



Progression Grid

Science

2023-2024

Plants							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
Natural world Explore the world around them making observations and drawings of plants. Natural world Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Communication and language Express their ideas and feelings about their experiences using full sentences.	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living Things and their Habitats)	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Investigate the way in which water is transported within plants. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Recognise that living things can be grouped in a variety of ways. (Y4 - Living Things and their Habitats) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living Things and their Habitats) Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living Things and their Habitats)	Describe the life process of reproduction in some plants and animals. (Y5 - Living Things and their Habitats)	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 - Living Things and their Habitats) Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living Things and their Habitats)	Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.
Key Vocabulary							
Plant, leaf, stem, flower, grow, rain, sun, water, soil, seed.	Leaf, flower, blossom, petal, fruit, berry, root, seed trunk, branch, stalk, bud.	As year 1 including Light, shade, sun, warm, cool, water, grow, healthy, unhealthy	Absorb, botanist, carbon dioxide, deciduous evergreen, Flowers, herbalist, leaf (leaves), nutrients,	Classification, classification keys, environment, habitat, human impact, migrate, positive, negative.	Lifecycle, mammal, amphibian, germination, seed formation, insect, bird, pollination, life processes, plants,		

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

	Names of trees in local area and wild flowering plants.		root, stem, trunk, adaptations, fertiliser, magnesium, nutrients, atmosphere, drop, evaporate, wilt, anther, carpel, filament, nectar, ovary, pollen, stamen, stigma, style, egg, dispersal, fertilisation, pollination, seed, scent, dormant, germination, mature, seedling.	(Y4 - Living Things and their Habitats)	animals, reproduce, reproduction, environment, dispersal, growth, living, eggs, seeds. (Y4 - Living Things and their Habitats)		
Key Indicators (what the children need to know to achieve the objective)							
The World: Can develop an understanding of growth, decay and changes over time. Shows concern and care for living things and the environment.	Can name trees and other plants they regularly see. Can describe key features of the trees and plants e.g. shape of leaves/colour of the flower/blossom Can point out trees that have lost their leaves and those that can keep them all year. Can point to and name parts of a plant. Use simple charts to sort plants/trees Can use photos to talk about how plants change.	Can describe how plants have grown from seeds and that bulbs have developed over time. Can identify plants that grew well in different conditions. Can spot similarities and differences between bulbs and seeds. Can nurture seeds and bulbs into mature plants identifying the different requirements of different plants.	Can explain the functions and identify the parts of a flowering plant. Can describe the sequenced stages of a lifecycle of a flowering plant. (pollination, seed formation, seed dispersal and germination) Can give different methods of pollination and seed dispersal – wind/animal by giving examples	See Living things and their Habitats	See Living things and their Habitats	See Living things and their Habitats	

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Living Things and their Habitats							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
People, culture and communities Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and maps. Understanding the world Begin to understand the need to respect and care for the natural environment and all living things. Explore the natural world around them.	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants) Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants) Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including Humans) Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including Humans) Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals including Humans) Observe changes across the four seasons. (Y1 - Seasonal Changes)	Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals including Humans)	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)	Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things. Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals including Humans)	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (Y6 - Evolution and Inheritance) Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 - Evolution and Inheritance)	Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms. Differences between species.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

	See Animals including Humans	Living, dead, never been alive, suited, suitable, basic need, food, foodchain, shelter, move, feed, names of local habitats- forest school, Millwood, Oggy Shore, ponds Names of micro habitats: under logs, in bushes, long grass, under trees		Classification, classification keys, environment, habitat, human impact, positive , negative, migrate, hibernate. Characteristics, conifer, fern, fronds, invertebrates, moss, non-flowering plants, spores, vertebrates, Amphibians, blowhole, blubber, cold-blooded, gills, mucous, shiver, warm-blooded, abdomen, antennae, cocoons, colonies, compound eyes, entomologist, thorax, pooter, sweep net, deforestation, endangered, extinct, nature reserve, slash-and-burn	Mammary glands, marsupials, offspring, camouflaged, clusters, embryo, frog spawn, metamorphosis, tadpole, cocoon, entomologists, larva/ larvae (plural), moulting, nymph, parasites, pupa, scabies, down, egg tooth, incubated, asexual, fertilisation, ovaries, ovules, testes, variation, bulb, cutting, clone, plantlet, regenerate, tuber	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering	
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Indicators

		Find a range of items which are living, dead. Can name plants/animals which live in different habitats and micro habitats. Can talk about the features of the animals/plant and how they are suited to the habitat. Can talk about what the animal eats and constructs a food chain.		Can name living things in a range of habitats, giving characteristics of different types of vertebrates, invertebrates Use a classification key to identify unknown plants and animals. Can give examples of how an environment can change both naturally and due to human impact.	Can describe the lifecycle of mammals, amphibians, insects and birds using diagrams Can describe similarities and differences between them. Can dissect and label parts of a flowering plant including male and female	Can give examples of animals in the five vertebrate groups and some invertebrate groups. Can give key characteristics of the five vertebrate groups and some invertebrate groups. Can give examples of flowering and non- flowering plants. Can use classification keys to identify unknown plants and animals. Can create own classification keys and give number of characteristics that explain why an animal belongs in that specific group.	
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Animals including Humans							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
Health and Self Care Children notice changes in their bodies after exercise such as heart beating faster. Children understand the importance of handwashing.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food (Y2 - Living Things and their Habitats)	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the changes as humans develop to old age. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living Things and their Habitats) Describe the life process of reproduction in some plants and animals. (Y5 - Living Things and their Habitats)	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 - Living Things and their Habitats) Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living Things and their Habitats)	Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. The effects of recreational drugs (including substance misuse) on behaviour, health and life processes. The structure and functions of the gas exchange system in humans, including adaptations to function. The mechanism of breathing to move air in and out of the lungs. The impact of exercise, asthma and smoking on the human gas exchange system.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, heart.	Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, heart Reptile, amphibian, mammal, omnivore, carnivore, herbivore, all 5 senses	Offspring, grow, adults, nutrition, reproduce, survival, water, food, air, exercise, hygiene, survival, exercise	Carnivore, consumer, herbivore, omnivore, pescatarian, producer, vegan, vegetarian, carbohydrates, fats, minerals, proteins, scurvy, Vitamins, hibernate, obesity, starvation, collagen, fracture, leukaemia, osteoporosis, exoskeleton, biceps, contract, gluteus maximus, muscle, tendon triceps nutrition, nutrients, sugars, fibre, skeleton, bones, muscles, support, protect, skull, ribs, spine, muscles, joints	Carnivore, consumer, herbivore, omnivore, predator, prey, producer, food chain, microplastics, absorption, canines Enamel, incisors, molars, premolars, salivary glands, taste buds Umami, cellulose, fibre, indigestion, heartburn, ruminant, ulcer Anus, appendix, colon, constipated, dehydration, diarrhoea, faeces, flatulence, gut flora, lactose, probiotics, rectum	Puberty milestones, acne, adolescence, adolescent, antiperspirant, puberty, scrotum, testes, wet dreams, foetus, mature, menstrual cycle, mood swing, peer pressure, period, vaginal discharge, womb, amniotic fluid, ultrasound, umbilical cord, gestation period, Alzheimer's, dementia, elastic	Heart, pulse, rate, pumps, blood, blood vessel, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle. cardiac muscle circulatory system valves arteries blood pressure capillaries tourniquet veins varicose veins clot plasma platelet red blood cells white blood cells cholesterol stroke anaemia disorder haemophilia leukaemia sickle cell
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Indicators

Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.	Can name a range of animals from each of the vertebrate groups	Can sequence the stages of a baby and Observe these changes. Can describe how animals change as they get older. Develops an understanding of how insects change (more than a butterfly) through lifecycle diagrams. Can explain what humans and other animals need to survive- this could be through planning a trip to the moon or desert Island. Can describe how to keep clean and healthy. Has a good understanding of the food plate and understands 'a healthy balanced diet'. Can create a diet for an athlete. Can adopt a menu to substitute food from the eat well plate. Understands the effect of exercise on the body	Can name the nutrients found in food. Can state that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients. Name some bones that make up the skeleton giving examples that support, help them move or provide protection. Can describe how muscles and joints help them to move. Classify food groups (high/low nutrients), answer q's about nutrients in food, use data to look for patterns. Give similarities and differences between skeletons.	Can sequence the main parts of the digestive system. Can draw the main parts of the digestive system onto a human outline. Can describe what happens in each part of the digestive system. Can point to three different types of teeth in their mouth and talk about what each is used for. Demonstrate journey of food through body. Can explain teeth in animals and if they are carnivores, herbivores or omnivores. Can explain how a food chain works.	Can explain the changes that take place in girls and boys during puberty. Can describe milestones in the human lifecycle. Can understand the process of reproduction and explain gestation in animals.	Can draw a diagram of the circulatory system, label the parts and annotate it to show what the parts do. Can explain the positive and negative effects on diet, exercise, drugs and lifestyle on the body.
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Evolution and Inheritance							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.	Name common plants and describe basic structure of flowering plants, including trees (Y1 - Plants)	Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. (Y2 - Living Things and their Habitats) Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals including Humans)	Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks) Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal (Y3 - Plants)	Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living Things and their Habitats)	Describe the life process of reproduction in some plants and animals. (Y5 - Living Things and their Habitats)	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	Heredity as the process by which genetic information is transmitted from one generation to the next. A simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model. The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection. Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

						Evolution, offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils	
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Indicators

						Can explain the process of evolution. Can give examples of how plants and animals are adapted to suit their environment. Can give examples of how a plant or animal has evolved over time – penguin Give examples of things that lived millions of years ago and fossil evidence to support these facts.	
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Seasonal Changes							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
The Natural World Understand some important processes and changes in the natural world around them, including seasons.	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.		Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light) Recognise that shadows are formed when the light sources is blocked by a solid object Find patterns in the way the size of the shadows change (Y3 - Light)		Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and Space) Explain that unsupported objects fall towards the earth because of the force of gravity acting between the Earth and the falling object (Y5 - Forces)	Use the idea that light travels in straight lines to explain why shadows have the same shape as the object that casts them (Y6 - Light)	The seasons and the Earth's tilt, day length at different times of year, in different hemispheres.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

Snow, wind, rain, sun, day, night, stormy, cloudy, hot, cold, foggy light, dark	Weather (sunny, rainy, windy, snowy etc) Seasons (winter, summer, spring, autumn) sun, sunrise, sunset, Day length, light, dark, shadow		Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous, absence, bioluminescence, Celsius, mirror, reflect, image, opaque, translucent, Transparent, astronomer, iris, pupil, project, aluminium, dull, scattered, blocked, shadow, position, astronaut, binoculars, curved, lens, optician, telescope			Year 3 vocabulary plus	
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Indicators

Can describe the weather outside and suggest what they might wear and what they might see . Can comment on the environment e.g. the leaves have fallen off the tree, there is a puddle. Children can understand the effect of changing seasons on the natural world around them.	Can name four seasons and identify when in the year they occur. Can observe and describe weather in different seasons Can describe days being longer in summer and shorter in winter. Present data in tables charts and compare seasons.		See Light			See Light	
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Materials							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
The Natural World Understand some important processes and changes in the natural world around them, including changing states of matter. Speaking Offer explanations for why things happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems where appropriate. Understanding of the world Use all their senses in hands on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see using a wide vocabulary. Explore how things work. Talk about the difference between materials and changes they notice.	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks) Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks) Recognise that soils are made from rocks and organic matter (Y3-Rocks and Soils) 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. (Y3-Forces and Magnets) Notice that some forces need contact between two objects but magnetic forces can act at a distance (Y3 - Forces and Magnets)	Compare and group materials together, according to whether they are solids, liquids or gases. (States of Matter) 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). (States of Matter) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (States of Matter) Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4 - Electricity)	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	Recognise that living things have changes over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (Y6 - Evolution and Inheritance)	Chemical reactions as the rearrangement of atoms. Representing chemical reactions using formulae and using equations. Combustion, thermal decomposition, oxidation and displacement reactions. Defining acids and alkalis in terms of neutralisation reactions. The pH scale for measuring acidity/alkalinity; and indicators.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Vocabulary

Wet, dry, shiny, dull, bendy, stiff, squashy, hard/soft, lumpy, wrinkly. Smooth, rough.	Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through.	Names of materials: wood, plastic, glass, metal, water, rock, brick, paper, fabric, card, rubber, suitable/unsuitable, use/useful, hard/soft, stretchy/stiff. Rigid/flexible, waterproof/absorbent, strong/weak, rough/smooth, transparent/opaque, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	Crust, meteorites, minerals, granite, igneous, metamorphic Mineralogist, porosity, properties, sedimentary, talc, crystal, lava, magma, obsidian, Boulder, continents, Fossils, meteorologist, Palaeontologist, pebble, sediment, Gneiss, metamorphic, pressure, temperature, bedrock, Humus, Silt, Topsoil. (Y3 - Rocks)	States, matter, carbon monoxide, gas, liquid, plasma, solid, sulphur dioxide, melting, melting point, tungsten, evaporation, Sweat, sweat glands, water vapour, antifreeze, bacteria, freezing point, frostbite, cloud, Condensation, dew, fog, fungi, precipitation (Y4 - States of Matter)	Ceramics, durability, silica, silicon, synthetic, thermal conductors, thermal insulators, microplastics, sieve, acetone, alloy, dissolved, soluble, solution, solvent, alkali, bicarbonate, irreversible, neutralisation, phlogiston Change of state, dissolve, soluble, insoluble, filter, mixture, change, new material		
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Indicators

They can talk about simple similarities and differences between two materials and how materials change in terms of shape, size and texture. They can describe materials using basic scientific words. They can explore how things work. They can group and classify materials using their properties.	Can label a picture/diagram of an object made from different materials. Can describe the properties of materials. Can sort materials using their properties. Can test evidence to answer a question.	Can name an object, say what material it is made from, identify properties and make a link between property and use. Whilst changing a shape of an object can describe the actions used. Can use suitable vocabulary. Simple tests relevant to properties. Describe similarities and differences	Can name some types of rock and give physical features of each. Can explain how a fossil is formed. Can explain that soils are made from rocks and also contain living/dead matter. Can Classify rocks in a range of ways using scientific vocabulary to test properties of rocks. Can Show an understanding of how fossils were formed, Can identify plant/animal matter in soil, test water retention of soils	Can create a concept map, including arrows linking the key vocabulary. Can recall the three states of matter Can give everyday examples of the three states of matter. Describe the properties of the 3 states of matter. Can give examples of things that melt/freeze. Explain what is meant by evaporation and condensation and give examples Can measure temperatures using a thermometer. Can they draw and label a diagram of the Water Cycle.	Can explain what dissolving is and give examples. Can name equipment used for Filtering and sieving Can use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering, or sieving. Can describe simple reversible and non-reversible changes to materials and give examples. Can explain results from investigations involving dissolving and non-reversible change.		
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Rocks							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
	Distinguish between an object and the material from which it is made. (Y1 - Everyday Materials) Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday Materials) Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday Materials) Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday Materials)	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of Everyday Materials)	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.			Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (Y6 - Evolution and Inheritance)	The composition of the Earth. The structure of the Earth. The rock cycle and the formation of igneous, sedimentary and metamorphic rocks.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

Crust, meteorites, minerals, granite, igneous, metamorphic
Mineralogist, porosity, properties, sedimentary, talc, crystals, lava, magma, obsidian, pumice, Boulder, continents
Fossils, meteorologist, Palaeontologist, pebble, sediment, Gneiss, metamorphic, pressure, temperature, bedrock, marble, chalk, granite, sandstone, slate, peat, Humus, Silt, topsoil, waterlogged

Indicators

Can name the 3 types of rocks and give physical features, of how each rock is formed.
Can explain how fossils are formed.
Can explain that soils are made from rocks and also contain living/dead matter.
To draw and label the 4 layers of soil and explain what each layer is for.
Classify rocks in a range of ways using scientific vocabulary.
Draw 4 different layers of soil and note what each layer is for.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Light							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
Understanding of the world Explore materials with different properties. Talk about what they see, using a wide vocabulary. Expressive arts and design Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture form and function. Explore colour and colour-mixing.	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including Humans) Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials) Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. (Y1 - Animals including Humans)	Identify and compare the suitability of a variety of everyday materials, including wood, metals, plastic, glass, brick, rock, paper and cardboard (Y2 - Materials) Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (Y2 - Plants)	Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) and how they vary from plants to plant. (Y3 - Plants)		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. (Y5 - Properties and Changes of Materials) Use Earth rotation to explain day and night due to the apparent movement of the sun across the sky (Y5 - Earth and Space)	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	The similarities and differences between light waves and waves in matter. Light waves travelling through a vacuum; speed of light. The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface. Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye. Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras. Colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

Smell, sound, sight, see, look	See Seasonal Changes & Animals including Humans		Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous, absence, bioluminescence, Celsius, mirror, reflect, image, opaque, translucent, Transparent, astronomer Iris, pupil, project, aluminium, Dull, scattered, blocked, shadow, position, astronaut, binoculars, curved, lens optician, telescope		See Earth and Space		
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Indicators

Children will be able to identify and name different colours. They can mix colours and explain the changes.	See Seasonal Changes & Animals including Humans.		Can describe how we see objects in lights and can describe dark as the absence of light. Know it is dangerous to look at the sun. Define transparent, translucent and opaque. Can describe how shadows are formed. Predict what materials will be more/less visible.		See Earth and Space	Can describe with diagrams how light travels in straight lines, either from sources or reflected from other objects into our eyes. Can describe with diagrams how light travels in straight lines past translucent or opaque objects to form a shadow of the same shape.	
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Forces							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
Moving and handling Introduce and encourage children to use vocabulary of manipulation- e.g. squeeze and prod Technology Shows and interest in technological toys with knobs and pulleys or real objects such as cameras or mobile cameras.	Describe the simple physical properties of a variety of everyday materials. Compare and group materials together a variety of everyday materials on the basis of their simple physical properties. (Y1- Materials)	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of Everyday Materials)	Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. To describe the movements of the Earth, and other planets relative to the sun in the solar system (Y5- Earth and Space)		Magnetic fields by plotting with compass, representation by field lines. Earth's magnetism, compass and navigation. Forces as pushes or pulls, arising from the interaction between two objects. Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. Moment as the turning effect of a force. Forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water. Forces measured in Newtons, measurements of stretch or compression as force is changed.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

Push, pull, twist, stretch, turn, open, lift, squeeze, pinch, flick, tap	Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through.	Names of materials: wood, plastic, glass, metal, water, rock, brick, paper, fabric, card, rubber, suitable/unsuitable, use/useful, hard/soft, stretchy/stiff. Rigid/flexible, waterproof/absorbent, strong/weak, rough/smooth, transparent/opaque, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	Biomechanics, contractions, physiotherapy, tendons, air resistance Arthritis, cartilage, contact, friction, lubricant, non-contact, streamlined, water resistance, attract, electrostatic force, gravity, levitation, magnetic force, magnetic field, pole, repel, tides, cobalt, iron, lodestone, MRI scan, Nickel, steel, ball magnet, bar magnet, cylinder magnet, disc magnet, horseshoe magnet, compass, south pole, North Pole		Forces, gravity, earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears		
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Indicators

Children will be able to play with a range of toys of varying sizes made from different materials and fit them together in different ways such as twisting, pushing, slotting or magnetism. Can manipulate playdough in different ways	See materials	See materials	Give example of forces in everyday life. Give examples of objects moving differently on different surfaces. Name a range of magnets and show how the poles attract and repel by using diagrams		Can demonstrate the effect of gravity acting upon an unsupported object. Can give examples of friction, water resistance and air resistance, Can give examples of when it is beneficial to have low/high friction,, water resistance and air resistance. Can demonstrate how pulleys, levers and gears work.		
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Sound							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
The World They can experiment with sound and making different noises with musical instruments and express using different terms such as loud, quiet, beat, vibrate. Children respond to their senses- sound in the environment	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals including Humans) Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1- Materials)			Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.			Waves on water as undulations which travel through water with transverse motion; these waves can be reflected and add or cancel – superposition. Frequencies of sound waves, measured in Hertz (Hz); echoes, reflection and absorption of sound. Sound needs a medium to travel, the speed of sound in air, in water, in solids. Sound produced by vibrations of objects, in loudspeakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are longitudinal. Auditory range of humans and animals. Pressure waves transferring energy; use for cleaning and physiotherapy by ultra-sound. Waves transferring information for conversion to electrical signals by microphone.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

Hear, low, high, see, look				Sound, source, vibrate, vibration, travel, pitch, volume, faint, loud, insulation, bass, woodwind, string, vocal chord, echos, medium, article, wave, auditory nerve, audiologist, cochlea implant, ear canal, eardrum, hearing impairment, amplifier, decibel, audible range, echolocation, hertz, pitch, sonar, ultrasonography, ultrasound.			
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Indicators

				Can describe how sounds are produced. Can give examples of different mediums and how sound travels though these Can describe how pitch can be changed Can describe how volume can be increased/decreased and the features of the object producing it.			
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Electricity							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
Technology Shows skills in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movement or new images	Describe simple physical properties of a variety of everyday materials. Compare and group materials together a variety of everyday materials on the basis of their simple properties. (Y1- Materials)	Identify and compare the suitability of a variety of everyday materials, including, wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2- Materials)		Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.	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 (Y5- Materials)	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.	Electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge. Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current. Differences in resistance between conducting and insulating components (quantitative). Static electricity.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary

	See materials	See materials		charge, cell, battery, symbol electrostatic forces, static, flow, appliances, circuit, current, fossil fuels, nuclear, renewable, components, voltage, generator, hazards, conductor, insulator, electric shock, loose connection, crocodile clip, switch, buzzer, component		As Year 4 vocabulary motor	
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Indicators

	See materials	See materials		Can name the components in a circuit Can identify appliances that use electricity Can construct a simple series electrical circuit identifying and naming its basic parts- cells, wires, bulbs, switches and buzzers Can recognise some common conductors and insulators and associate metals as being good Conductors Can communicate structures of circuits by using drawings		Can explain how a circuit works to achieve specific operations such as control the brightness of a torch or to make a motor increase/decrease with speed	
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National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Earth and Space							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.	Observe changes across the four seasons. (Y1 - Seasonal Changes) Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal Changes)				Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.		Gravity force, weight = mass x gravitational field strength (g), on Earth $g=10 \text{ N/kg}$, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only). Our Sun as a star, other stars in our galaxy, other galaxies. The seasons and the Earth's tilt, day length at different times of year, in different hemispheres. The light year as a unit of astronomical distance.

National Curriculum statements in red are from other linked topics.

Subject Lead: Mrs Smith



Progression Grid

Science

2023-2024

Key Vocabulary							
					Earth, sun, moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Pluto (dwarf planet), spherical, solar system, rotates, star, orbit, planets, axis, day, night, seasons, galaxy, asteroid, celestial bodies, comet, elliptical, galaxy, crescent, phase, satellite, Geocentric, Heliocentric		
Indicators							
					Can show using diagrams the movement of the Earth and Moon. Can explain the rotation of the earth and how this causes day and night Can explain the Heliocentric and the Geocentric models of the Solar System Can explain why we have time zones		

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