

Castle View Primary School Science Curriculum

EYFS – Understanding The World

EYFS Objectives 3-4 year olds- Nursery:

Science

- To talk about the changes in the environment (autumn changes).
- To observe animals and plants around them.
- To know that apples and pears grow on trees.
- To know the difference between soft and hard things.
- To talk about the changes in the environment (Winter) changes.
- To know that ice changes when it gets warm.
- To talk about the changes in the environment (Spring) changes.
- To know that a tadpole changes into a frog.
- To explore fossils.
- To talk about the changes in the environment (Summer) changes.
- To know that plants grow.
- To know that liquids change when they are frozen.

End of Nursery Goals:

- I can talk about how the environment around me changes.
- I can talk about how plants and animals change.
- I can talk about how I have grown and changed.

EYFS Objectives Reception:

Science

- To identify Autumn as one of the 4 seasons and discuss the changes.
- To use the 5 senses to describe when exploring outside.
- To know that an orchard is where fruit trees grow.
- To know that a biscuit changes from soft to hard when heated.
- To identify Winter as one of the 4 seasons and discuss the changes.
- To know how and why materials change. (ice)
- To understand the term hibernation.
- To identify Spring as one of the 4 seasons and discuss the changes.
- To know the life cycle of a frog.
- To know that a fossil is made from the bones of a dinosaur.
- To know who Mary Anning's is.
- To identify Summer as one of the 4 seasons and discuss the changes.
- To know the process of planting or growing a plant/ vegetable.
- To know how to care for plants/ vegetables.
- To know that liquids become solid when they are frozen.

End of Reception Goals (ELG's):

- To explore the natural world around them, making observations and drawing pictures of animals and plants
- To 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
- To understand some important processes and changes in the natural world around them, including the seasons and changing states of matter

Castle View Primary School Science Curriculum

Year 1 – Animals including humans

Prior learning:

- Identify different parts of their body.
- Have some understanding of healthy food and the need for variety in their diets.
- Show care and concern for living things.
- Know the effect of exercise on their body.

National Curriculum Objectives:

- 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.

Assessment Questions:

- What are some different parts of the human body?
- What are our five senses?
- Which body parts are used for each sense?
- Name three different types of animals.
- What is the difference between a herbivore and a carnivore?
- How are some animals different? How are some animals the same?

Key vocabulary:

head, ears, neck, knee,
eyes, stomach, foot, mouth,
hand, arms, chest, elbow,
toes, fingers, leg, senses,
taste, smell, touch, sight,
hear, mammals, birds, fish,
reptiles, amphibians,
insects, herbivore,
omnivore, carnivore



Castle View Primary School Science Curriculum

Year 1 – Plants

Prior learning:

- Develop an understanding of growth.
- Show care and concern for living things and the environment.
- Talk about some of the things they have observed, such as plants.
- Make observations of plants and explain why some things occur and talk about changes.

National Curriculum Objectives:

- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
- Identify and describe the basic structure of a variety of common flowering plants, including trees.

Assessment Questions:

- What grows from a seed?
- What is the name of the colourful part of the flower?
- What part of the flower are the leaves attached to that make the flower tall?
- Which part of the flower grows beneath the soil?
- How are some leaves different?
- What is the difference between evergreen and deciduous trees?

Key vocabulary:

fruits, vegetable, plants, seed, roots, stem, flower, bud, leaves, petals, environment, Daisy, Poppy, Rose, tree, trunk, bark, branches, crown, evergreen, deciduous, large, flat, spiky, conifer, pine, oak



Castle View Primary School Science Curriculum

Year 1 – Materials

Prior learning:

- Ask questions about the place they live in.
- Talk about why things happen and how they work.
- Discuss the things they have observed, such as, natural and found objects.
- Manipulate materials to achieve a planned effect.

National Curriculum Objectives:

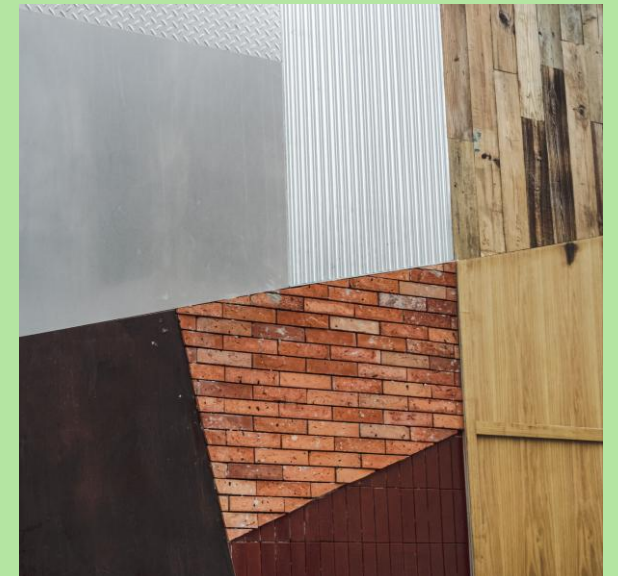
- Distinguish between an object and the material from which it is made?
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.
- Describe the simple physical properties of a variety of everyday materials.
- Compare and group together a variety of everyday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

Assessment Questions:

- Can you name some of our everyday materials?
- What are some of the properties of everyday materials?
- What is one of the ways I can group materials?
- What does it mean to be absorbent? What does it mean to be waterproof?
- What does it mean for an object to be opaque? Transparent?
- Can you name a material which is stretchy?

Key vocabulary:

wood, plastic, glass, metal,
water, rock, hard, soft,
stretchy, stiff, shiny, dull,
rough, smooth, bendy, not
bendy, material, sort, group,
classify, absorbent, fair test,
liquid, soak, waterproof, not
waterproof, opaque,
transparent, measure



Castle View Primary School Science Curriculum

Year 1 – Seasonal changes

Prior learning:

- Develop an understanding of change.
- Observe and explain why certain things may occur.
- Look closely at similarities, differences, patterns and change.
- Comment and question about the place they live or the natural world.

National Curriculum Objectives:

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

Assessment Questions:

- What are the four seasons of the year?
- Why do leaves change colour and why do some fall off trees?
- What does winter feel like?
- Why are there sudden showers in spring?
- How can the sun be dangerous?
- What are clouds?

Key vocabulary:

seasons, spring, summer, winter, autumn, leaf, leaves, sunlight, water, snow, temperature, freezing, rain, rainfall, showers, UV rays, sunny, heat, Earth, tilt, axis, cloudy, overcast



Castle View Primary School Science Curriculum

Year 2 – Plants

Prior learning:

- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
- Identify and describe the basic structure of a variety of common flowering plants, including trees.

National Curriculum Objectives:

- 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.

Assessment Questions:

- What are the roots for? What is the stem for? What are the petals for?
- What happens after a seed has been planted?
- What does a plant need to grow?
- Can a seed grow in different materials?
- What is a bulb?
- What happens if plants do not have water? Light? Warmth?

Key vocabulary:

stem, leaf, flower, roots, cactus, bluebell, sunflower, cycle, seed, water, sunlight, grow, soil, warmth, space, materials, plant, predict, bulb, dormant, life cycle, light, investigation, observe



Castle View Primary School Science Curriculum

Year 2 – Living things and their habitats

Prior learning:

- Comment and question about the place they live or the natural world.
- Show care and concern for living things and the environment.
- Talk about things they have observed, such as plants and animals.
- Notice features of objects in the environment.

National Curriculum Objectives:

- 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.

Assessment Questions:

- Name 3 things that are alive, 3 things that are dead and 3 things that have never been alive.
- Why does an animal need to live in a suitable habitat?
- Choose an animal and say how it is suited to where it lives.
- What is a microhabitat? Can you give an example of one and what might live there?
- What kind of habitat might a bee need?
- Finish this food chain: grass, rabbit, _____ - dog/frog or fox?

Key vocabulary:

living, alive, dead, suitable, suited, habitat, basic need, shelter, habitat, biome, rainforest, desert, tundra, woodland, savannah, grassland, minibeast, microhabitat, log, stones, environment, food chain, eaten, eat



Castle View Primary School Science Curriculum

Year 2 – Animals including humans

Prior learning:

- Name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Name a variety of common animals that are carnivores, herbivores and omnivores.
- Describe and compare the structure of a variety of common animals.
- Identify, name, draw and label the basic parts of the human body.

National Curriculum Objectives:

- 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.

Assessment Questions:

- What are the stages of a frog's lifecycle?
- What do animals and humans need to stay alive?
- How could we look after a cow?
- Why does exercise increase our pulse rate?
- What is a balanced diet? Is it ok to eat sweets?
- What are the three types of microbes?

Key vocabulary:

offspring, lifecycle, baby, tadpole, chick, nutrients, air, food, water, survival, carnivore, omnivore, herbivore, exercise, diet, nutrition, hygiene, pulse, food group, healthy, balanced diet, virus, bacteria, fungi, clean



Castle View Primary School Science Curriculum

Year 2 – Materials

Prior learning:

- Distinguish between an object and the material from which it is made.
- Identify and name a variety of everyday materials, including wood, glass, plastic, 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 properties.

National Curriculum Objectives:

- 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.

Assessment Questions:

- Why could a bike frame not be made of rubber?
- Wood, stone and paper – which one is the odd one out?
- Is chocolate a suitable material for a door handle?
- What would the pros and cons be for making a tent out of brick?
- What is shock absorbency?
- Who is John Dunlop? How has he shaped travel today?

Key vocabulary:

material, wood, plastic, glass, metal, paper, fabric, squashy, bendy, flexible, rigid, mouldable, twist, squeeze, stretch, bend, comparative test, suitable, strength, waterproof, shock absorbency, reflectors, evaluate, rubber, bumpy



Castle View Primary School Science Curriculum

Year 3 – Plants

Prior learning:

- Identify and name a variety of common wild and garden plants.
- Identify and describe the basic parts of flowering plants.
- Know that seeds and bulbs grow into mature plants.
- Know that plants need water, light and warmth to grow and stay healthy.

National Curriculum Objectives:

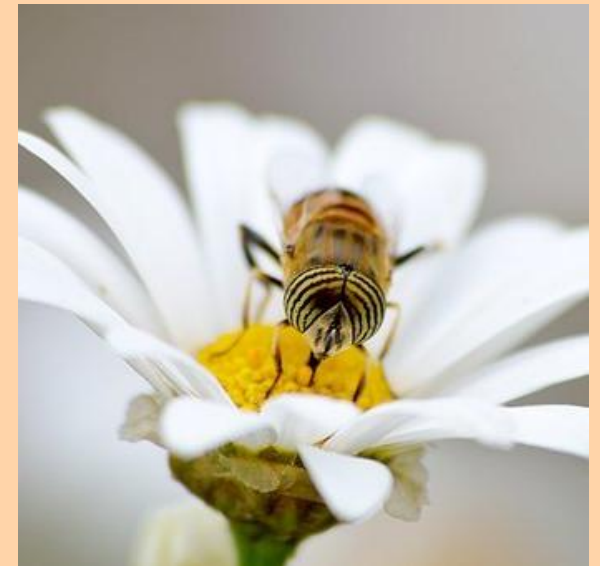
- Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.
- Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.
- Investigate the way in which 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.

Assessment Questions:

- What is the job of the roots, stem, leaves and flowers?
- What happens to plants when conditions for growth are not favourable?
- How is water transported through a plant?
- What is pollination?
- What is seed dispersal?
- How does a flowering plant reproduce?

Key vocabulary:

Roots, stem, leaf, flower, water, nutrients, transport, pollination, germination, seed dispersal, flowering plant



Castle View Primary School Science Curriculum

Year 3 – Light

Prior learning:

- Some knowledge of where light comes from.
- Will have seen shadows and may know that they appear when it is sunny.
- Some understanding of a reflection.
- May understand that light is needed to be able to see things.

National Curriculum Objectives:

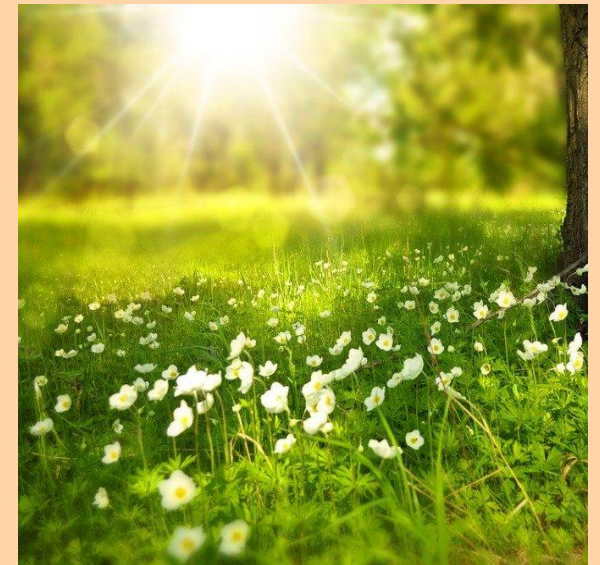
- Recognise that they need light in order to see things and that dark is the absence of light.
- Notice that light is reflected from surfaces.
- Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.
- Recognise that shadows are formed when the light from a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

Assessment Questions:

- What is darkness?
- What happens to light that is not reflected?
- Why are ultraviolet rays dangerous?
- How is a shadow formed? Do all objects and materials have shadows?
- What happens to our shadows when the sun is lower in the sky?
- Which material would make a useful pair of curtains, and why?

Key vocabulary:

light, light source, darkness, natural, artificial, reflection, absorb, ultraviolet rays, radiation, emit, sun cream, factor, shadow, transparent, translucent, opaque, east, west, data logger, LUX, absence of light



Castle View Primary School Science Curriculum

Year 3 – Animals including humans

Prior learning:

- Know that animals, including humans, have offspring which grow into adults.
- Know the basic needs of animals and humans for survival.
- Recognise the importance of exercise, healthy eating and hygiene.

National Curriculum Objectives:

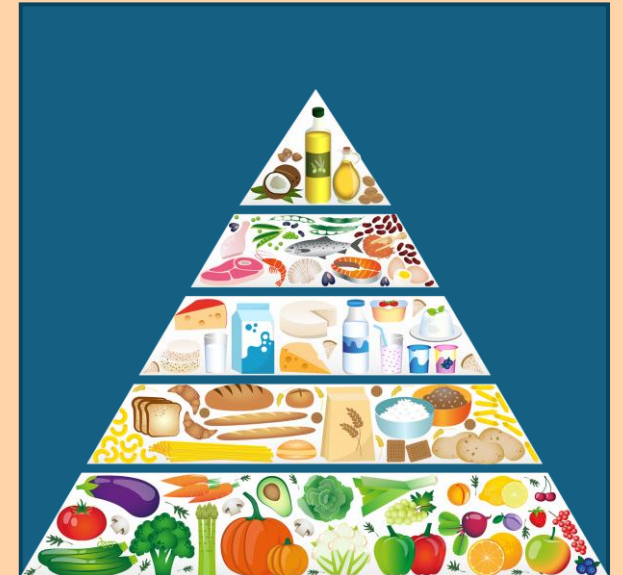
- Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.
- Identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Assessment Questions:

- Why does the human body need a skeleton?
- How do muscles and bones work together?
- What is an exoskeleton?
- How do our bodies protect organs?
- Why is a balanced diet important?
- What nutrients does the body need?

Key vocabulary:

skeleton, bone, joint, muscle, support, movement, vertebrate, invertebrate, exoskeleton, nutrition, nutrient, balanced diet, carbohydrate, protein, fat



Castle View Primary School Science Curriculum

Year 3 – Rocks

Prior learning:

- Identify common rocks in the environment.
- Know that soil supports plant growth.
- Understand that fossils are evidence of things that lived in the past.

National Curriculum 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.

Assessment Questions:

- Are all rocks hard?
- What are the three groups that rocks are classified into?
- How can you test which rock is the hardest?
- Who was Mary Anning? What was she famous for?
- What is the role of a geologist?
- Can you name some layers that can be found in a soil sample?

Key vocabulary:

rock, fossil, igneous, sedimentary, metamorphic, weathering, soil, organic matter, permeable, impermeable



Castle View Primary School Science Curriculum

Year 3 – Forces and magnets

Prior learning:

- Understand that pushes and pulls can start, stop or change movement.
- Observe how objects move in different ways.

National Curriculum 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.

Assessment Questions:

- How does friction affect movement?
- How do different surfaces affect movement?
- Which materials are magnetic?
- How is magnetic force different from most other forces?
- What happens when two magnets with the same pole face each other?
- How can a compass be used?

Key vocabulary:

force, push, pull, friction, surface, magnet, attract, repel, magnetic, north pole, south pole, compass, contact, non-contact



Castle View Primary School Science Curriculum

Year 4 – Living things and their habitats

Prior learning:

- Comment about the place they live or the natural world and show care for living things and the environment.
- Identify and name a variety of plants and animals in their habitats, including microhabitats.
- Compare 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.

National Curriculum 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.

Assessment Questions:

- What are features that all living things have? Does that mean all living things are the same?
- What is classification? How might you use this?
- What is meant by 'vertebrate'? What is meant by 'invertebrate'?
- What does evergreen mean? What does deciduous mean?
- How are sea creatures becoming endangered?
- Name 3 ways the environment can change to endanger animals.

Key vocabulary:

classification, classification keys, environment, habitat, vertebrate, invertebrate, insects, mammals, reptiles, birds, fish, amphibians, deciduous, evergreen, endangered, species, human impact, positive impact, negative impact



Castle View Primary School Science Curriculum

Year 4 – Sound

Prior learning:

- Know that sounds can be heard with our ears.
- Know that different objects make different sounds.
- Understand that humans use their sense of hearing to gather information.

National Curriculum 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.

Assessment Questions:

- Sounds are made by _____?
- What unit is sound measured in?
- Can you hear a scream in space?
- What happens to sound as the distance increases?
- Explain the science behind instruments making sounds.
- What is the purpose of ear defenders, why are they necessary in some professions?

Key vocabulary:

vibration, amplified, loud, quiet, energy, sound waves, decibels, volume, pitch, particles, vacuum, frequency, distance, fainter, increases, sound, instrument, ear



Castle View Primary School Science Curriculum

Year 4 – Animals including humans

Prior learning:

- Should be able to notice that animals, including humans, have offspring which grow into adults.
- Identify that humans and some other animals have skeletons and muscles for support, protection and movement.
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
- 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.

National Curriculum 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.

Assessment Questions:

- How are sounds made?
- Can sound travel through space?
- What is pitch?
- What happens to sound as the distance increases?
- How can a sound be made louder?
- Why are ear defenders useful?

Key vocabulary:

vibration, vibrate, sound,
source, pitch, volume, loud,
quiet, medium, distance,
instrument



Castle View Primary School Science Curriculum

Year 4 – Changing state

Prior learning:

- Identify and compare everyday materials.
- Describe simple physical properties of materials.
- Understand that materials can be changed by squashing, bending, twisting and stretching.

National Curriculum 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 (°C).
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Assessment Questions:

- What are the three states of matter?
- How are liquids different from solids?
- What is melting? What is freezing?
- What is evaporation?
- What is condensation?
- What happens in the water cycle?

Key vocabulary:

solid, liquid, gas, state, particle, melting, freezing, evaporation, condensation, temperature, water cycle, precipitation, collection



Castle View Primary School Science Curriculum

Year 4 – Electricity

Prior learning:

- Identify objects that use electricity.
- Understand that switches turn things on and off.

National Curriculum 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.

Assessment Questions:

- What components are needed to make a circuit work?
- What happens if a component is removed from a circuit?
- What is the difference between a conductor and an insulator?
- What does a switch do?
- How has electricity changed the way we live?
- What is renewable energy?

Key vocabulary:

electricity, circuit, cell, battery, wire, bulb, switch, conductor, insulator, appliance, renewable energy



Castle View Primary School Science Curriculum

Year 5 – Living things and their habitats

Prior learning:

- Classify living things using observable characteristics.
- Use classification keys to identify organisms.
- Understand life cycles and reproduction in plants and animals.
- Understand that environments can change and affect living things.

Key vocabulary:

classification, classify, characteristic, vertebrate, invertebrate, classification key, organism, evidence, microorganism, bacteria, fungi, mould, yeast

National Curriculum 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.

Assessment Questions:

- What is a vertebrate?
- How does a classification key help scientists identify living things?
- Why might scientists change the way they classify a living thing?
- Why do scientists classify living things?
- What is a microorganism?
- How can microorganisms be helpful?



Castle View Primary School Science Curriculum

Year 5 – Properties of materials

Prior learning:

- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.
- Compare and group together a variety of everyday materials on the basis of their simple physical properties.
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
- 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 (°C).

National Curriculum 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.

Assessment Questions:

- How could you sort materials without touching them? Is there anything you could use?
- What is the difference between melting and dissolving?
- Can a material be recovered from a solution?
- Can milk be turned into butter?
- When bicarbonate of soda mixes with vinegar, what new substance will be formed?
- What is Spencer Silver famous for inventing?

Key vocabulary:

material, property, dissolve, solution, soluble, insoluble, mixture, reversible, irreversible, separate, substance, chemical, permeable, hard



Castle View Primary School Science Curriculum

Year 5 – Animals including humans

Prior learning:

- Know that animals and humans have offspring which grow into adults.
- Understand the importance of healthy lifestyles.
- Understand basic human body systems including digestion and nutrition.

Key vocabulary:

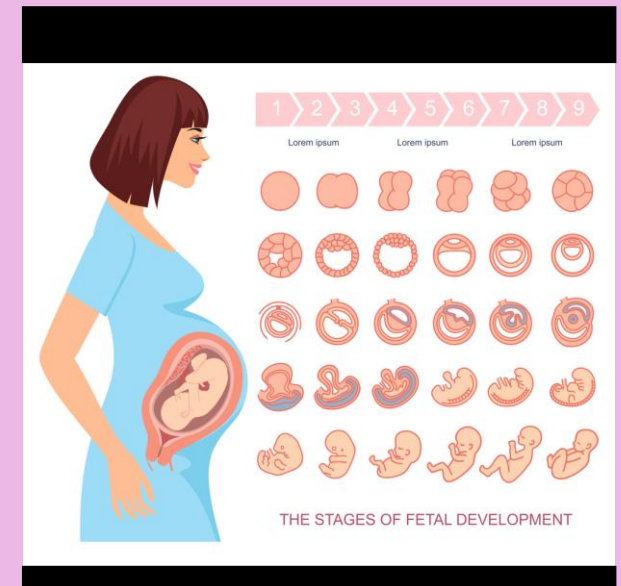
infant, child, adolescent, adult, elderly, development, growth, foetus, puberty, physical health, mental health, wellbeing

National Curriculum Objectives:

- Describe the changes as humans develop to old age.

Assessment Questions:

- What are the stages of the human life cycle?
- How does a foetus develop before birth?
- How does a person change as they grow older?
- Why does puberty happen?
- What is the difference between mental and physical health?
- Name three ways to look after your mental and physical health.



Castle View Primary School Science Curriculum

Year 5 – Forces

Prior learning:

- Describe magnets as having two poles and predict whether they will attract or repel each other.
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- Compare how things move on different surfaces.
- 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.

National Curriculum 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.

Assessment Questions:

- What is gravity?
- Are weight and mass the same thing?
- How does the surface area of a parachute affect the time taken to fall?
- Why do streamlined shapes move more easily through water?
- How does friction affect movement?
- Why are levers, pulleys and gears useful?

Key vocabulary:

force, push, pull, gravity, weight, mass, air resistance, friction, surface area, water resistance, streamlined, opposing, contact force, levers, pulleys, gears, mechanism



Castle View Primary School Science Curriculum

Year 5 – Space

Prior learning:

- May have some knowledge about space.
- Some understanding about how the Earth orbits the sun.

National Curriculum 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.

Assessment Questions:

- Can you name the planets of our solar system?
- What's the difference between a gas giant and a rocky planet?
- Why do we have different moon phases?
- How do we know the Earth is spherical?
- What is the difference between weight and mass?
- How are craters formed?

Key vocabulary:

solar system, sun, moon,
Mercury, Venus, Earth, Mars,
Jupiter, Saturn, Uranus,
Neptune, orbit, star, planet,
day, night, rotate, axis,
spherical, gravity, asteroid,
crater



Castle View Primary School Science Curriculum

Year 6 – Living things and their habitats

Prior learning:

- Comments and questions about the place they live or the natural world and show care and concern for living things and the environment.
- Explore and compare the differences between things that are living, dead, and things that have never been alive.
- Describe the life process of reproduction in some plants and animals.
- 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.
- 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.
- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.

Key vocabulary:

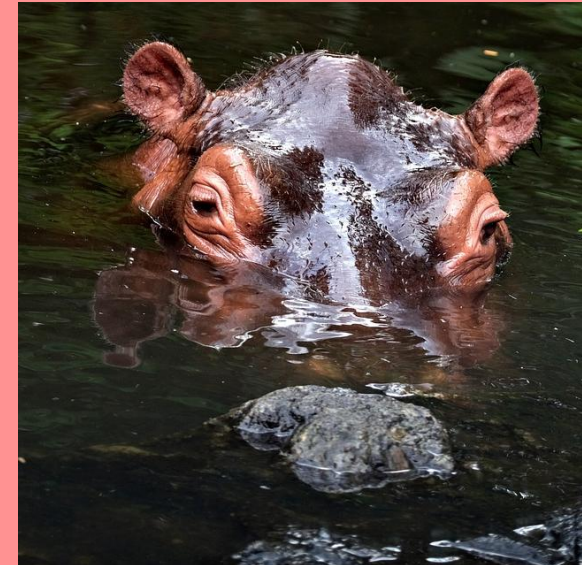
classification,
characteristics, vertebrate,
invertebrate, minibeast, Carl
Linnaeus, Kingdom, Phylum,
Class, Order, Genus, Family,
Species, classify, micro-
organism, microbe,
bacteria, fungi, vaccine,
decay, microscopic, yeast

National Curriculum Objectives:

- 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.

Assessment Questions:

- What is a vertebrate?
- What is an invertebrate?
- What is classification?
- What are the 7 levels of Linnaeus' system?
- What are micro-organisms?
- What is bacteria and why can this be good and bad?



Castle View Primary School Science Curriculum

Year 6 – Light

Prior learning:

- Recognise that light is needed to see.
- Understand that darkness is the absence of light.
- Recognise that light is reflected from surfaces.
- Know that shadows are formed when light is blocked.

National Curriculum 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.

Assessment Questions:

- How does light travel?
- How do we see an object?
- Why can we not see objects in complete darkness?
- Why does a shadow have the same shape as the object creating it?
- How does knowledge of light help us explain shadows?
- How does light help us see the world around us?

Key vocabulary:

light, source, reflection, reflect, beam, shadow, opaque, eye, darkness, periscope



Castle View Primary School Science Curriculum

Year 6 – Animals including humans

Prior learning:

- Know that the digestive system breaks down food.
- Understand the importance of nutrition, exercise and healthy lifestyles.
- Understand how humans grow and develop through life.

Key vocabulary:

circulatory system, heart, blood, artery, vein, capillary, oxygen, nutrient, circulation, exercise, pulse, lifestyle, health

National Curriculum 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.

Assessment Questions:

- What is the function of the heart?
- What do arteries, veins and capillaries do?
- What does blood transport around the body?
- How are nutrients transported around the body?
- Why is exercise important for a healthy body?
- How can lifestyle choices affect the body?



Castle View Primary School Science Curriculum

Year 6 – Electricity

Prior learning:

- Construct simple series circuits.
- Identify common circuit components.
- Understand conductors, insulators and switches.

National Curriculum 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.

Assessment Questions:

- What happens if too many components are added to a circuit?
- How does adding more cells affect the brightness of a bulb?
- How can changing a circuit affect its performance?
- Why does adding more cells make a buzzer louder?
- How can circuits be designed to perform different jobs?
- Why are circuit symbols useful?

Key vocabulary:

electricity, circuit, cell, battery, bulb, wire, buzzer, switch, brightness, volume, symbol, circuit diagram



Castle View Primary School Science Curriculum

Year 6 – Evolution and inheritance

Prior learning:

- Understand how fossils are formed.
- Understand that living things produce offspring.
- Understand life cycles and reproduction.
- Recognise that environments influence how living things survive.

National Curriculum 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.

Assessment Questions:

- How do fossils help us learn about animals that lived long ago?
- Why do some animals adapt over time?
- Why are individuals within a species not identical?
- What is inheritance?
- How has a cactus adapted to survive in the desert?
- What could happen if living things did not adapt over time?

Key vocabulary:

fossil, fossilisation, extinct, adaptation, survival, variation, inheritance, inherited, offspring, evolution, habitat, environment

