed when things that had lived are trapped within rock. They tell us what has happened before.</p> <p>Vocabulary: rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorbs water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, types of soil (e.g. peaty, sandy, chalky, clay)</p>	<p>Animals Including Humans Nutrition & Movement</p> <p>There are 7 nutrients in our food: Carbohydrates, Fibre, Protein, Fat, Minerals, Vitamins and water.</p> <p>Animals cannot make their own food; they get nutrition from what they eat.</p> <p>Many animals have skeletons to support their bodies and protect vital organs.</p> <p>Not all skeletons look the same. Some animals have exo, endo or hydrostatic skeletons.</p> <p>Muscles are connected to bones and move them when they contract.</p> <p>Muscles work in pairs to contract and relax to move bones and joints.</p> <p>vocabulary: nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine</p>	<p>Light</p> <p>There must be light for us to see. Without light it is dark.</p> <p>Light comes from a source.</p> <p>Transparent materials let light through them and opaque materials don't let light through.</p> <p>Beams of light bounce off some materials - this is called reflection.</p> <p>Shiny materials reflect light beams better than non-shiny materials.</p> <p>UV light from the sun can be dangerous and we need to protect ourselves from it.</p> <p>Shadows are formed when light is blocked.</p> <p>Vocabulary: light, light source, dark, absence of light, surface, shadow, reflect, mirror, Sun, sunlight, dangerous, opaque, block, transparent, translucent.</p>	<p>Plants</p> <p>A producer is a living thing that produces its own food such as green plants.</p> <p>Their leaves absorb sunlight and carbon dioxide.</p> <p>Plants have roots, which provide support and draw water from the soil.</p> <p>Flowering plants have specific parts which help it carry out pollination, fertilisation and seed production.</p> <p>Seed dispersal improves a plants chances of successful reproduction.</p> <p>Seeds/bulbs require light, water, warmth, soil and air to grow.</p> <p>Vocabulary: photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport</p>
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<p>Year 4</p>	<p>Electricity</p> <p>A source of electricity (mains of battery) is needed for electrical devices to work.</p> <p>Electricity sources push electricity round a circuit. More batteries will push the electricity round the circuit faster.</p> <p>A complete circuit is needed for electricity to flow and devices to work.</p> <p>Materials which allow electricity to flow easily through them are called conductors.</p> <p>Materials that don't allow electricity to flow easily through them are called insulators.</p> <p>Renewable energy is made from resources that nature will replace, like wind, water and sunshine</p> <p>Vocabulary: 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</p>	<p>States of Matter</p> <p>Everything in the world is made of particles.</p> <p>Solids, liquids and gases are described by observable properties.</p> <p>Materials can be divided into solids, liquids and gases.</p> <p>Heating causes solids to melt into liquids and liquids evaporate into gases.</p> <p>Cooling causes gases to condense into liquids and liquids to freeze into solids.</p> <p>The water cycle is the path that all water follows as it moves around Earth in different states.</p> <p>Vocabulary: solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling point, evaporation, condensation, temperature, water cycle</p>	<p>Animals including Humans Teeth, Food Chains and Digestion</p> <p>Animals have teeth to help them eat.</p> <p>There are 3 main types of teeth: Incisors, Canines and Molars. Different types of teeth do different jobs.</p> <p>Food is broken down by the teeth and further in the stomach and intestines where nutrients go into the blood.</p> <p>The mouth, teeth, oesophagus, stomach, large and small intestines and rectum are all part of the digestive system.</p> <p>A producer is a living thing that produces its own food such as green plants.</p> <p>A predator is an animal that eats another animal.</p> <p>A food chain shows how nutrients are passed on from a plant (producer) to the animals that eat it (consumer) and the animals that eat them (predator).</p> <p>Vocabulary: digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, large intestine, rectum, anus, incisor, canine,molar, premolar, herbivore, carnivore, omnivore, producer, predator, prey, food chain, food web</p>	<p>Living things and habitats Classification</p> <p>Living things can be divided into groups based upon their characteristics.</p> <p>Classification keys help to identify living things by answering questions.</p> <p>Environmental change affects different habitats and animals differently.</p> <p>Different food chains occur in different habitats.</p> <p>Human activity can harm the environment.</p> <p>vocabulary: classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate, herbivore, carnivore, omnivore, producer, predator, prey</p>	<p>Sound</p> <p>Sound is produced when an object vibrates.</p> <p>Sound travels from its source and we hear it when it travels to our ears.</p> <p>Changing the shape, size and material of an object will change the sound it produces.</p> <p>Sound moves through all materials by making them vibrate.</p> <p>Sound is measured in decibels.</p> <p>Bigger vibrations produce louder sounds and smaller vibrations produce quieter sounds.</p> <p>Faster vibrations (higher frequencies) produce higher pitched sounds.</p> <p>Vocabulary: sound, source, vibrate, vibration, waves, travel, pitch (high, low), volume, faint, quiet, loud, insulation</p>
<p>Year 5</p>	<p>Living things and habitats – Life Cycles</p>	<p>Forces</p> <p>Forces are pushes and pulls which make things move and stop moving.</p>	<p>Properties and Changes of Materials</p> <p>Some materials will dissolve in water and are called soluble. Some will not dissolve and are called insoluble.</p>	<p>Animals including Humans Change & Growth</p>	<p>Earth and Space</p> <p>The planets in order from the sun are Mercury, Venus,</p>

<p>Different types of animals have different life cycles depending on their animal group.</p> <p>Mammals have three life stages - baby, juvenile and adult and give birth to live young.</p> <p>Some animals go through a metamorphosis and transform from young to adults.</p> <p>Some plants reproduce sexually through pollination and have two parents.</p> <p>Some plants reproduce asexually with one parent through tubers, spores, runners, bulbs or plantlets.</p> <p>Vocabulary: puberty, mammal, amphibian, insect, bird, fish, reproduction life cycle, foetus, baby, child, adolescent, adult, reproduce, sexual, sperm, fertilises, egg, live young.</p>	<p>Forces can speed up or slow objects down or make them change direction.</p> <p>Forces are shown by arrows in diagrams. The bigger the arrow, the bigger the force. The direction of the arrow shows the direction of the force.</p> <p>Gravity is a force that pulls everything down to the centre of the earth.</p> <p>Air resistance and water resistance are forces against objects caused by objects having to move air and water out of their way.</p> <p>Friction is a force against motion caused by two surfaces rubbing against each other.</p> <p>Some objects require large forces to make them move; gears, pulley and levers can reduce the force needed to make things move.</p> <p>Vocabulary: force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple</p>	<p>Some changes to materials can be changed (reversible) but others cannot return back to their original state (irreversible).</p> <p>Sometimes mixed substances react to make a new substance. These changes are usually irreversible.</p> <p>Heating can sometimes cause materials to change permanently. These changes are irreversible.</p> <p>An insulator is a material that does not allow heat or energy to pass through easily.</p> <p>When two or more substances are mixed and remain present the mixture can be separated.</p> <p>Materials change state by heating and cooling.</p> <p>Materials can be separated using several techniques: magnetics, filtering, sieving, evaporation and floating.</p> <p>Vocabulary: thermal insulator, conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible, non-reversible change, burning, rusting, new material, change of state, mixture, dissolve, solution, filter, sieve.</p>	<p>Different animals have different lifecycles.</p> <p>Different animals grow at different rates.</p> <p>Puberty is a process which prepares our bodies for being adults, and reproduction.</p> <p>Hormones control these changes; which can be physical and/or emotional.</p> <p>Some organisms reproduce sexually where offspring inherit information from both parents.</p> <p>Some organisms reproduce asexually by making a copy of a single parent.</p> <p>Vocabulary: puberty, mammal, amphibian, insect, bird, fish, reproduction life cycle, foetus, baby, child, adolescent, adult, reproduce, sexual, sperm, fertilises, egg, live young.</p>	<p>Earth, Mars, Jupiter, Saturn, Uranus and Neptune.</p> <p>The Earth, Moon and Sun are spherical.</p> <p>The planets orbit the sun.</p> <p>Objects like planets, moons and stars spin/rotate.</p> <p>Smaller mass objects like planets orbit large mass objects like stars.</p> <p>Night and day occur due to the earth spinning on its axis once every 24 hours.</p> <p>Vocabulary: Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation, waxing, waning, crescent, gibbous. Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, planets, solar system, day, night, rotate, orbit, axis, spherical, geocentric, heliocentric.</p>
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		machines, levers, pulleys, gears			
Year 6	<p>Electricity A source of electricity (mains of battery) is needed for electrical devices to work.</p> <p>Batteries are a store of energy and this energy pushes electricity round the circuit.</p> <p>Voltage measures the 'push.'</p> <p>A complete circuit is needed for electricity to flow and devices to work. Repeated knowledge drops.</p> <p>We measure the flow of electricity around the circuit in amps.</p> <p>Current is how much electricity is flowing round a circuit.</p> <p>The greater the current flowing through a device the harder it works. A bulb will burn brighter or a buzzer will buzz louder with more current.</p> <p>Vocabulary: 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 diagram, circuit symbol, voltage</p>	<p>Living things and habitats – Classification</p> <p>Plants and animals can be organised into broad groups based on observable characteristics.</p> <p>Animals and plants can be identified and classified using classification keys.</p> <p>Carl Linnaeus created 7 levels of classification for all living things.</p> <p>Living things can be sorted into Kingdoms such as Animal, Plant and Microorganisms (e.g bacteria and fungi)</p> <p>Vocabulary: vertebrates, fish, amphibians, reptiles, birds, mammals, warm-blooded, cold-blooded, invertebrates, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers</p>	<p>Animals inc. humans – Circulation and Diet</p> <p>The heart and the blood vessels (arteries, veins and capillaries) form the circulatory system.</p> <p>The heart pumps blood around the body.</p> <p>Oxygen is taken into the blood in the lungs; the heart pumps the blood through blood vessels to the muscles; the muscles take oxygen and nutrients from the blood.</p> <p>Nutrients and water are transported within blood when taken from the digestive system.</p> <p>Exercise makes the heartbeat faster and the lungs exchange oxygen, strengthening the heart and making you healthier.</p> <p>Pulse rate is the speed at which your heart beats.</p> <p>A balanced diet, plenty of exercise and avoiding drugs and smoking lead to healthy lifestyle.</p> <p>Vocabulary: heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, carbon dioxide, cycle, circulatory system, diet, drugs, lifestyle. Exercise, digestive, transport, gas exchange, villi, nutrients, water, oxygen, alcohol, drugs, tobacco.</p>	<p>Light</p> <p>Light travels in straight lines.</p> <p>Animals see light sources when light travels from the source into their eyes.</p> <p>Animals see objects when light is reflected off that object and enters their eyes.</p> <p>Shadows are formed when light is blocked. You can change the size and shape of a shadow by moving the light source.</p> <p>Refraction is light bending through water or glass.</p> <p>Vocabulary: straight lines, light ray, absorb, Refraction, cornea, pupil, iris, lens, retina, optic nerve, opaque, transparent, translucent.</p>	<p>Evolution & Inheritance</p> <p>Living things have changed over time. Fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Living things produce offspring.</p> <p>Animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>Over time the characteristics that are most suited to the environment become increasingly common.</p> <p>Vocabulary: Offspring, Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics, Variation, Inherited, Environmental, Mutation, Competition, Survival of the Fittest, Evidence.</p>

