

Year 3

Animals, including humans

Prior learning

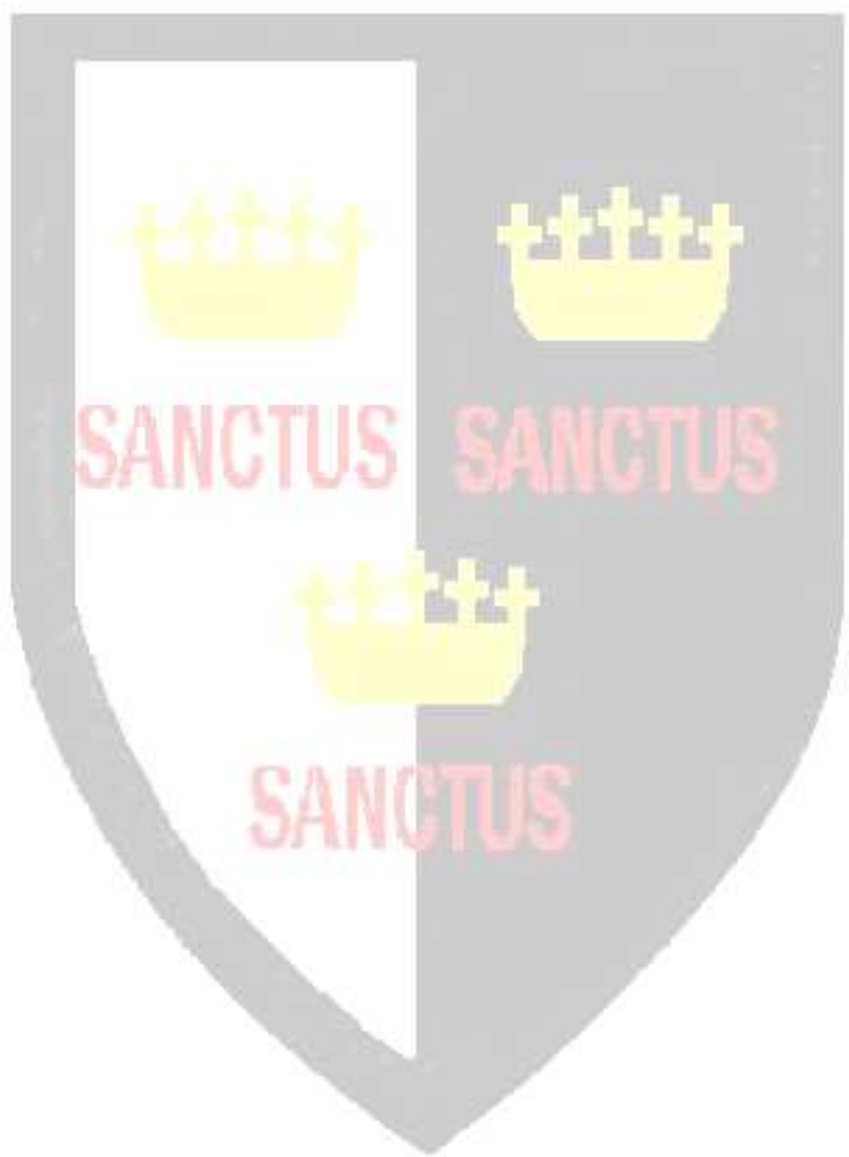
- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1)
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1)
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1)
- Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (Y2)
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2)

Learning objectives

- ❖ 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.

Key vocabulary:

Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, balanced diet
skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints



Year 3

Forces and magnets

Prior learning

- Describe the simple physical properties of a variety of everyday materials.(attracted to a magnet or not) (Y1)

Learning objectives

- ❖ 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.

Key vocabulary:

Force, push, pull, twist, magnetic force, magnet, strength, bar magnet, ring magnet, horseshoe magnet, attract, repel, magnetic material, magnetic field, metal, iron, steel, poles, north pole, south pole

Year 3

Light

Prior learning

- Observe and describe weather associated with the seasons and how day length varies. (Y1)
- Describe the simple physical properties of a variety of everyday materials. (opaque, transparent) (Y1)

Learning objectives

- ❖ 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.

Key vocabulary:

Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, reflection, mirror, sunlight, dangerous

Prior learning

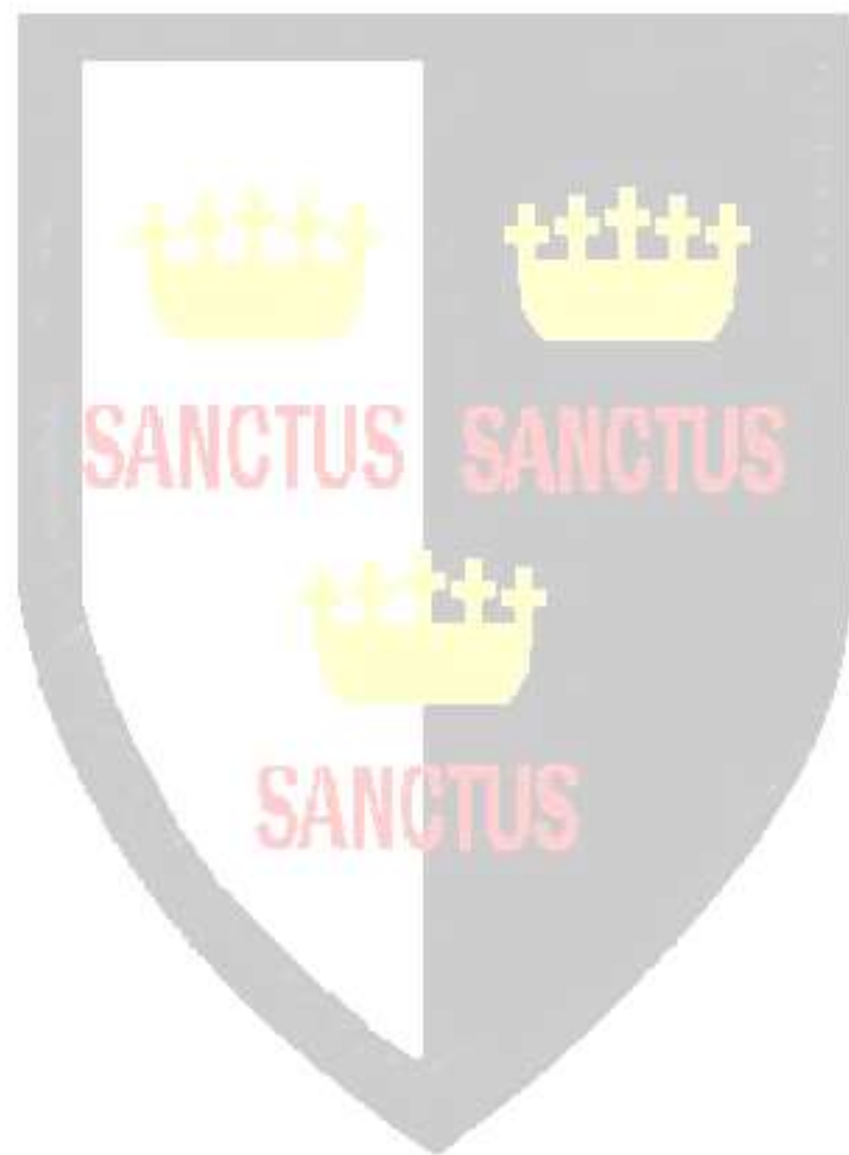
- Observe and describe how seeds and bulbs grow into mature plants.
- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Learning objectives

- ❖ 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.

Key vocabulary:

Leaves, flowers, blossom, petals, fruit, roots, bulb, seed, trunk, branches, stem, stigma, style, anther
air, light, water, nutrients, soil, transport, seed, seedling, fruit, ovary ovule
pollen, insect/wind pollination, seed formation, seed dispersal (wind, animal, water), reproduce



Year 3

Rocks and soils

Prior learning

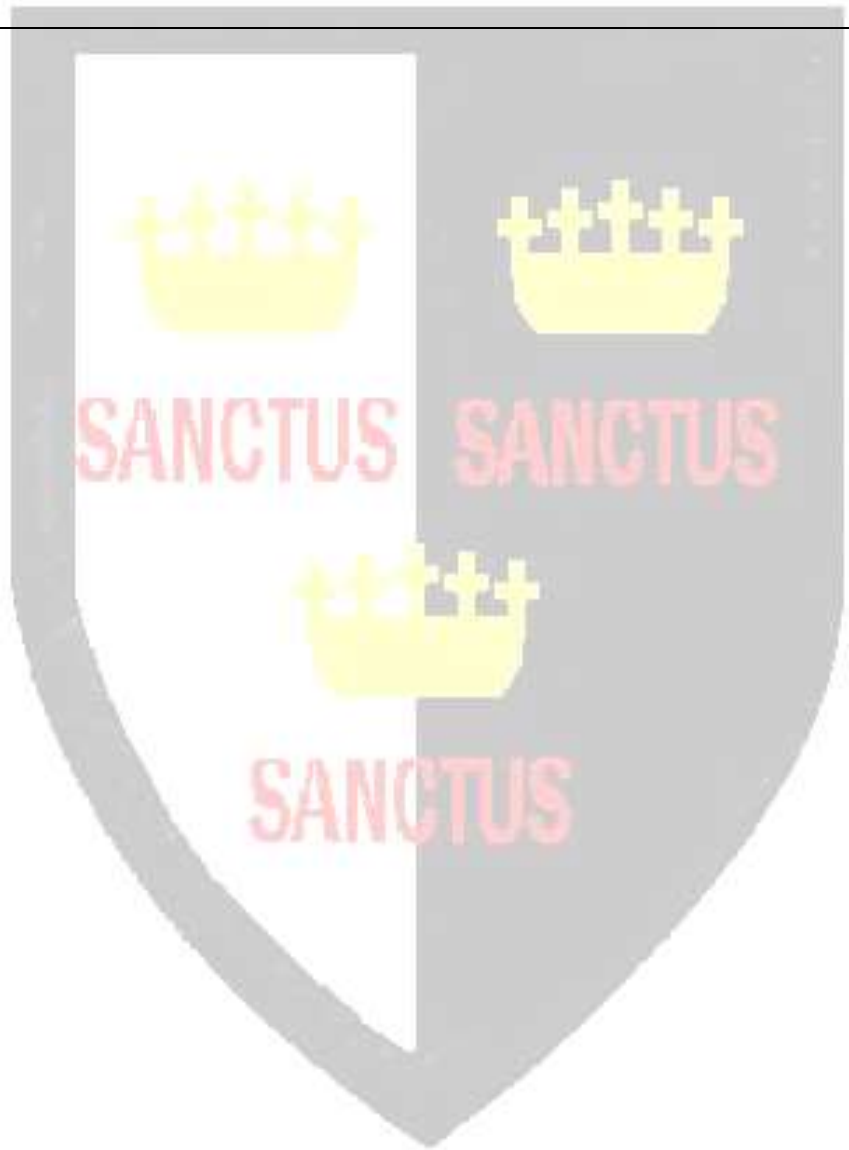
- Distinguish between an object and the material from which it is made. (Y1)
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1)
- Describe the simple physical properties of a variety of everyday materials. (Y1)
- Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1)
- 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)

Learning objectives

- ❖ 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.

Key vocabulary:

Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, permeable, impermeable, fossil, marble, chalk, granite, sandstone, slate, pumice, sedimentary/igneous/metamorphic rocks, peat, sandy/chalk/clay soil



Year 4

Animals, including humans

Prior learning

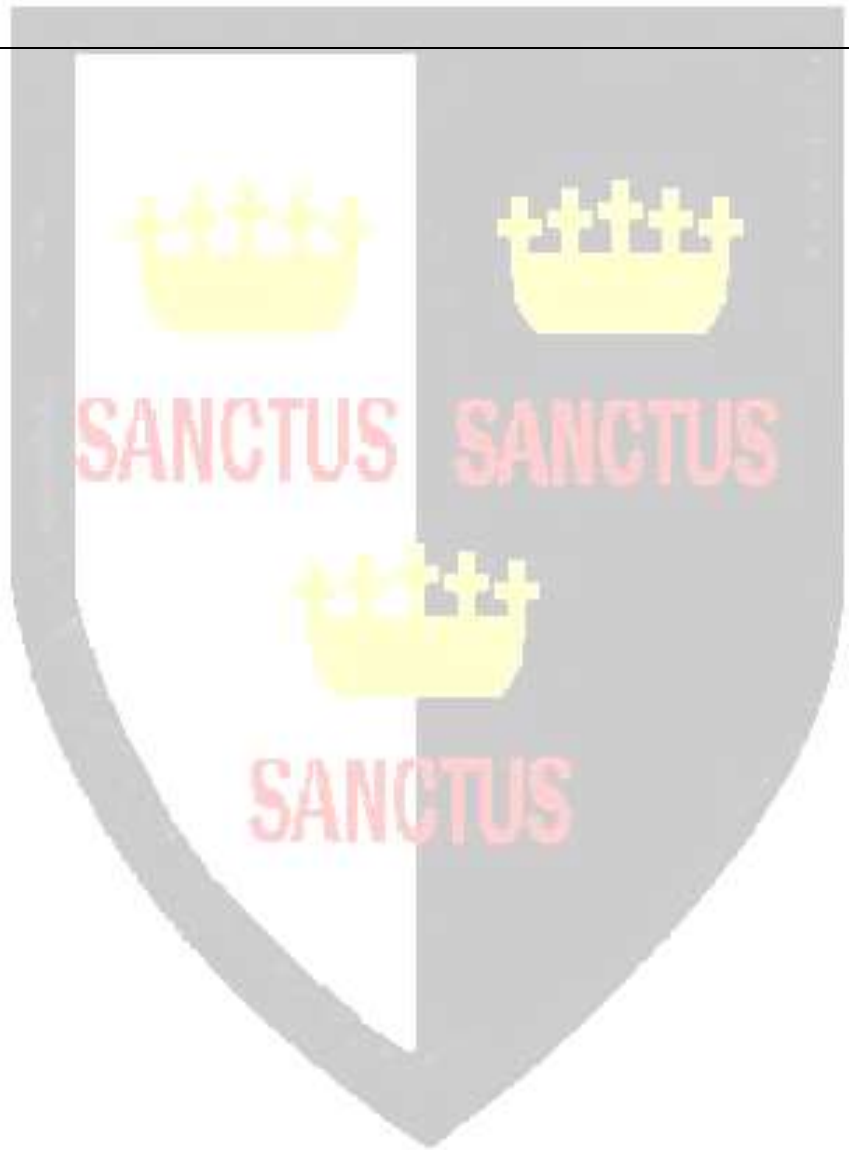
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1)
- Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (Y2)
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2)
- 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)
- 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. (Y3)

Learning objectives

- ❖ 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.

Key vocabulary:

Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, dentist, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain



Year 4

Electricity

Prior learning

- 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. (Early Learning Goal)

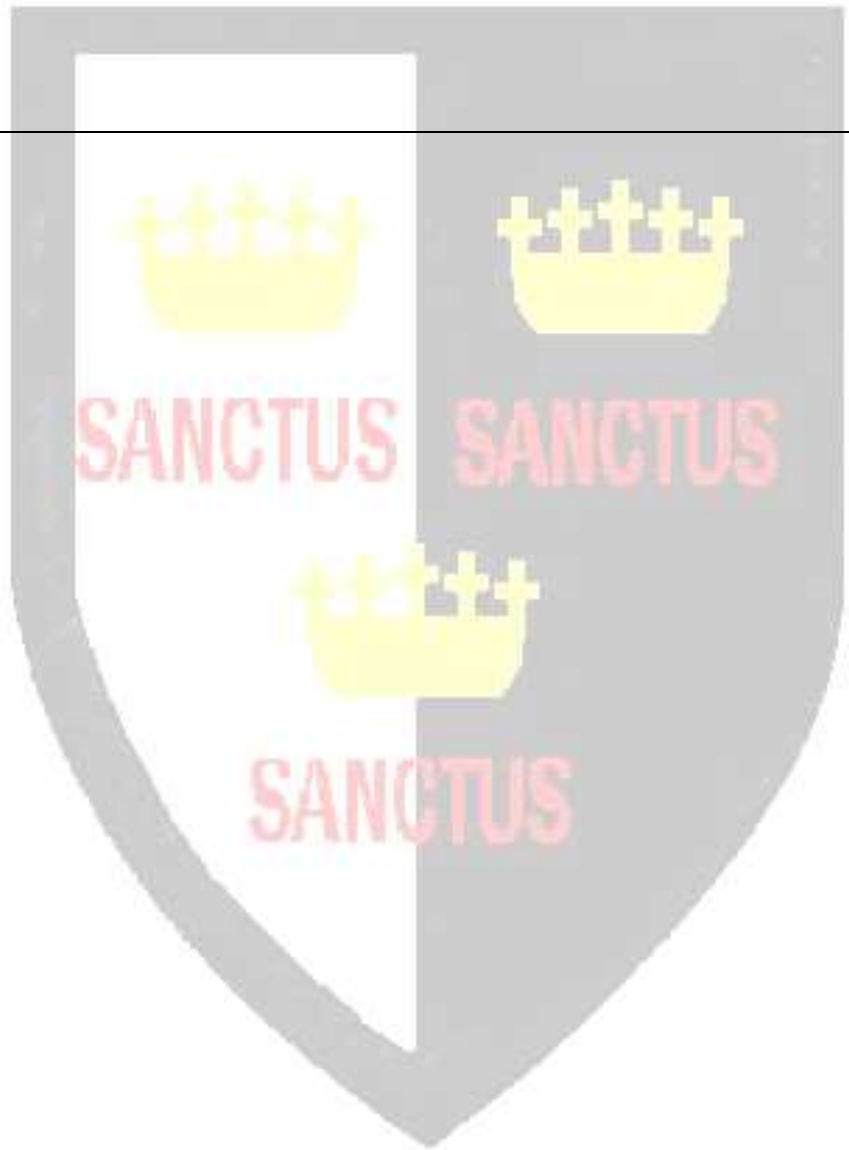
Learning objectives

- ❖ 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.

Key vocabulary:

Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, current, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, wire, switch, buzzer, motor, electrical conductor, electrical insulator, metal, non-metal, symbol

Children in Year 4 do not need to use standard symbols for electrical components, as this is taught in Year 6.



Year 4

Living things and their habitats

Prior learning

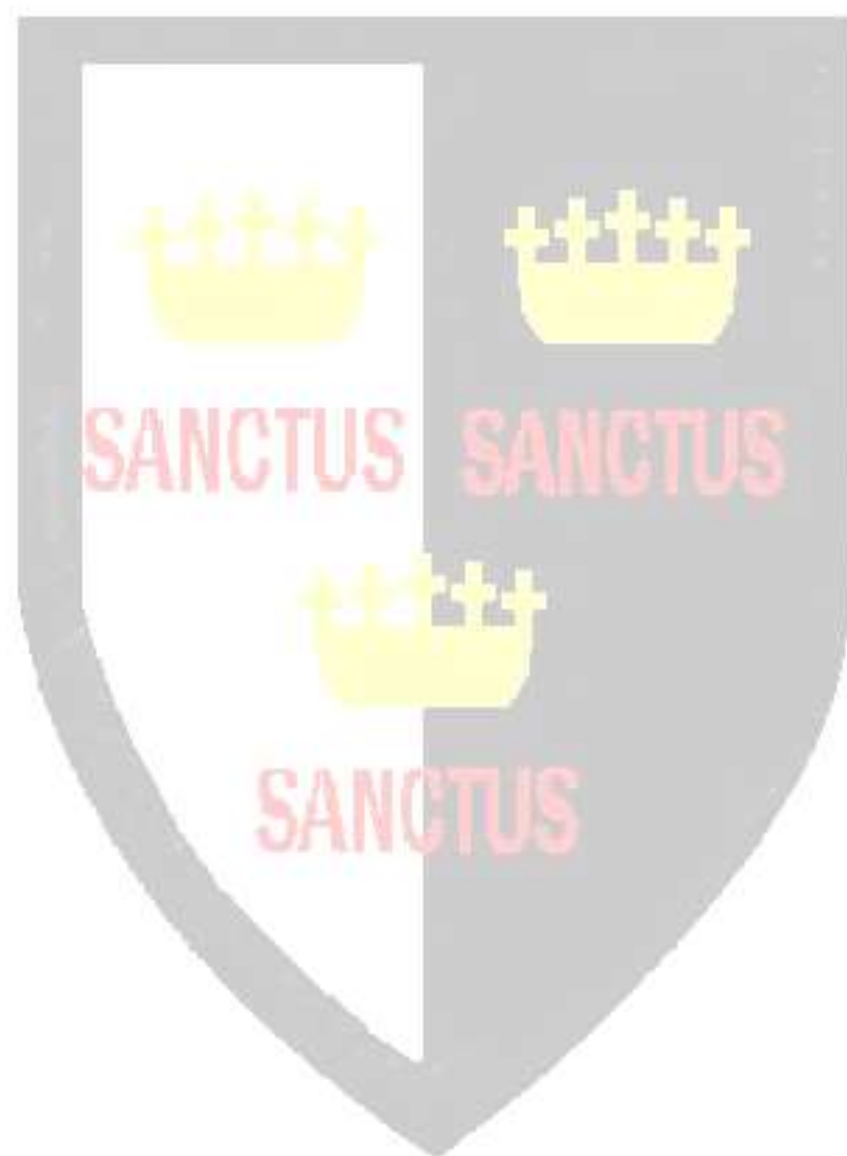
- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1)
- Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1)
- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1)
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1)
- Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2)

Learning objectives

- ❖ 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.

Key vocabulary:

Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate, vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, snails, slugs, worms, spiders, insects, flowering plants, non-flowering plants, ferns, mosses, fungi. Environment, micro habitat, adaption, human impact, ecological, ecosystem, nature reserves, parks, ponds, pollution, litter, deforestation, field, hedgerow, pond, woodland, seashore, ocean, rainforest, arctic, desert



Year 4

Sound

Prior learning

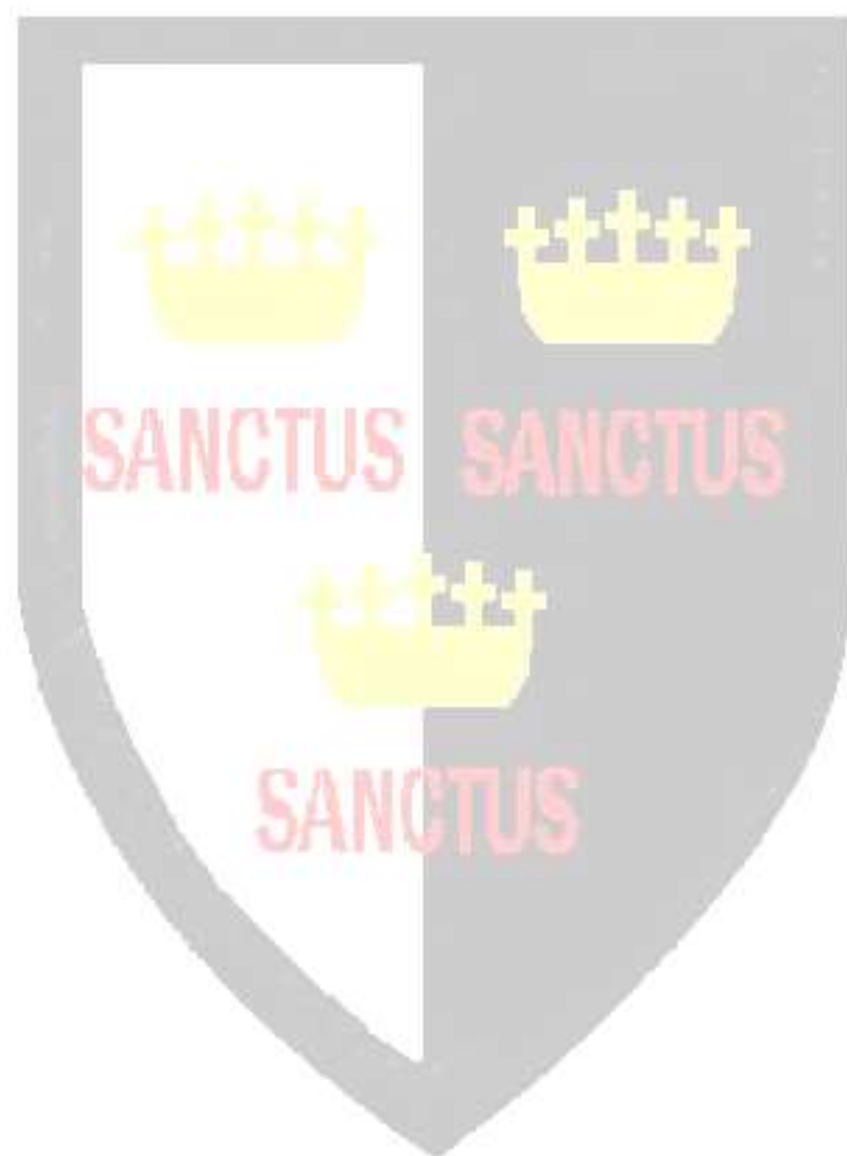
• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1)

Learning objectives

- ❖ 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.

Key vocabulary:

Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation, ear drum



Year 4

States of matter

Prior learning

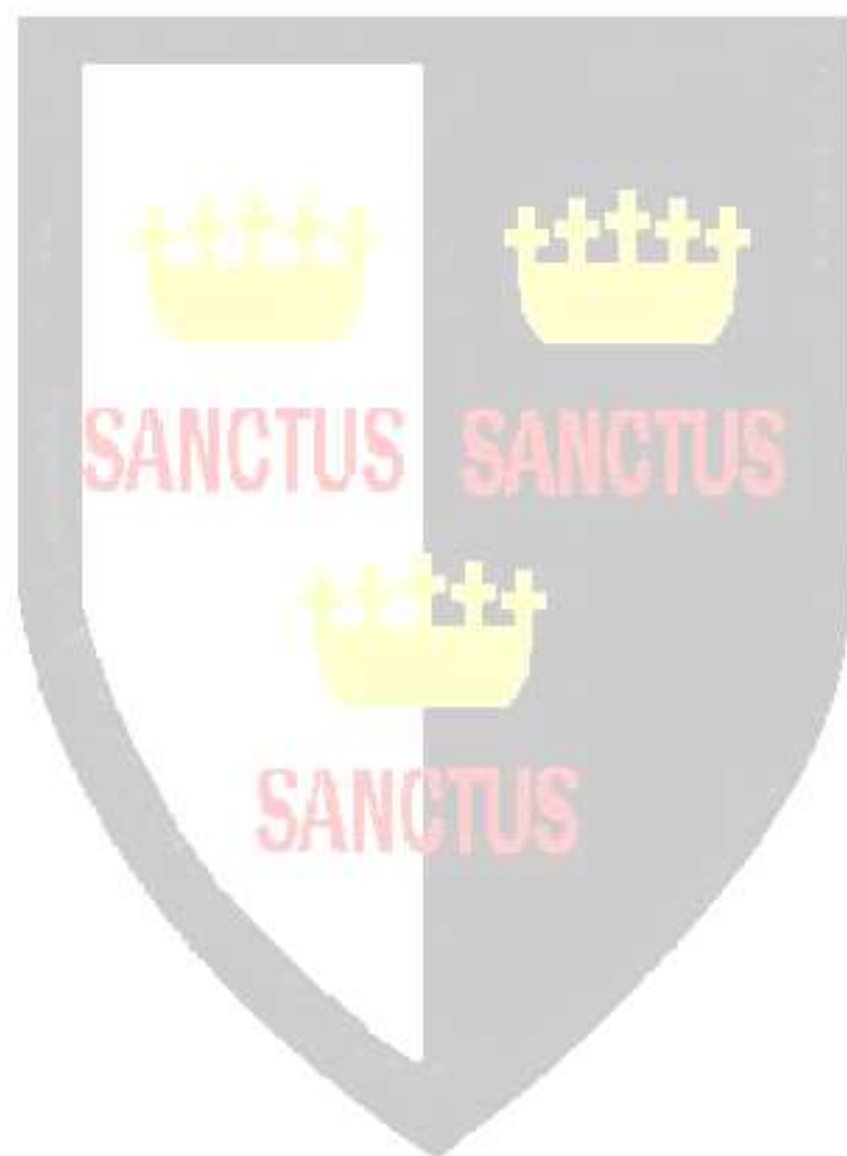
- Distinguish between an object and the material from which it is made. (Y1)
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1)
 - Describe the simple physical properties of a variety of everyday materials. (Y1)
 - Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1)
- 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)
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2)

Learning objectives

- ❖ Compare and group materials together, according to whether they are solids, liquids or gases.
- ❖ 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 ($^{\circ}\text{C}$).
- ❖ Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Key vocabulary:

Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, heat, cooled, evaporation, temperature, Celsius, water cycle, water vapour, precipitation



Year 5

Summer 2

Animals and humans

Prior learning

- Notice that animals, including humans, have offspring which grow into adults. (Y2)

Learning objectives

- ❖ Describe the changes as humans develop to old age.

Key vocabulary:

Humans, gestation, baby, child, teenager, adult, geriatric, puberty, hormones, muscles, testicles, pubic hair, voice, acne, breasts, hips, period, ovulation

Year 5

Spring 1

Earth and space

Prior learning

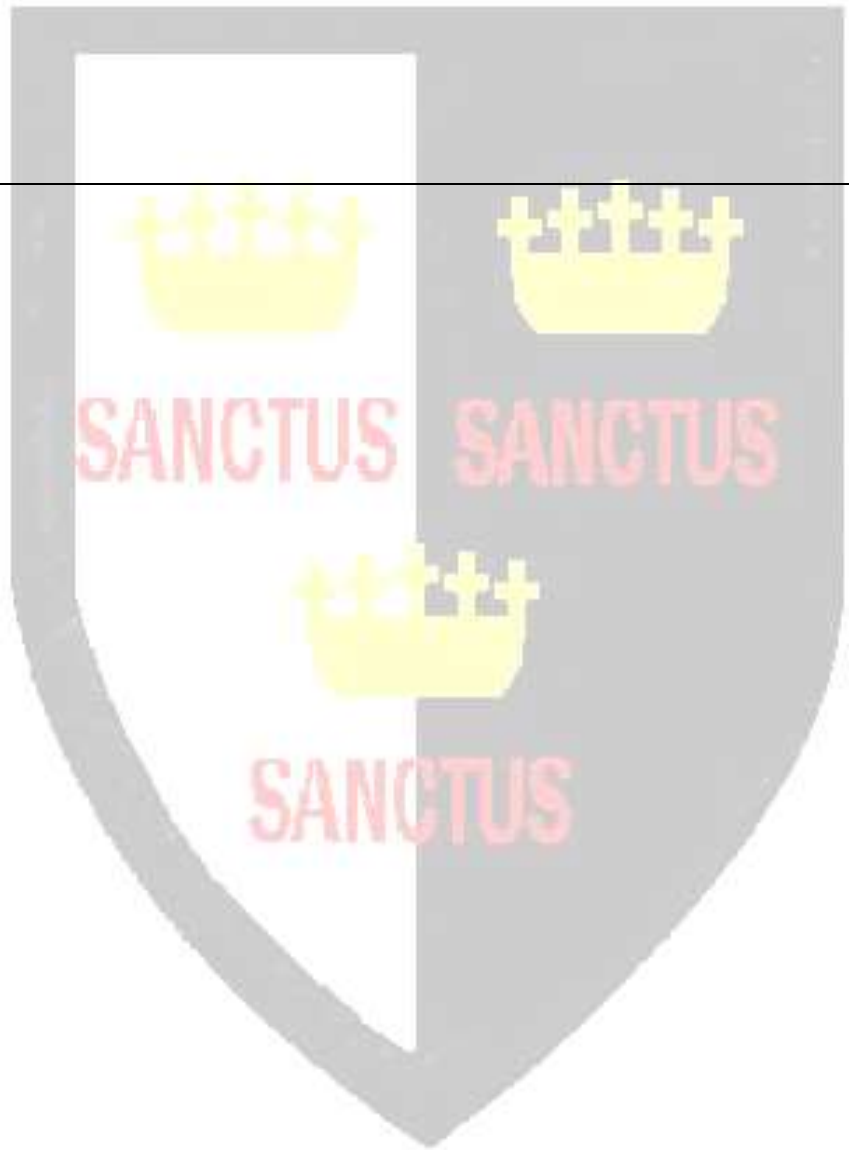
- Observe changes across the four seasons. (Y1)
- Observe and describe weather associated with the seasons and how day length varies. (Y1)

Learning objectives

- ❖ 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.

Key vocabulary:

Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets, Earth's axis



Year 5

Spring 2

Forces

Prior learning

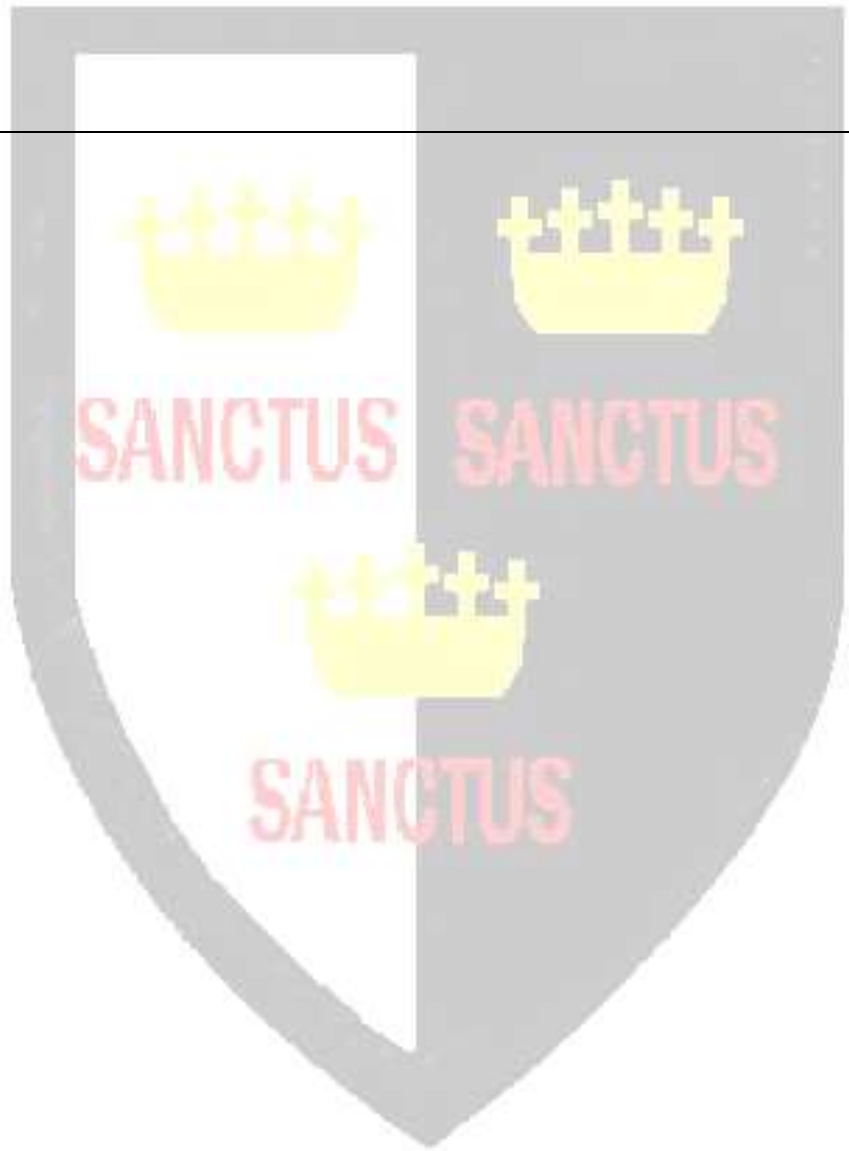
- Compare how things move on different surfaces. (Y3)
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (Y3)
- Observe how magnets attract or repel each other and attract some materials and not others. (Y3)
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. (Y3)
- Describe magnets as having two poles. (Y3)
- Predict whether two magnets will attract or repel each other, depending on which poles are facing. (Y3)

Learning objectives

- ❖ 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.

Key vocabulary:

Force, gravity, Earth, Newton, force meter, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears



Year 5

Summer 1

Living things and their habitats

Prior learning

- Notice that animals, including humans, have offspring which grow into adults. (Y2)
- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3)

Learning objectives

- ❖ 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.

Key vocabulary:

Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, larva, chrysalis, pupa, asexual, plantlets, runners, bulbs, cuttings, stigma, style, anther, ovary, ovule, seed formation, seed dispersal

Year 5

Autumn Term

Properties and changes of materials

Prior learning

- 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)
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2)
- Compare and group materials together, according to whether they are solids, liquids or gases. (Y4)
- 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 ($^{\circ}\text{C}$). (Y4)
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (Y4)

Learning objectives

- ❖ 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.

Key vocabulary:

Thermal/electrical insulator/conductor, opaque, transparent, translucent, magnetic, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material, evaporation, condensation.

Year 6

Spring 1

Animals, including humans

Prior learning

- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2)
- 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. (Y3)
- Describe the simple functions of the basic parts of the digestive system in humans. (Y4)
- Identify the different types of teeth in humans and their simple functions. (Y4)

Learning objectives

- ❖ 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.

Key vocabulary:

Heart, pulse rate, pumps, blood, blood vessels, veins, arteries, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle

Year 6

Summer 2

Electricity

Prior learning

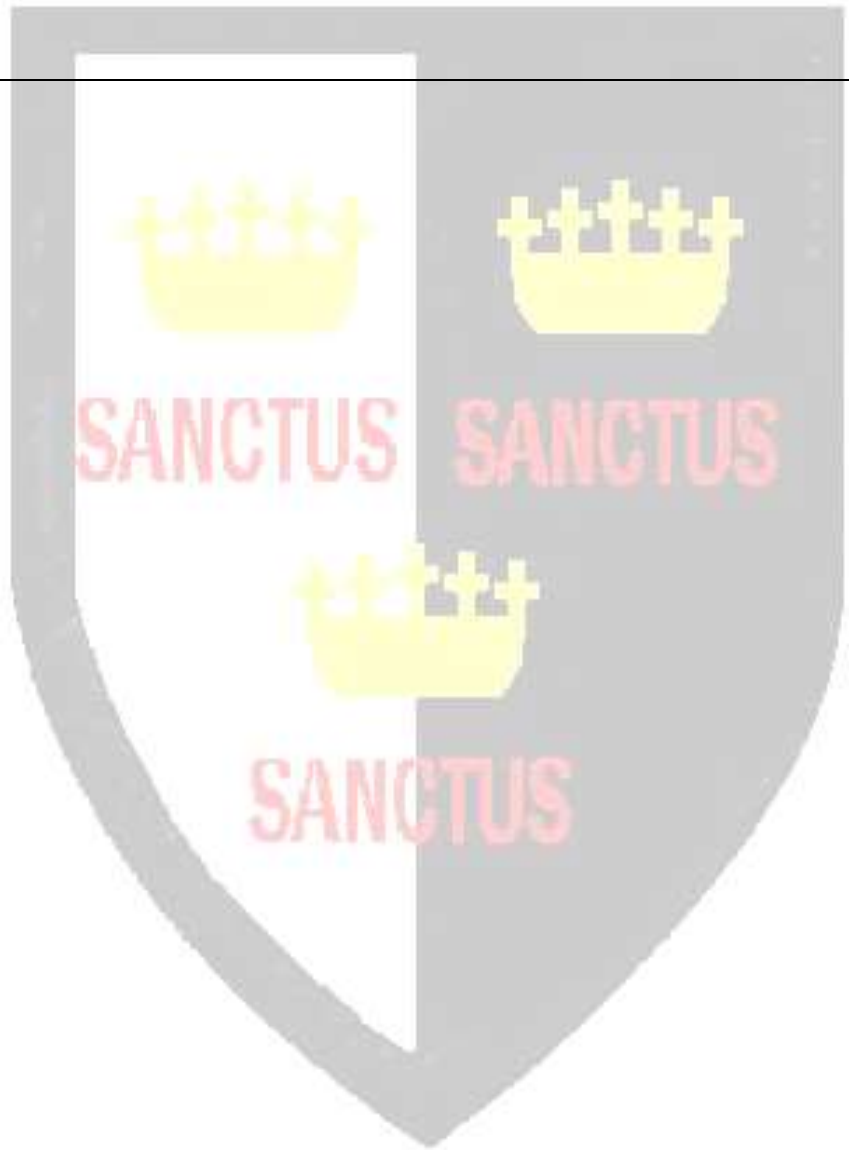
- Identify common appliances that run on electricity. (Y4)
 - Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. (Y4)
 - Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. (Y4)
 - Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. (Y4)
 - Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4)

Learning objectives

- ❖ 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.

Key vocabulary:

Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, wire, buzzer, motor, switch, voltage
Children do not need to understand what voltage is, but will use volts and voltage to describe different batteries. The words "cells" and "batteries" are now used interchangeably.



Year 6

Spring 2

Evolution and inheritance

Prior learning

- 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)
 - Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3)
 - Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4)

Learning objectives

- ❖ 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.

Key vocabulary:

Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils, evolve, evolution

Year 6

Light

Prior learning

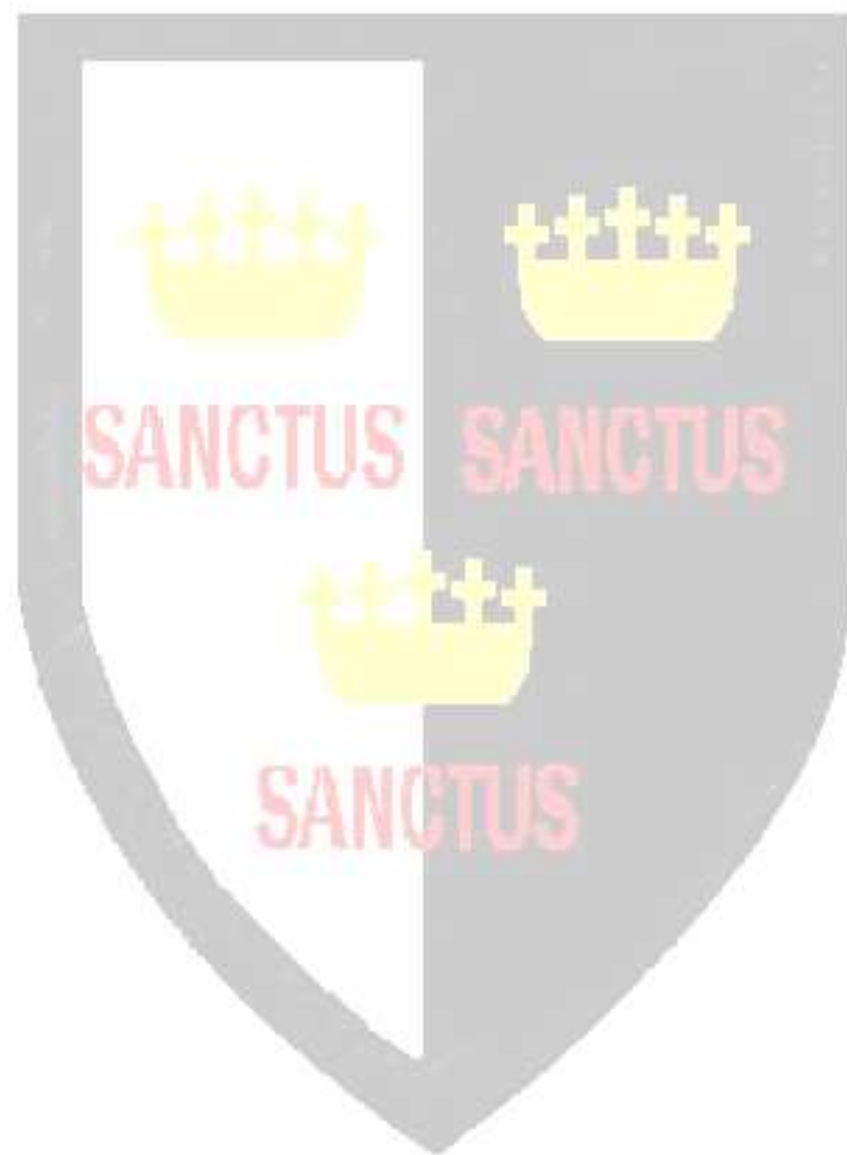
- Recognise that they need light in order to see things and that dark is the absence of light. (Y3)
- Notice that light is reflected from surfaces. (Y3)
- Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3)
- Recognise that shadows are formed when the light from a light source is blocked by an opaque object. (Y3)
- Find patterns in the way that the size of shadows change. (Y3)

Learning objectives

- ❖ 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.

Key vocabulary:

straight lines, light rays, eyes, reflect, reflected, reflection, light sources, shadows, transparent, translucent, opaque size, shape, pattern, mirrors.



Year 6

Autumn Term

Living things and their habitats

Prior learning

- Recognise that living things can be grouped in a variety of ways. (Y4)
- Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4)
- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5)
- Describe the life process of reproduction in some plants and animals. (Y5)

Learning objectives

- ❖ 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.
- ❖ Give reasons for classifying plants and animals based on specific characteristics.

Key vocabulary:

Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering plants, micro-organisms, kingdom, species