

Town Farm Endpoint Document

What we want our pupils to know, understand and remember at the end of each year

Curriculum Subject: **SCIENCE**

The Town Farm Science curriculum is built on the following:

Scientific Knowledge and Conceptual Understanding Working Scientifically

SCIENTIFIC KNOWLEDGE
'The content to be learned'

DISCIPLINARY and PROCEDURAL KNOWLEDGE
'Thinking like a Scientist; working scientifically'

KEY VOCABULARY

EYFS

Know that:

- There are similarities and differences between the natural world and contrasting environments.
- Plants need specific environments to grow – observe plants growing.
- Trees are plants. To know that some trees stay green all winter and are called evergreen.
- The main parts of a plant are: stem, leaf, roots, flower.

Know how:

- To ask simple scientific questions to develop curiosity and a simple hypothesis:
I wonder what will happen if?
Why did this happen?
What did I notice?
I wonder why?
- To talk about what they have observed and make simple connections that; recognise change and difference.

Owl Babies
Gruffalo
Supertato
From a Little Seed
The Gingerbread Man

Solid, liquid.
Change
Floating and sinking.
Melt

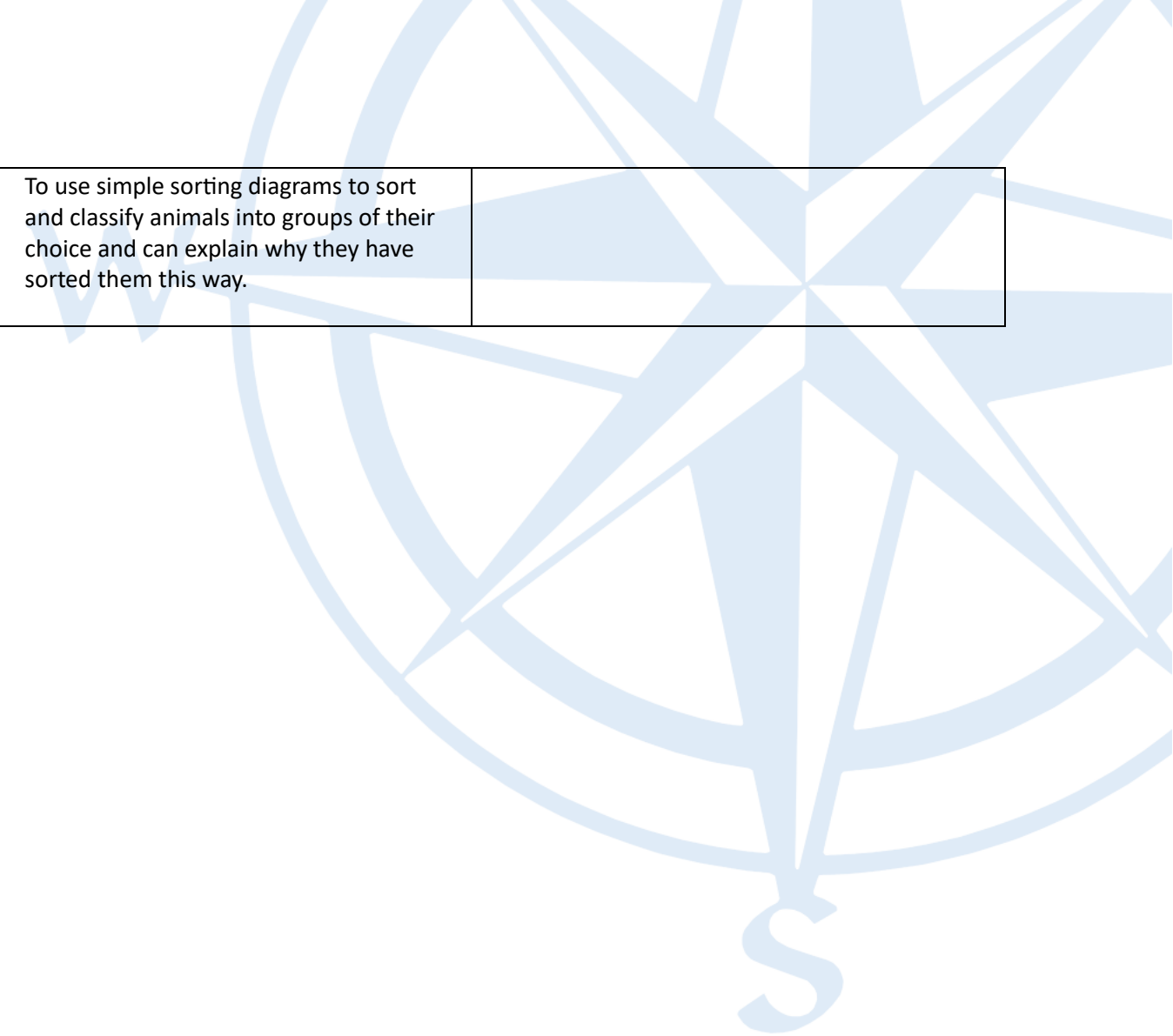
Why? How? What? When? Where?

- There are processes and changes in the natural world – seasons. Observe, record and talk about the changing seasons paying particular attention to the tree in their outside classroom. - Matter changes when heated and cooled – making jelly and Gingerbread Men. - People use science to do their jobs and they are called scientists. - To know and name the main parts of the human body. - To know the main senses – smell, touch, sight, hearing, taste - To know the basic animal groups – animal, human, fish, birds - To identify some materials that objects are made from – wood, plastic, metal, fabric, glass	- To describe the weather and how it makes them feel. (e.g. when it snows, it is cold). - To draw observations of animals and plants. - To describe and compare things that are different and things that are the same e.g. shapes / toys / resources. - To be able to sort items into different categories e.g. things that are the same colour / size.	Spring, Summer, Autumn, Winter, seasons, weather, sun, clouds, rain, snow, hail, wind, ice Plant, stem, leaf, roots, flower, evergreen Head, shoulders, back, arms, hands, fingers, thumb, body, legs, feet, toes, elbow, knee smell, touch, sight, hearing, taste animal, human, fish, birds Blackbird, robin, bluetit, magpie, crow wood, plastic, metal, fabric, glass
YEAR 1		
SCIENTISTS AND INVENTORS Know that: - Lego is made of plastic and understand its properties - Common zoo animals can be sorted into 4 groups based on their body parts - Plants can appeal to 4 different senses and name some plants - Vets look after animals - Some materials can keep us warm.	Know how: - To observe and describe the local weather - To use a pictogram to find their class's favourite plants - To use rainfall data to answer questions - To use a thermometer to take temperatures	- Lego, material, plastic, properties, Ole Kirk Christiansen - Astronaut, Mae Jemison, space, NASA, Endeavour - Zoo, enclosure, sort, group, wings, fur, fins, legs, George Mottershead - Senses, sensory, see, hear, feel, smell, texture, plants, leaves, flowers, horticulturist - Rainfall, rain, rain gauge, meteorologist, weather, Christopher Wren, Robert

Ole Kirk Christiansen, Mae Jemison, George Mottershead, Christopher Wren, Robert Hooke, Richard Towneley, George James Symons, Chester Greenwood and Linda Brown Buck made significant scientific discoveries and understand what these were.	- To take part in an test to investigate the best materials for keeping us warm - To interpret test data	Hooke, Richard Towneley, George James Symons - Animals, veterinarian, vet's, poorly, medicine, pet, tail, claws, wing, whiskers, fins - Winter, ear muffs, Chester Greenwood, warm, material, properties. - Biologist, Linda Brown Buck, smell, nose, sense, scent.
SEASONAL CHANGES: Autumn & Winter Know that: - There are four seasons in the UK and that these change throughout the year - The weather changes across the seasons and name the typical weather types in each season - The day length changes across the seasons - There are signs of autumn and winter and identify these changes in the trees and in clothes that we wear from autumn to winter - Some animals adapt in winter and understand how and why	Know how: - To observe and describe the weather in autumn and winter - To collect and record data about the weather in autumn and winter - To interpret simple data - To make a comparison between two seasons	- Seasons, autumn, winter, spring, summer, month, weather, event - Observe, observations, data, record, weather, symbol, temperature, rainfall, wind direction, thermometer, rain gauge, weather vane. - Observe, signs, record, leaves, conkers, conker husks, acorns, seeds, pine cones, blackberries. - North, south, east, west, millimetres (mm), degrees centigrade (°C) - Adapt, adaption, cope, survive, hibernate, hibernation, migrate, migration.
EVERYDAY MATERIALS Know that: - Wood, plastic, glass, metal, water, and rock are different types of everyday materials. - An object and the material it is made from can be distinguished from each	Know how: - To describe and compare the properties of everyday materials. - To sort objects in different ways by observing similarities and differences - To make a prediction and suggest a reason	- Materials, wood, plastic, glass, metal, water, rock. - Object, common, same. - Describe, properties, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, not bendy, waterproof, not waterproof, absorbent, not absorbent, opaque, transparent

other (e.g. the hairbrush is made from plastic) • Everyday materials have different properties and understand that this is why some are better suited for different tasks	• To suggest how a simple test could be made fair. • To use their observations, ideas and experiences to ask and answer simple questions. • To explain an outcome and suggest reasons for it	• Behave, test, record. • Investigation, prediction, predict, watch, test, record, sensible, results, decision. • Sort, group, compare.
SEASONAL CHANGES: Spring & Summer Know that: • There are four seasons in the UK and that these change throughout the year • The weather changes across the seasons and name the typical weather types in each season • The day length changes across the seasons • There are signs of spring and summer and identify these changes in the trees and in clothes that we wear from spring to summer • We need to protect our skin from the sun	Know how: • To observe and describe the weather in spring and summer • To collect and record data about the weather in spring and summer To interpret simple data • To make a comparison between the four seasons	• Seasons, weather, spring, winter, summer, autumn, nature, animals, plants. • seasonal change, nature, animals, plants, sun, rain, hot/warm, cold, temperature. • wind, temperature, rain, cloud, sun, snow, cold, warm, hot, fog, weather forecast, storm, temperature, rainfall, thermometer, rain gauge, wind direction • plant, tree, flower, leaf, blossom, bud, seedling, insect, bee, butterfly, bird, weather, wind, sun, cloud. • Daylight, data. • sun, rain, snow, wind, temperature, trees, flowers, wildlife, hibernate, buds
PLANTS Know that: • Seeds and bulbs are how plants make new plants and that they are (generally) planted in soil for them to grow • Seeds, bulbs and plants have different features which can be described.	Know how: • To make careful observations of seeds and plants using equipment. • To explore the world and ask simple scientific questions about how and why things happen.	• Seeds, bulbs, plants, planting, grow, soil, pots, observations, similar, different. • Roots, stem, leaves, flowers, petals, fruit, seed, bulb, observe. • Garden plants, wild plants, weeds, daisy, dandelion, buttercup, nettles, rose, pansy, iris, sunflower, sweetpea, lavender, clover, grass, identify.

• Seeds, bulbs and plants have similarities and differences and understand what these are • Flowering plants have a basic structure and to be able to identify and name these parts. • Wild and garden plants have names and to recall some of these. • Trees can be classed as evergreen or deciduous and understand what this means. • Trees have a basic structure and to be able to identify and name these parts. • Evergreen and deciduous trees have names and to recall some of these.	• To make close observations of plants, seeds and bulbs • To identify, classify and sort plants from their observations. • To identify similarities and differences between plants and begin to sort them according to a given criterion.	• Tree, roots, leaves, fruit, deciduous, evergreen, nuts, cones, trunk, bark, branches, blossom, identify, identification, oak, horse chestnut, cedar, beech, maple, hawthorn, sycamore, holly, yew, spruce, cypress. • Root, stem, fruit, vegetables, leaves, flower, seeds, sort, group. • Plant, wild plant, weed, garden plant, deciduous, evergreen, roots, stem, leaves, flowers, fruit, compare.
ANIMALS INCLUDING HUMANS Know that: • Animals can be categorised into fish, amphibians, reptiles, birds and mammals and be able to identify and name a variety of them. • There are observable features of animals from a range of groups and be able to describe and compare them. • Animals can be categorised by what they eat and be able to identify and name a variety of herbivores, carnivores or omnivores • Human body parts are located on different parts of the body and	Know how: • To observe and identify animals in the world around them. • To sort and classify animals into simple groups. • To make careful observations of animals in the same group and can use simple features to compare them. • To draw simple conclusions from observations. • To use simple secondary sources to find answers to sort and classify animals according to what they eat. • To use senses to carry out simple practical tests, using simple equipment.	• Animals, birds, reptiles, mammals, amphibians, fish, observe, identify • Compare, similarities, differences, observe, observations, features, animal groups, feathers, scaly skin, hair • Herbivore, carnivore, omnivore, diet, sorting. • Human body, leg, arm, neck, head, shoulder, elbow, hand, finger, stomach, hip, knee, feet, toe, eyes, ears, nose, mouth, skin, hair, tongue, ankle. • Senses, sight, taste, hearing, touch, smell, test, fair. • Diet, structure, sort, scales.



understand what some parts of the body do. • Humans have 5 senses and understand what they are and the part of the body they are related to.	• To use simple sorting diagrams to sort and classify animals into groups of their choice and can explain why they have sorted them this way.	
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SCIENTIFIC KNOWLEDGE 'The content to be learned'	DISCIPLINARY and PROCEDURAL KNOWLEDGE 'Thinking like a Scientist; working scientifically'	KEY VOCABULARY
YEAR 2		
LIVING THINGS AND THEIR HABITATS Know that: - Things can be grouped into living and non-living categories and identify things that are alive, used to be alive or have never been alive and understand how to know whether something is alive, used to be alive or has never been alive. - A habitat is the natural home or environment of an animal, plant, or other organism and identify and record some plants and animals in a local habitat. - One living thing depends on another living thing within a habitat. - A microhabitat is a small area which differs somehow from the surrounding habitat (e.g. the damp underside of a stone in a forest) and identify and record some minibeasts in a microhabitat. - A microhabitat meets the basic needs of a minibeast. - Living things are suited to different habitats.	Know how: - To gather and record data to help in answering questions - To record findings in a pictogram - To compare findings to help answer an enquiry question.	- Living, used to be alive, water, air, move, rocks, feed, bird, fish, metal, glass, plastic, group, grow, never alive, healthy, mammal, reptile, amphibian, habitat, basic needs - Shelter, safety, space, air, protection, healthy, suitable, suited, conditions, survive, depend, microhabitat, woodland, coastal, urban, local, minibeast.
SCIENTISTS AND INVENTORS Know that: Plants need water, light and a suitable temperature to grow and stay healthy.	Know how: To observe how plants grow	Greenhouse, light, water, temperature, plant, horticulturist, biome, Eden Project, tall, ruler, shoot.

• Greenhouses help plants grow healthily. • Flowering plants have a basic structure and to be able to identify and name these parts. • Doctors use science. • We should wash our hands to stay healthy and understand when and why. • Germs spread. • Some fabrics are more suitable to offer waterproof protection and why. • Food chains describes who eats whom in the wild; every living thing needs food to survive. • Pollution is the introduction of harmful material into the environment. • It is important to keep our oceans clean and understand what happens if they become polluted. • Energy comes from different sources which can be classified as renewable and non-renewable and understand what this means. • Jane Colden, Elizabeth Garrett Anderson, Louis Pasteur, Charles Macintosh and Rachel Carson made significant scientific discoveries / inventions and understand what these were.	• To explain how an activity demonstrates what Louis Pasteur discovered about the way germs spread • To use a ruler to measure the height of plants; • To use their ideas and observations to explain how doctors use science • To test materials to find out whether they are waterproof	• Botanist, Jane Colden, plant, leaf, flower, stem, observe, illustrate, sketch • Doctor, science, Elizabeth Garrett Anderson, surgery, healthy, exercise, diet, hygiene, clean. • Louis Pasteur, germs, handwashing, spread, disease, illness. • Charles Macintosh, waterproof, raincoat, properties, fabric • Rachel Carson, ocean, habitat, food chain, chemicals, pesticide, pollution • Energy, power, renewable, non-renewable, turbine, wind.
BIODIVERSITY - MINIBEASTS Know that: • Plants, animals and other organisms live in different habitats and microhabitats and can identify and name a variety of these. • Bees are important pollination and understand why.	Know how: • To observe the natural world by making careful observations using simple equipment. • To gather and record data in a variety of ways, such as simple tables, to help in answering question. • To draw simple conclusions.	• Ecosystem, biodiversity, minibeast, habitat, microhabitat, species, insect, leaf litter, environment, soil, flower, plant, tree • Pollen, nectar, pollination, pollinator minibeast, honey bee, bumblebee, flower, habitat, microhabitat,

- Animals, including humans have basic needs for survival and what factors influence this, such as their habitats. - Different types of animals and plants in a habitat depend on each other. - Worms are important for healthy soil and understand why. - Food chains describes who eats whom in the wild; every living thing needs food to survive - Plants need water, light and a suitable temperature to grow and stay healthy - Most living things live in habitats to which they are suited and understand how different habitats provide for the basic needs of different types of animals and plants.	- To use simple secondary sources to find answers. - To use simple and scientific language to a level consistent with increasing word reading and spelling knowledge.	environment, insect, energy, plant, conservation - Minibeast, conservation, predator minibeast, decomposer, food chain, pollinator minibeast, pollination, environment, consumer, producer, predator, prey, carnivore, omnivore, herbivore - Habitat, microhabitat, environment, minibeast, conservation, suitable, shelter, temperature, food source, basic needs - Soil, nutrients, decomposer, food waste, natural materials, healthy, unhealthy, water, plants, microhabitat, food sources, compost, decomposed, earthworm. - Ecosystems, biodiversity, minibeast, microhabitats, pollination, decomposer, pollinator, minibeasts, local environment, environment, conservation, advantages, protect.
PLANTS Know that: Plants need water, light and a suitable temperature to grow and stay healthy.	Know how: To recognise ways in which they might answer scientific questions.	- Seed, germination, sunlight, water, temperature, test, scientists, healthy, not healthy - Seed, food, food store, seed coat, germination, conditions,

• Seeds are made up of parts to help the plant to grow and understand which parts will grow into a plant and which part is its food. • Germination is when a seed begins to sprout. • Like all living things, a plant has a life-cycle. To understand what happens at each stage and order the events. • If a plant does not get everything it needs then it will begin to die and understand the signs to look for • Different plants need different amounts of water and light and different temperatures to grow and stay healthy. • Some plants are suited to their habitats.	• To carry out simple practical tests, using simple equipment. • To observe the natural world around them. • To notice links between cause and effect and explain findings to a variety of audiences in a variety of ways.	baby plant, roots, shoot, leaves, water. • Life cycle, seed, germination, conditions, shoot, roots, leaves, flowers, fruit, seed dispersal. • Water, sunlight, temperature, soil, test, observe, observations, scientists, compare • Water, sunlight, temperature, grow, healthy, unhealthy, strong, weak, droop, wilt. • Water, temperature, sunlight, adapted, species, leaves, roots, stem, spikes, waxy, fleshy, equator, rainforest, desert, mountains, Arctic, oxygen, shallow.
USES OF EVERYDAY MATERIALS Know that: • Some examples of everyday materials are wood, plastic, glass, metal, rock, brick, paper, cardboard. • Everyday materials have different properties which makes them better at some jobs than others. • Shapes of objects made from some materials can be changed by exerting force upon it • Recycling is the process of converting waste materials into new materials and objects and know the basic progress of recycling.	Know how: • To identify and name everyday materials • To record their observations • To compare the uses of different everyday materials. • To compare the suitability of different everyday materials	• Identify, materials, wood, plastic, glass, metal, rock, brick, paper, cardboard, uses, used, properties, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, not bendy, absorbent, not absorbent, waterproof, not waterproof, transparent, opaque. • Observations, record, classify, group, similar, safe, unusual. • Compare, suitability, suitable, unsuitable, purpose.

• There are advantages of recycling. • John McAdam invented Macadam, now known as tarmac, which revolutionised road building.		• Change, squashing, bending, twisting, stretching, squash, bend, twist, stretch • Recycle, recycling, reuse, biodegradable, environment, landfill site, recycling depot, shredded, melted, pellets, raw materials, greenhouse gases. • Invent, macadamisation, macadam road, patent, Parliament, compensated, royalties, knighthood, tar, tarmacadam, tarmac.
ANIMALS INCLUDING HUMANS Know that: • Animals, including humans, have offspring which grow into adults and can identify and match several animal offspring and their adult forms. • Different animal groups have different characteristics in their offspring. • All living things have life-cycles and understand the main stages of at least two different animal life cycles, which can be compared. • Humans grow and develop through each life cycle stage. • There are three basic needs that all animals need to survive and understand the specific needs of a given animal. • Exercise is important for the human body.	Know how: • To sort and classify animals into simple groups. • To use scientific language to talk about their findings. • To notice patterns and relationships between the groups. • To use simple secondary sources to find answers to a question. • To ask simple scientific questions and use scientific language to answer them. • To carry out simple practical tests and use their observations and ideas to suggest answers to questions.	• Adult, develop, young, offspring, live young, hatchling, hatch, larvae, eggs, carnivore, herbivore, omnivore, mammal, reptile, amphibian, fish, bird. • Life cycle, live young, egg, metamorphosis, larva(e), pupa, chrysalis, baby, toddler, child, teenager, tadpole, froglet, duckling, hatchling • Grow, develop, life cycle, life stages, human, baby, toddler, child, adult, independent. • Air, oxygen, breathe, water, food, diet, omnivore, herbivore, carnivore, care, survival, survive, budgerigar, chameleon, human, stick. • Exercise, healthy, activity, active, heart rate, pulse,

• Food can be classified into basic food groups and understand the importance of a balanced diet. • It is important to be hygienic and how to do this.		muscle, blood, measure, run, jump, skip, hop, minute, seconds, what do you think will happen? (prediction), observations • Healthy, health, diet, nutrition, balanced, food, fruit, vegetable, dairy, carbohydrates, protein, alternatives, breakfast, lunch, dinner, snacks, sugar, fat, hygiene, hygienic, germs, illness, disease, spread, wash, clean, sneeze, cough, soap, water, what do you think will happen? (prediction), what happened? (results), what have we found out? (conclusion)
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SCIENTIFIC KNOWLEDGE 'The content to be learned'	DISCIPLINARY and PROCEDURAL KNOWLEDGE 'Thinking like a Scientist; working scientifically'	KEY VOCABULARY
YEAR 3		
FORCES AND MAGNETS Know that: - Forces are pushes and pulls and Identify the type of force required to carry out an action. - Friction is a force that slows objects down and . - A magnet produces an invisible pulling force. - Some materials are magnetic or non-magnetic. - Some magnets are stronger than others. - Bar magnets have different poles and identify when magnets will repel or attract based on their poles.	Know how: - To sort materials according to whether they are magnetic or not. - To investigate the force of friction produced by different surfaces - To investigate magnet strength - To use a magnetic compass with four points. - To make a prediction. - To construct a bar chart on labelled axes. - To form a conclusion from results - To explain their predictions and conclusions using key words or prompts	- Force, push, pull, friction, surface. - Force, magnet, magnetic, attract, magnetic field - Pole, north, south, repel, compass, direction.
SCIENTISTS AND INVENTORS Know that: - A botanist is a scientist who studies plants. - Botanists brought new plants to Britain. - Humans have skeletons for support, protection and movement. - Plants need water, light and a suitable temperature to grow and stay healthy. - A fossil is a preserved remnant, impression, or trace of an ancient organism that has been buried in Earth's crust.	Know how: - To identify bones in x-ray images - To identify differences, similarities or changes related to simple scientific ideas and processes - Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties	- Plant, grow, water, light, air, heat, requirements, explore, expedition, botanist. - Marie Curie, radiation, element, chemistry, physics, x-ray, bones, support, protection, movement. - Agriculture, crops, nutrients, soil, crop rotation. - Sedimentary, fossil, strata, William Smith, geology, Dr Lisa White.

• Scientists use fossils to date rocks today. • Magma is molten rock under the Earth's crust. • Igneous rock is formed by magma cooling. • The Earth has a solid iron core and how this creates igneous rocks. • Concave and convex mirrors are curved mirrors and identify devices and inventions that use curved mirrors. • Light is reflected from surfaces. • Electromagnets are magnets powered by electricity and understand how the first electromagnets were developed. • Joseph Banks, Marie Curie, George Washington Carver, William Smith, Inge Lehmann and Arthur James Wilson made significant scientific discoveries / inventions and understand what these were.		• Core, seismology, earthquake, magma, molten, liquid, solid. • Concave, convex, reflect, image, light, rays, Arthur James Wilson. • Magnet, field, force, electromagnet, electricity, circuit, power, battery. • Inventor, continent, discovery.
ROCKS Know that: • There are three types of naturally occurring rock and describe how they are formed and compare different types of rock based on their appearance. • Rocks can be grouped based on their properties and describe similarities or differences between the properties of different rock types. • Weathering and erosion cause rocks to change over time and understand the different types of weathering. • Fossils are formed and how their formation links to the rock cycle.	Know how: • To gather, record and present findings from research (such as secondary sources) in a variety of ways, e.g. fact files, answers to questions or giving explanations. • To make systematic and careful observations. • To use straightforward scientific evidence (from observations, measurements or secondary sources) to answer questions or support their understanding.	• volcano, changes, natural, form, heat, pressure, appearance, rock, hard, soft, chalk, clay, group, marble, slate, purpose, fossil, living things, bones, layers, footprints, compost, soil, air, water, properties • minerals, compare, human-made, formation, permeable, impermeable, durable, buoyancy, biological, physical, chemical, decay, organic matter, microorganism, minibeast, topsoil, nutrients, permeability

Soils are made from rocks and organic matter and understand the properties of common soil types, including physical appearance and permeability.	- To identify, group and classify things, using simple keys when appropriate. - To set up a simple enquiry and use straightforward scientific evidence from observations to answer questions or support conclusions. - To use correct scientific vocabulary when answering enquiry questions. - To set up and carry out simple comparative and fair tests.	igneous, sedimentary, metamorphic, extrusive, intrusive, lava, magma, sediment, compaction, cementation, granite, sandstone, basalt, weathering, erosion, fossilisation, body fossil, trace fossil, coprolite, palaeontology, subsoil, bedrock, clay-based soil, sandy soil, chalky soil, silt soil, loam soil
LIGHT Know that: - We need light to see and be able to identify light sources. - Light travels in a straight line. - Dark is the absence of light - Some surfaces are reflective and identify these, explaining the properties of materials that reflect light well. - A mirror appears to reverse an image. - The Sun can damage our eyes and know how to protect our eyes. Identify some parts of the eye. - Objects can be opaque, translucent or transparent. - A shadow is formed when a solid object blocks light. - Shadows can change size and understand why	Know how: - To set up reliable and accurate investigations. - To make and explain predictions. - To make and record accurate observations. - To use scientific language to explain their findings. - To be able to ask and answer questions based on their learning using scientific language	- light, source, dark, reflect, see, illuminate, visible. - Reflect, mirror, light, smooth, shiny, rays, rough, scatter, reverse, beam. - Light, sun, beneficial, dangerous, glare, bright, damage, UV light, UV rating, visible spectrum, pupil, retina, protect, direct, sunglasses, hat, brim. - Light, energy, beam, ray, travel, straight, opaque, translucent, transparent, block, shadow. - observe, pattern, size, distance, change
PLANTS Know that:	Know how:	Roots, stem, trunk, leaves, flowers, anchor, nutrients,

• Different parts of flowering plants have different functions • Flowering plants have a life cycle and understand the key events. • Plants need water, light and a suitable temperature to grow and stay healthy. • Water is transported from the roots to the rest of the plant.	• To predict what will happen in an investigation and explain their ideas. • To set up reliable and accurate investigations. • To make and record accurate observations. • To use scientific language to explain their findings.	transport, seeds, carbon dioxide, sunlight, absorb. • Air, light, water, nutrients, soil, investigate, explore, predict, observe • Prediction, conclusion • Transport, evaporate, compare, temperature • Petals, sepal, stamen, anther, filament, stigma, style, ovary, ovule, pollen tube, pollen, pollination, fertilisation. • Dispersal, pollination, fertilisation, germination, life cycle, stages.
ANIMALS INCLUDING HUMANS Know that: • Humans and animals need have basic needs to stay healthy. • Humans need a balanced diet from a variety of nutrients in different food groups for a healthy diet. • Different animals require a different balance of nutrients . • Food labels can give a range information. • Animals and humans have different skeletons and understand the features and advantages and disadvantages of different types of skeleton. • The parts of a human skeleton have different names	Know how: • To group and classify foods into food groups and identify the nutrients that different foods provide. • To present data from food labels in a table to help in answering questions. • To group and classify animal skeletons and can use scientific vocabulary to talk about animal skeletons. • To set up a test that is fair and can draw simple conclusions from their results. • To show their understanding of a process by using scientific language and a labelled diagram.	• Food groups, nutrients, nutrition, nutritious, carbohydrates, proteins, fats, water, fibre, vitamins, minerals, sugars, Eatwell Guide, healthy, survive • Food groups, nutrients, nutrition, nutritious, carbohydrates, proteins, fats, water, fibre, vitamins, minerals, sugars, Eatwell Guide, healthy, survive, omnivore, carnivore, herbivore, saturated fats, unsaturated fats, sugar, salt, food labels. • Vertebrates, invertebrates, skeleton, exoskeleton,

• Muscles support movement in humans and animals and have a simple understanding of how muscles work.		endoskeleton, hydrostatic skeleton, protection, support, movement, bones, advantages, disadvantages • Skeleton, protection, support, movement, bones, skull, clavicle, scapula, ribcage, vertebral column, humerus, ulna, radius, femur, tibia, fibula, fair, test, prediction (What do you think will happen?), results (What happened?), measure, investigation, data, conclusion (What have we found out?), evaluation. • Muscles, movement, skeletal muscles, voluntary muscles, involuntary muscles, tendons, joints, biceps, triceps, contract, shorten, relax, lengthen, humerus, radius, ulna, bones, skeleton, scientific model. • Fair, test, scientific question, working scientifically, joints humerus, ulna, radius, femur, tibia, fibula,.
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SCIENTIFIC KNOWLEDGE 'The content to be learned'	DISCIPLINARY and PROCEDURAL KNOWLEDGE 'Thinking like a Scientist; working scientifically'	KEY VOCABULARY
YEAR 4		
LIVING THINGS AND THEIR HABITATS Know that: • living things can be grouped in a variety of ways. • Vertebrates can be classified into mammals, birds, reptiles, amphibians and fish. • Different invertebrate groups have different characteristics. • Knowledge of animal groups can help them design a classification key • There are positive and negative features of their local environment and recognise the impact they have on living things. • Certain species have become endangered and explain what humans are doing to help.	Know how: • To identify changes, patterns, and similarities and differences. • To identify, group and classify vertebrates, using a simple key. • To make careful and systematic observations in field enquiries. • To identify criteria for identifying, grouping and classifying living things. • To gather and record their observations during a field enquiry. • To gather scientific evidence to answer a question.	• insect, plant, milk, animal, litter, bird, group, fish, scale, egg, key, sort, shared, unique, local area, pond, dirty, clean, danger, natural, furry, scaly, smooth, legs, moist, slimy • organism, species, classification, characteristic, habitat, criteria, impact, environment, vertebrate, invertebrate, predator, prey, carnivore, herbivore, omnivore, Venn diagram, Carroll diagram, exoskeleton, pollution, influence, positive, negative, decline, spine, mammal, reptile, amphibian, artificial, human-made • warm-blooded, cold-blooded, biodiversity, endangered species, extinct, metamorphosis, classification key, arachnid, annelid, mollusc
SCIENTISTS AND INVENTORS Know that:	Know how:	• Conservationist, rainforest, deforestation, species, erosion,

• Environments can change and that this can sometimes pose dangers to living things. • Vibrations from sounds travel through a medium to the ear. • A switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Materials can be grouped in the categories solid, liquid or gas. • Some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). • Many common electrical appliances run on electricity and identify these. • Humans have different types of teeth and understand their functions. • Humans have to look after their teeth and identify ways to do so. • Solar power is a good source of energy. • Gerald Durrell, Alexander Graham Bell, Maria Telkes, Garrett Morgan, Antoine Lavoisier, Joseph Priestley, Lord Kelvin, Thomas Edison and Lewis Latimer made significant scientific discoveries / inventions and understand what these were.	• To set up simple practical enquiries and report on findings from enquiries • To report on findings, including oral and written presentations and displays • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • To take accurate measurements using standard units and a range of equipment, including thermometers	nutrients, Gerald Durrell, extinct, endangered • Sound, transmit, telephone, patent, speech, deaf, Alexander Graham Bell. • Energy, electricity, solar, temperature, Celsius, sun, heat, renewable, fuel, energy source, pollution. • Electricity, circuit, series, bulb, wire, switch, cell, battery, crocodile clips. • Theory, phlogiston, gas, oxygen, burn, combust, Antoine Lavoisier, Joseph Priestley. • Temperature, scale, absolute zero, Lord Kelvin, cool, cold, particles, solid, liquid, gas, state. • Electricity, appliance, generate, power, Thomas Edison, Lewis Latimer, lightbulb, carbon filament. • Toothpaste, abrasive, teeth, dentist, Washington Sheffield.
ELECTRICITY Know that: • Electrical appliances can be mains or battery-powered and understand how to identify them	Know how: • To group and classify appliances and record their findings using labelled diagrams.	• Appliance, mains, battery, electricity, powered, device, classify.

• Electrical circuits are made up of different circuit components and explain what they do. • These components can be used to build series circuits, identifying and understand whether they are complete or incomplete. • Electrical conductors and insulators affect circuits and give several examples of these and what they do. • Different switches can be used in circuits and explain how they work	• To use a range of electrical equipment and record findings using labelled diagrams. • To make predictions, use a range of electrical equipment and draw simple conclusions from their results. • To set up a simple practical enquiry, make predictions and draw simple conclusions from their results. • To report and present their results and conclusions to others in oral forms. • To use straightforward scientific evidence to answer questions and identify similarities, differences, patterns and changes relating to simple scientific ideas and processes.	• Electricity, circuit, series circuit, bulb, wire, buzzer, switch, cell, battery, component, diagram. • Complete circuit, incomplete circuit, battery, energy ball, conductor. • Insulator, material, object, equipment, prediction (what do you think will happen?), results (what happened?), conclusion (what have we found out?) • Closed, open, on, off, slide switch, toggle switch, selector switch, push button switch.
STATES OF MATTER Know that: • Materials can be sorted into solids, liquids and gases and understand their properties • Particles behave differently in solids, liquids and gases • Heating causes melting, and cooling causes freezing and that these are opposite processes • The melting point of water is 0°C; the boiling point is 100°C • The water cycle is a continuous process and understand its stages, explaining why the water we have on Earth today is the same water that has been here for millions of years • Evaporation and condensation are processes in the water cycle and demonstrate using practical examples	Know how: • To predict what will happen in an investigation • To make observations • To set up reliable and accurate investigations. To make and explain predictions. • To make and record accurate observations. • To use scientific language to explain findings • To ask and answer questions based on their learning using scientific language	• Solid, liquid, gas, particles, state, material, properties. • Gas, carbon dioxide, state, matter, material, weight, mass • Solid, liquid, particles, melt, freeze, thermometer, temperature. • Condense, evaporate, process, state, water, ice, water vapour. • Evaporation, particles, liquid, gas, weight, dry, energy, state, heat. • Precipitation, collection, clouds, rain, sleet, hail, snow.

• Explain the behaviour of the particles in solids, liquids and gases. • A material's melting and freezing point is the same temperature and why • Heating and cooling can cause materials to evaporate and condense and understand that the higher the temperature, the quicker water evaporates		
SOUND Know that: • Sounds are around us and be able to describe sounds around them • Sound sources vibrate to make sounds • Sounds can be high or low (pitch) / loud and quiet (volume) • There are patterns between the pitch of a sound and the features of the object that made the sound. • Vibrations change when the loudness of a sound changes • Sounds change over distance and understand why. • We hear and interpret sounds through our ears • Sounds travel to reach our ears and understand how • Sounds travel differently through different materials. • Sounds travel better through solids than gases and understand why • Some materials absorb sound and understand why	Know how: • To predict what will happen in an investigation • To set up reliable and accurate investigations. • To make and explain predictions. • To make and record accurate observations. • To use scientific language to explain findings. • To ask and answer questions based on their learning using scientific language	• Sound, vibration, volume • Vibration, amplitude, loud, quiet, travel, wave, particles, ear • High, low, pitch • Distance, loud, quiet, telephone, transmit. • Soundproof, absorb.

ANIMALS INCLUDING HUMANS

Know that:

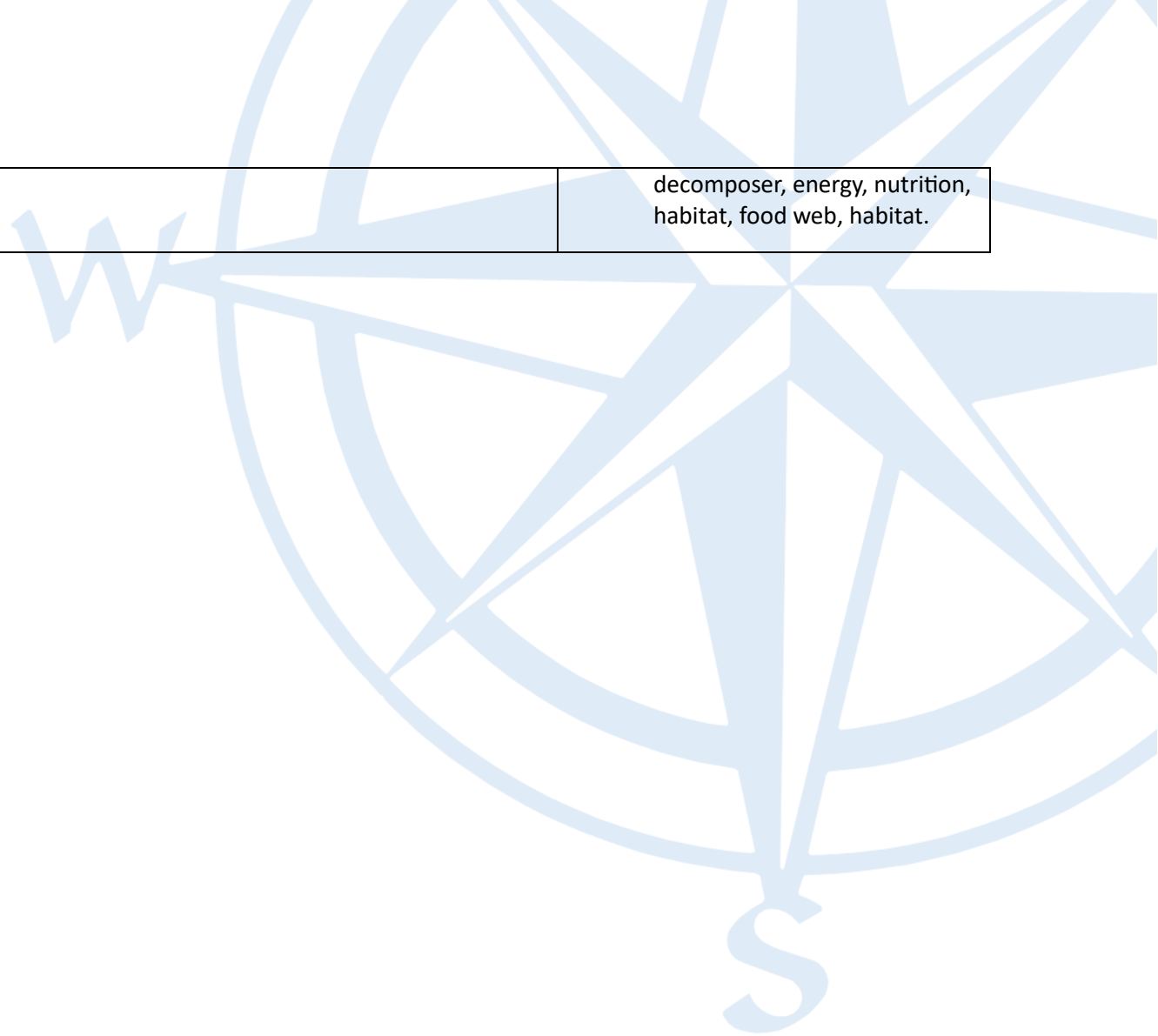
- Humans have teeth in their mouths and can name the different types
- Different teeth have different functions.
- Tooth decay is damage to a tooth's surface or enamel and occurs when too much sugar is consumed without proper cleaning
- We need to look after our teeth and how to do this
- Humans have a digestive system and understand its simple functions
- Food chains describes who eats whom in the wild and identify producers, predators and prey

Know how:

- To set up and carry out simple comparative and fair tests
- To observe changes over time
- To draw simple conclusions from their results and suggest improvements to investigations
- To record findings using drawings and keys
- To use straightforward scientific evidence to answer questions or to support their findings
- To gather, record, classify and present data in a variety of ways to help in answering questions
- To identify similarities, differences, patterns and changes relating to simple scientific ideas and processes

- Tooth decay, nutrient, food groups, teeth, digest, digestion, mouth, tongue, saliva, dental plaque, enamel, prediction (what do you think will happen?), method, results (what happened?)
- Conclusion (What have we found out?), evaluation, observation (What do you notice?), teeth, tooth decay, function, baby (milk) teeth, adult teeth, incisor, canine, premolar, molar, wisdom teeth.
- Digest, digestion, digestive system, nutrients, organ, mouth, tongue, salivary gland, saliva, oesophagus, stomach, liver, gall bladder, pancreas, duodenum, small intestine, large intestine, rectum, anus, faeces (poo), bile, enzymes
- Food chain, producer, consumer, predator, prey, herbivore, carnivore, omnivore, scavenger, decomposer, energy, nutrition, habitat, food web.
- Food chain, producer, consumer, predator, prey, herbivore, carnivore, omnivore, scavenger,

		decomposer, energy, nutrition, habitat, food web, habitat.
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SCIENTIFIC KNOWLEDGE 'The content to be learned'	DISCIPLINARY and PROCEDURAL KNOWLEDGE 'Thinking like a Scientist; working scientifically'	KEY VOCABULARY
YEAR 5		
PROPERTIES OF MATERIALS Know that: - Materials have different properties with regards to transparency, hardness and magnetism. - Appropriate and inappropriate materials can be selected for a range of purposes, giving explanations as to why these materials are suitable or unsuitable. - Insulators and conductors can be sorted and classified by their thermal conduction properties and can refer to this when giving recommendations of materials to use for particular purposes. - Electrical insulators and conductors can be sorted and classified by their electrical conduction properties and can refer to this when giving recommendations of materials to use for particular purposes. - Dissolving is different to melting and understand both processes. - Magnetism, sieving, evaporation and filtration are methods to separate a mixture of materials and know when to select each. - There are reversible and irreversible changes and understand the differences between them and can identify some examples of each.	Know how: - To plan an investigation to answer a question. - To identify variables that need to be controlled. - To identify which variables in an experiment are independent, dependent and controlled variables. - To explain how they will keep the controlled variables the same. - To explain how precise their results are. - To suggest improvements to their enquiry. - To explore and talk about their ideas and scientific experiences to raise enquiry questions about scientific phenomena. - To draw on their experiences of scientific methodology and past results to suggest how to approach further enquiries. - To create informative, labelled scientific diagrams to share the results of enquiries they have carried out	- Material, purpose, heat, electricity, separate, mixture, filter, sieve - Hardness, rigid, flexible, brittle, variable, thermometer, electrical, liquid, solid, evaporate, residue - Property, transparency, magnetism, thermal insulation, thermal conduction, insulator, conductor, circuit, dissolve, soluble, insoluble, solution

SCIENTISTS AND INVENTORS

Know that:

- Naturalists and animal behaviourists study animals
- Evidence is used to solve crimes
- Chromatography is a process used to separate mixtures
- Mixtures can be identified by analysing its components
- Margaret Hamilton's software inventions changed the way computer programmes were used
- The largest and smallest planets in our solar system
- Bees are in decline globally and understand the life cycle of bees
- Materials are selected for uses depending on their properties
- David Attenborough, Margaret Hamilton, Eva Crane, Stephanie Kwolek, Neil deGrasse Tyson and Leonardo Da Vinci, made significant scientific discoveries / inventions and understand what these were.

Know how:

- To explain whether evidence supports or refutes ideas
- To order key dates in space travel on a timeline
- To use chromatography to separate mixtures
- To record their results accurately and explain what they show
- To use their results to make new predictions
- To explain their own theories and ideas

- David Attenborough, documentary, wildlife, animals, naturalist
- CSI, technician, chromatography, evidence, support, refute
- Margaret Hamilton, Apollo, mission, Moon, astronaut, spacecraft, NASA, software, engineer.
- Solar system, astrophysics, orbit, gas, atmosphere, liquid, solid, Galaxy, Milky Way, universe, telescope, terrestrial planets, gas giants, ice giants, dwarf planets, Sun, Moon, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, Ceres, Haumea, Makemake, Eris.
- Eva Crane, bee, decline, honey, egg, larvae, pupa
- Materials, properties, hard, soft, light, heavy, dense, density, flexible
- Leonarda da Vinci, anatomy, proportions
- Stonehenge, astronomy, Midsummer, midwinter, sun, moon, eclipse, luna, align, theory, calendar

FORCES Know that: • Forces are pushes and pulls • Gravity is a force that pulls objects down, discovered by Isaac Newton • That friction, including air and water resistance has an effect on moving objects • There are different variables in an investigation • Galileo's 'Tower of Pisa' experiment investigated gravity and air resistance • Streamlined shapes have an effect on friction • Friction is used in brake pads; • Weight is different to mass and explain the link between the weight and mass of an object	Know how: • To predict what will happen in an investigation • To make observations • To accurately measure an object's weight and mass • To identify the variables in an investigation • To make observations and conclusions • To make and record accurate observations • To use scientific language to explain their findings • To use their results to make generalisations and further predictions • To be able to ask and answer questions based on their learning using scientific language	• Force, push, pull, gravity, air resistance, water resistance, friction. • Gravity, force, Isaac Newton, newton, newton meter, weight, mass. • Gravity, air resistance, Galileo Galilei, mass, parachute, force, prediction, investigation, measure, observe, variables, results • Water resistance, streamline. • Friction, force, brake, prediction, investigation, measure, observe, variables, results. • Mechanism, lever, gear, cog, pulley, machine.
EARTH AND SPACE Know that: • A sphere is a three-dimensional object that is round in shape • The solar system has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. There are five officially recognised dwarf planets in our solar system: Ceres, Pluto, Haumea, Makemake, and Eris. • The planets orbit the Sun. • Night and day occur due to the Earth's rotation on its axis. • Night and day occur at different times in different places on Earth.	Know how: • Identify scientific evidence • Report and present findings from enquiries with support • To make observations and conclusions • To use scientific language to explain their findings • To be able to ask and answer questions based on their learning using scientific language	• Earth, Sun, Moon, sphere, circle, evidence, flat, round. • Star, sun, planet, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune. • Orbit, rotate, heliocentric, geocentric. • Day, night, rotate, axis, shadow. • Daylight, night time, distance, light, dark. • Rotate, face,

• That the Moon orbits the Earth not the Sun. • Historically, the Earth was believed to be two different shapes and understand the scientific evidence that has been used to support or refute ideas. • All of the planets have different features and understand some of these. • The planets in the solar system are ordered • The planets move around the sun. • There is a difference between heliocentric and geocentric ideas of planetary movement. • The Moon orbits the Earth.		
LIVING THINGS AND THEIR HABITATS Know that: • Flowers are made of different parts and understand the function of these. • There is a difference between sexual and asexual reproduction. • Plants can be pollinated and understand how this can happen, identifying the features of plants pollinated by insects or the wind. • New plants can grow other than from seed. • There are different stages in the process of sexual reproduction. • There are different types of mammals. • Some animals undergo metamorphosis and identify familiar animals which do. • Mammals, birds, insects and amphibians have life cycles and be able to order these. • There are similarities and differences between the life cycles of different plants and animals.	Know how: • Identify scientific evidence • Report and present findings from enquiries with support • To make observations and conclusions • To use scientific language to explain their findings • To be able to ask and answer questions based on their learning using scientific language	• Sexual, asexual, reproduction, gamete, cell, pollen, ovule, fusion, fertilisation, pollination, cuttings, roots • Sexual, reproduction, gamete, male, female, sperm, ovum, penis, vagina, fertilise, pregnancy, gestation, montreme, marsupial, young • Family tree, chimpanzee, Jane Goodall, life cycle, endangered, extinct • Metamorphosis, amphibian, insect, transform, larvae, pupa, nymph, egg. • Egg, yolk, albumen, embryo, bird, mammal, amphibian, insect, plant, life cycle, reproduce.

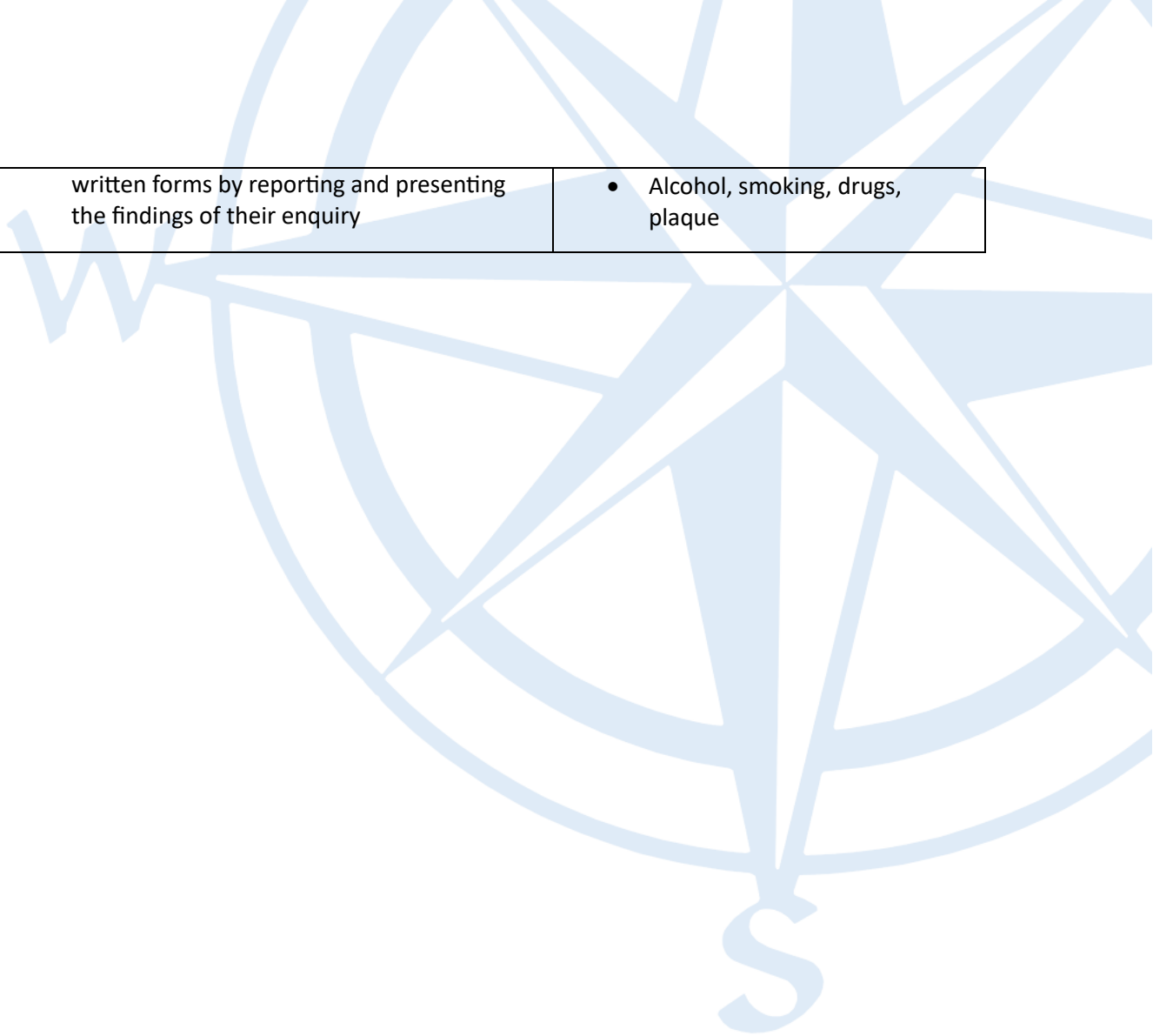
ANIMALS INCLUDING HUMANS Know that: • Gestation periods are different for different animals, including humans. • Humans change as they develop from fertilisation to birth. • Babies grow and develop into children • There are changes which occur during puberty and understand these • There are changes which occur in old age. • There are different stages of human development	Know how: • To plan different types of scientific enquiries to answer questions • To record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • To 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. • To identify scientific evidence that has been used to support or refute ideas or arguments	• Gestation, growth, foetus, embryo, animals, vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, flatworms, arachnids, crustaceans, insects, sperm, egg, offspring, fertilisation, prenatal, development • Puberty, changes, breasts, pubic hair, hips, facial hair, body hair, genitals, muscular development, menstruation, adolescence, growth • life cycle, adulthood, life expectancy, old age, human, growth rate, decrease, changes, compare • Baby, toddler, child, teenager, adolescence
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SCIENTIFIC KNOWLEDGE 'The content to be learned'	DISCIPLINARY and PROCEDURAL KNOWLEDGE 'Thinking like a Scientist; working scientifically'	KEY VOCABULARY
YEAR 6		
ELECTRICITY Know that: • Circuit symbols are used to represent different elements of an electrical circuit • Major discoveries led to the widespread use of electricity and that our understanding of electricity has changed over time • Increasing or decreasing the voltage on different parts of a circuit has different effects •	Know how: • To use circuit symbols to draw circuit diagrams • be able to plan and conduct an investigation; • plan an investigation based on the results of a previous investigation; • decide how to record data • decide which variables to control while planning an investigation; • decide how to report their findings; • make new predictions based on the previous results; • select an appropriate scientific enquiry	• Electricity, Thomas Edison, Nikola Tesla, Alessandro Volta, Michael Faraday, home, alternating current, direct current, battery, cell. • Bulb, battery, cell, wires, switch, motor, buzzer, scientific, informal, circuit, diagram • Voltage, circuit, bulb, wires, cell, battery, buzzer, motor, switch, circuit diagram, brightness, loudness, increase, decrease • fair test, comparative test, practical enquiry, wire, length
LIGHT Know that: • Light travels in straight lines. • Light enables us to see. • Reflection is light bouncing off a surface and refraction is light bending or changing direction • Light enables us to see an object reflected in a mirror • The angles of incidence and reflection are equal • The visible spectrum is the band of the electromagnetic spectrum that is visible to	Know how: • To predict what will happen in an investigation • To set up reliable and accurate investigations. • To make and explain predictions • To make and record accurate observations • To use scientific language to explain their findings. • To ask and answer questions based on their learning using scientific language	• Light, source, travel, straight line, waves, ray, beam, wave, photon, energy, vacuum • Reflection, angle, incidence, normal, periscope • Refraction, bend, lens, focus, focal point, transparent • Refract, spectrum, wavelength, colour, prism, visible, transparent, rainbow

the human eye and that different colours have different wavelengths • Isaac Newton discovered information about light and colour • Objects block light to form shadows • Filters reflect or absorb different colours of light		• Filter, colour, light, see, reflect, absorb • Shadow, light, source, opaque, size, distance, change, tilt, cast
EVOLUTION AND INHERITANCE Know that: • The terms adaptation, evolution and natural selection are used to describe how species have changed over time • The development of evolutionary ideas and theories has changed over time • Human evolution has occurred over time and compare modern humans with those of the same genus and family • There are inherited traits and adaptive traits • Adaptations are random mutations • Fossil evidence supports the idea of evolution • There are differences between selective and cross-breeding • Living things evolve via the process of natural selection • Genes and DNA are units of hereditary information. • There are ethical issues of human intervention in the process of evolution by natural selection • adaptation and evolution is not a uniform process for all living things	Know how: • To use scientific language to explain their findings. • To ask and answer questions based on their learning using scientific language	• Inheritance, animals, plants, humans, parent, biological parent, offspring, similarities, differences, characteristics, variation • Adaptation, environment, habitat, DNA, genes, adaptive traits, mutation, replication, accidental • Evolution, inheritance, theory of evolution, fossil, fossil records, evidence, complete, incomplete, ancestor, common ancestor, traits • Human, evolution, adaptation, apes, mammals, homo sapiens, family, genus, species, taxonomy • Evolution, adaptation, human intervention, selective breeding, environment, inherited traits, genetic, genes, modification
SCIENTISTS AND INVENTORS Know that:	Know how:	• Stephen Hawking, astrophysicist, black hole, gravity, density, light, event

• Stephen Hawking developed theories about how black holes are formed and how they behave • Libbie Hyman was a zoologist who researched the classification and anatomy of invertebrates • Marie Maynard Daly was a scientist who researched diet and circulatory system health • Diet affects the way the body functions • There is a link between saturated fat in our diets and high cholesterol levels • Alexander Fleming discovered penicillin • Mary Leakey was a British paleoanthropologist who discovered some of the most ancient and crucial fossils of our human ancestors • Dr Daniel Hale Williams was the first doctor to perform a successful open-heart surgery and the founder of Provident Hospital, the USA's first Black-owned hospital. • Steve Jobs was the co-founder of Apple • Stephen Hawking, Libbie Hyman, Marie Maynard Daly, Alexander Fleming, Mary Leakey, Daniel Hale Williams and Steve Jobs made significant scientific discoveries / inventions and understand what these were.	• To use scientific language to explain their findings. • To ask and answer questions based on their learning using scientific language	horizon, matter, amyotrophic lateral sclerosis (ALS), also known as motor neurone disease (MND) • Libbie Hyman, classification, taxonomy, zoologist, vertebrate, invertebrate, characteristics • Cholesterol, saturated fat, unsaturated fat, arteries, circulatory system, balanced diet • Alexander Fleming, penicillin, antibiotic, microorganism, bacteria, correlations, colony/ colonies, diameter, exposed • Mary Leakey, fossil, evolution, human, hominin, ancestor, species, grid reference, Laetoli, excavation, Olduvai Gorge, species, illustrator • Arteries, veins, heart, capillaries, transport, oxygen, lungs, carbon dioxide, nutrients, red blood cells, white blood cells, antiseptic, anaesthetic, transfusion, chambers, multiracial, segregation • Steve Jobs, technology, computer, Apple, component, circuit.
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LIVING THINGS AND THEIR HABITATS Know that: • Carl Linnaeus developed a classification system. • There are different types of microorganisms and name them. • There are reasons for the classification of animals, using examples as a guide. • Living things can be classified using the Linnaean system. • Creatures can be classified based on their characteristics. • There are useful and harmful effects of different microorganisms and describe them. • Different organisms have different cell structures and be able to describe and compare them.	Know how: • To sort and group animals based on their features and characteristics, using examples as a guide • To set up an investigation into harmful microorganisms • To use the Linnaean system to classify animals • To draw conclusions based on their results • To identify the variables in an investigation • To explain their predictions and conclusions in an investigation	• Classify, sort, group, similarities, differences, compare. • Carl Linnaeus, Linnaean, classification, standard, domain, kingdom, phylum, class, order, family, genus, species. • Microorganism, fungus, bacteria, virus, microscopic, mould. • Cell, eukaryote, nucleus, DNA, fungus. • Organism, species, vertebrates, invertebrates, mammals, birds, amphibians, reptiles, fish, insects, arachnids, molluscs, crustaceans, annelids, plants, flowering, non-flowering
ANIMALS INCLUDING HUMANS Know that: • There are three main parts of the circulatory system and describe the job of the heart. • There are important jobs of the blood vessels and blood. • Heart rate is affected by exercise. • Regular exercise is important for a healthy body. • Diet and exercise affect the body and understand how. • The impact of drugs and lifestyle on the way bodies function.	Know how: • To identify scientific evidence that has been used to support or refute ideas or arguments. • To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • To record data and results of increasing complexity using classification keys, tables, scatter graphs, bar and line graphs • To report findings from enquiries, including conclusions and degree of trust in results, in	• Heart, blood vessels, blood, pump, nutrients, waste products, muscle, oxygen, chambers, circulatory system, oxygenated, deoxygenated, veins, arteries, capillaries. • Plasma, platelets, red blood cells, white blood cells, circulatory system. • Exercise, blood, pump, diet. • Calorie, energy input, energy output, food, activity, nutrients.



	written forms by reporting and presenting the findings of their enquiry	• Alcohol, smoking, drugs, plaque
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