|  | **Plants** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | Children can talk about some of the things they have observed such as plants, animals, natural and found objects  Children can explore the natural world around them, making observations and drawing pictures of plants. | Children can observe and describe how seeds and bulbs grow into mature plants.  Children are able to Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.  Children are able to Identify and name a variety of common plants including green plants, wild plants and trees and those classified as deciduous and evergreen.  Children can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. | Children can explore the role of flowers in life cycles of flowering plants, including pollination, seed formation and seed dispersal.  Children are able to Investigate the way in which water is transported within plants.  Children can explore the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) and how they vary from plant to plant.  Children are able to Identify and describe the functions of different parts of flowering plants; stem, roots, leaves and flowers | Children relate knowledge of plants to studies of evolution and inheritance  Children relate knowledge of plants to studies of all living things |
| Vocabulary |  | leaf, flower, blossom petal, fruit, root, bulb, seed, trunk, branches, stem, berry, bark, stalk, bud  Light, shade, sun, warm, cool, water, grow, healthy | pollen, insect/wind seed formation, seed dispersal – wind dispersal, animal dispersal, water dispersal, roots,nutrition |  |

|  | **Animals including humans** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | Children can talk about some of the things they have observed such as plants, animals, natural and found objects  Children can explore the natural world around them, making observations and drawing pictures of animals. | Children can Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates.  Children can Identify and name a variety of common animals that are carnivores, herbivores and omnivores.  Children are able to describe and compare the structure of a variety of commons animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets)  Children can identify, name, draw and label the basic parts of the human body and associate which part of the body is associated with each sense.  Children notice that animals, including humans, have offspring which grow into adults.  Children can investigate and describe the basic needs of animals, including humans, for survival (water, food and air).  Children can describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.  Children can describe and compare the structure of a variety of common animals.  Children can identify how humans resemble their parents in many ways. | Children can identify that animals, including humans, need the right types and amounts of nutrition, and that they cannot make their own food and they get nutrition from what they eat.  Children can identify that humans and some animals have skeletons and muscles for support, protection and movement.  Children can construct and interpret a variety of food chains, identify producers, predators and prey.  Children are able to describe the simple functions of the parts of the digestive system in humans.  Children can Identify the different types of teeth in humans and their simple functions. | Children can identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood.  Children are able to describe the changes as humans develop from birth to old age.  Children can recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions |
| Vocabulary |  | tail, wing, claw, fin, scales, feathers, paw, beak, fur, hooves, warm blooded, cold blooded, eggs, gills, land, water  head, body, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth  baby, toddler, child, teenager, adult | Digestion, mouth, teeth, tongue, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, muscles, Skeleton, bones, ribs , spine, skull , contract, flex, joint, vertebrate, invertebrate  Growth  Food groups  Recap: Protein, dairy, carbohydrate, fruit, vegetable, fats, sugars**Meat, fish, cereals, starch**  **Revisit vocabulary taught in Key Stage 1.** | Physical changes, Emotional changes, Moods, Periods, Tampons, Sanitary towels, Wet dreams , Semen, Erection, Sweat, Breasts, Spots, Pubic hair, Facial hair, Underarm hair,Womb, Sperm, Egg, Conception, Fertilisation, Pregnancy, Sexual intercourse ,  Twins, Fostering, Adoption, Relationship ,Friendship, Love, Consent, Intimacy, Sexual feelings, Privacy Human rights, Protection, Female Genital, Mutilation  Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle,exercise, drugs and lifestyle  **Revisit vocabulary taught in Lower Key Stage 2.** |

|  | **Living things and their habitats** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | Children can talk about some of the things they have observed such as plants, animals, natural and found objects.  Children can explore the natural world around them, making observations and drawing pictures of animals and plants;  Children 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. | Children can explore and compare the differences between things that are living, that are dead and that have never been alive.  Children can identify that most living things live in habitats to which they are suited.  Children are able to describe how different habits provide for the basic needs of different kinds of animals and plants, and how they depend on each other.  Children can identify and name a variety of plants and animals in their habitats, including micro habitats.  Children can describe how animals obtain their food from plants and other animals, using the idea of simple food chains.  Children can identify and name different sources of food. | Children can explore and use classification keys.  Children can recognise that living things can be grouped in a variety of ways.  Children can recognise that environments can change and that this can sometimes pose dangers to specific habitats. | Children can understand the differences in the life cycles of a mammal, amphibian, an insect and a bird  Children can understand the life process of reproduction in some plants and animals.  Children can understand how living things are classified into broad groups according to common observable characteristics, similarities and differences. (microorganisms, plants and animals)  Children know and give reasons for classifying plants and animals based on specific characteristics. |
| Vocabulary |  | habitat, microhabitat seashore, woodland, ocean, rainforest  egg, chick, chicken; egg, caterpillar, pupa,  living, dead, never been alive, suited, suitable, basic needs, food,, shelter, move, feed, producer, consumer, territory consumer, apex predator  Names of areas in local habitats:  Pond, woodland, logs, bushes etc | classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate, vertebrate, invertebrate, fish, amphibians, reptiles, birds, mammals, snail, slug, worm, spider, insect, skeleton, spine  **Revisit vocabulary taught in Key Stage 1.** | insects, spiders, snails, worms, flowering and non-flowering,  **Revisit vocabulary taught in Lower Key Stage 2.** |

|  | **Everyday materials** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | N/A | Children can distinguish between an object and the material from which it is made with some correction if needed.  Identifies and names a variety of everyday materials.  Children can describe the simplest physical properties of a variety of everyday materials e.g. strength, flexibility and transparency.  Children compare and group together a variety of everyday materials on the basis of their simple physical properties using appropriate vocabulary.  Children find out how the shapes of solid objects made from some materials can be changed.  Children can identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock and paper/cardboard. | N/A | Children compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal) and response to magnets |
| Vocabulary |  | object, material, brick, paper, fabrics, elastic, foil, wood, plastic, glass, metal, elastic, foil, card, cardboard, rubber, wool, clay, rock  hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/floppy; waterproof/absorbent; breaks, tears, rough, smooth, shiny, dull, suitable/unsuitable,  use/useful, rigid/flexible,  strong/weak,  transparent/opaque,  shape, push/pushing, pull/pulling,  twist/twisting, squash/squashing, bend/bending,  stretch/stretching. |  |  |

|  | **Seasonal changes** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | Children understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. | Children can observe the apparent movement of the sun during the day.  Children can observe changes across the four seasons.  Children are able to observe and describe weather associated with the seasons and how day length varies. | N/A | N/A |
| Vocabulary |  | Sunny, rainy, windy, snowy, winter, summer, spring, autumn, sun, sunrise, sun set, day length, weather, climate |  |  |

|  | **States of matter** | | | |
| --- | --- | --- | --- | --- |
|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | Children understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. | N/A | Children compare and group materials together, according to whether they are solids, liquids or gases.  Children observe that some materials change state when they are heated or cool.  Children measure the temperatures at which this happens in degrees Celsius building on teaching in mathematics.  Children can identify the parts played by evaporation and condensation in the water cycle.  Children associate the rate of evaporation with temperature. | Children understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution  Children use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating  Children give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic  Children demonstrate that dissolving, mixing and changes of state are reversible changes  Children can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning, oxidation and the action of acid on bicarbonate of soda |
| Vocabulary |  |  | Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, condensation,vapour, clouds, run- off, evaporate, condense, water, precipitation | Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material, chemical    **Revisit vocabulary taught in Lower Key Stage 2.** |

|  | **Sound** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | N/A | N/A | Children observe and name a variety of sources, noticing we hear with our ears.  Children identify how sounds are made, associating some of them with something vibrating.  Children can recognise that vibrations from sound travel through a medium to the ear. | Children can find patterns between the pitch of a sound and features of the object that produced it  Children can find patterns between the volume of a sound and the strength of the vibrations that produced it  Children can recognise that sounds get fainter as the distance from the sound source increases |
| Vocabulary |  |  | sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation, matter, echo, wave, amplitude |  |

|  | **Electricity** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | N/A | N/A | Children identify common appliances that run on electricity.  Children are able to construct a simple series electrical circuit.  Children are able to 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.  Children recognise that a switch opens and closes a circuit and associates this with whether or not a lamp lights in a simple series circuit.    Children recognise some common conductors and insulators and associate metal with being good conductors.  Children identify common appliances that run on electricity.  Children are able to construct a simple series circuit identifying and naming its main parts including wires, bulbs, switches and buzzers. | Children use recognised symbols when representing a simple circuit in a diagram  Children associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit  Children 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  Children know and consider various forms of making electricity.  Children can discuss the impact of forms of electricity on the environment. |
| Vocabulary |  |  | Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery,voltage, current, resistance, power, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol  cells, wires, bulbs, switches and buzzers | in circuit, circuit diagram, circuit symbol, motor, switch, electrons,, particles, filament, fuse, renewable, solar, current, wave/wind/solar power  **Revisit vocabulary taught in Lower Key Stage 2.** |

|  | **Forces and magnets** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | N/A | N/A | Children know how things move on different surfaces  Children understand that some forces need contact between two objects, but magnetic forces can act at a distance  Children know how magnets attract or repel each other and attract some materials and not others  Children know a variety of everyday materials can be grouped and compared on the basis of whether they are attracted to a magnet, and identify some magnetic materials  Children know magnets as having two poles.  Children understand /predict whether two magnets will attract or repel each other, depending on which poles are facing. | Children describe magnets as having two poles  Children predict whether two magnets will attract or repel each other, depending on which poles are facing  Children can explain that supported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object  Children can identify the effect of drag forces such as air resistance, water resistance and friction that acts between two moving surfaces  Children describe, in terms of drag forces, why moving objects that are not driven tend to slow down  Children understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs  Children understand that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. |
| Vocabulary |  |  | Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole, surface, positive, negative | Force, Earth, friction, mechanisms, simple machines, levers, pulleys, gears, velocity, thrust, drag  **Revisit vocabulary taught in Lower Key Stage 2.** |

|  | **Rocks** | | | |
| --- | --- | --- | --- | --- |
|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | N/A | N/A | Children compare and group together different kinds of rocks on the basis of their simple, physical properties  Children relate the simple physical properties of some rocks to their formation (igneous or sedimentary)  Children describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rocks.  Children can recognise that soils are made from rocks and organic matter. | N/A |
| Vocabulary |  |  | Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil, sedimentary, metamorphic, igneous, |  |

|  | **Light** | | | |
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|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | N/A | N/A | Children can observe and name a variety of sources of light including electric lights, flames and the sun.  Children explore that we see things because light travels from light sources to our eyes.  Children notice that light is reflected from surfaces.  Children can recognise shadows are formed when light from a light source is blocked by a solid object.  Children can recognise that light is required in order to see things and that dark is the absence of light.  Children recognise that light from the sun can be dangerous and there are ways to protect the eyes.      Children are able to find patterns in the way that the size of shadows change. | Children understand that light appears to travel in straight lines  Children use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes  Children use the idea that light travels in straight lines to explain why shadows have the shame shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes  Children are able to explain that we see things because light travels from light sources to our eyes or from objects and then to our eyes |
| Vocabulary |  |  | Light, Light source, Dark, Absence of light, Transparent, Translucent, Opaque, Shiny, Matt, Surface, Shadow, Reflect, Mirror, Sunlight, Dangerous, absorption | Straight lines, Light rays, refraction, reflection, scattering, intensity  **Revisit vocabulary taught in Lower Key Stage 2.** |

|  | **Evolution** | | | |
| --- | --- | --- | --- | --- |
|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | N/A | N/A | N/A | Children can identify how plants and animals, including humans, resemble their parents in many features.  Children recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.  Children can identify how animals are suited to and adapt to the environment in different ways.  Children know adaptation may lead to evolution. |
| Vocabulary |  |  |  | Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossil, common ancestor |

|  | **Earth and Space** | | | |
| --- | --- | --- | --- | --- |
|  | **EYFS** | **Key Stage 1** | **Lower Key Stage 2** | **Upper Key Stage 2** |
|  | N/A | N/A | N/A | To understand the movement of the Earth, and other planets, relative to the Sun in the solar system.  To understand how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists.  To understand that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).  To understand the movement of the Moon relative to the Earth.  To know why some people think that structures such as Stonehenge might have been used as astronomical clocks.  To understand the Sun, Earth and Moon as approximately spherical bodies.  To understand the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky.  To know that the Sun is a star at the centre of our solar system and that it has eight planets. |
| Vocabulary |  |  |  | Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune, (Pluto was reclassified as a ‘dwarf planet’ in 2006)  Spherical, rotates, star, orbits, planets, axis, centric, geocentric, heliocentric, time zone  Suggested scientists: Ptolemy, Alhazen and Copernicus  **Revisit vocabulary taught in Lower Key Stage 2.** |