Castle View Primary School Science Curriculum

Year 6 – Living things and their habitats

Prior learning:

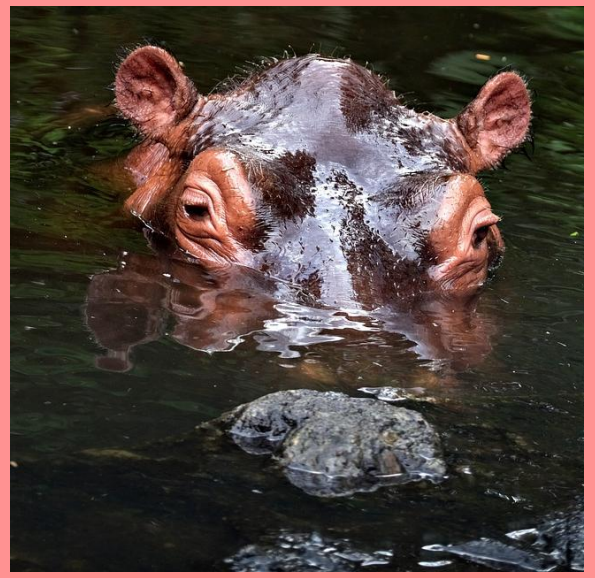
- Comments and questions about the place they live or the natural world and show care and concern for living things and the environment.
- Explore and compare the differences between things that are living, dead, and things that have never been alive.
- Describe the life process of reproduction in some 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 things and darkness 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.

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:

- What is light and what is it necessary for?
- How does a periscope work?
- When the lights are turned off, why do our pupils expand?
- Do coloured objects make colourful shadows?
- What is refraction? Why does it occur?
- How are rainbows formed?

Key vocabulary:

light, reflect, energy, straight, incidence, visible, absorb, lens, shadow, colour, refraction, refract, beam, ray, filter, colour, spectrum, prism

Castle View Primary School Science Curriculum

Year 6 – Animals including humans

Prior learning:

- Notice that animals, including humans, have offspring which grow into adults.
- Describe the basic needs of animals, including humans, for survival.
- 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.
- 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.
- Describe the changes as humans develop to old age.
- Construct and interpret a variety of food chains, identifying producers, predators and prey.

Key vocabulary:

circulatory system, heart, blood, blood vessels, vein, artery, transport, oxygen, nutrients, gas exchange, capillaries, arteries, lungs, drugs

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 human heart?
- What is our heart rate measured in?
- What is our blood made up of?
- How are nutrients transported around the body?
- What does it mean to be healthy?
- How is smoking negative for our body?

Castle View Primary School Science Curriculum

Year 6 – Electricity

Prior learning:

- 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.

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 I add too many components to a circuit?
- How does an energy stick work? What does it prove?
- What is a cell/battery? How do they work?
- Why does a buzzer become louder when the voltage in a circuit is increased?
- If you make an electrical game, how will you know if it works?
- What does a ‘danger electricity’ sign look like?

Key vocabulary:

electricity, electric current, battery, cell, bulb, wire, motor, buzzer, switch, brightness, circuit, voltage, loudness, Alessandro Volta, current, electrical

Castle View Primary School Science Curriculum

Year 6 – Evolution and inheritance

Prior learning:

- Describe in simple terms, how fossils are formed when things that have lived are trapped within rock.
- Describe the changes as humans develop to old age.
- Notice that animals, including humans, have offspring which grow into adults.
- Describe the life process of reproduction in some plants and animals.
- Recognise that environments can change and that this can sometimes pose dangers to living things.

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:

- If an animal is extinct now, how do we know it definitely existed?
- Why have some animals adapted over time?
- If you were a small creature, would you survive better if you were a sweet or a raisin?
- How has a cactus adapted in order to survive in the desert environment?
- What could happen if plants and animals didn't adapt over time?
- What is inheritance?

Key vocabulary:

fossil, environment, fossilisation, Charles Darwin, adaptation, evolution, natural selection, adaptive traits, habitat, inherited traits, inheritance, DNA, genes, variation