Castle View Primary School Science Curriculum

Year 5 – Living things and their habitats

Prior learning:

- Comment about the place they live or the natural world.
- Show care and concern for living things and the environment.
- Compare the differences between things that are living, dead and things that have never been alive.
- 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.
- 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.
- Recognise that living things can be grouped in a variety of ways.
- Recognise that environments can change and that this can sometimes pose dangers to living things.
- Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.

Key vocabulary:

mammal, amphibian, insect, bird, life cycle, Venn diagram, fertilisation, pollination, stigma, anther, petal, stamen, ovary, stem, sepal, style, filament, fair test, predication, enquiry, evaluation, fish, external fertilisation, human reproduction, conservationist

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 life cycle?
- Name the three stages of a mammal's life cycle.
- What role does a bee have in pollination? What is asexual reproduction?
- Why is fair testing important?
- Are gestation periods the same in all animals?
- What is a conservationist? Why are they important?

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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).

Key vocabulary:

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

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?

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Year 5 – Animals including humans

Prior learning:

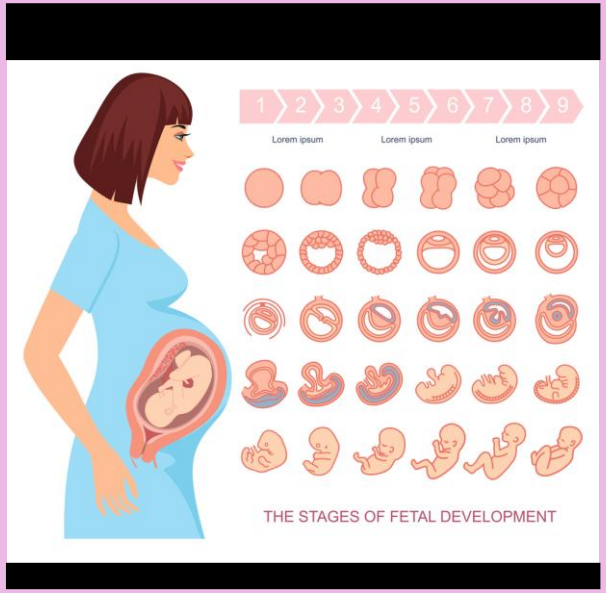
- Notice that animals, including humans, have offspring which grow into adults.
- Find out about and describe the basic needs of animals, including humans, for survival.
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
- Identify that 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.
- Construct and interpret a variety of food chains, identifying producers, predators and prey.
- 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.

Key vocabulary:

gestation, reproduce, foetus, growth, development, child, adult, old age, life cycle, adolescence, toddler, puberty, physical health, mental health

National Curriculum Objectives:

- Describe the changes as humans develop to old age.



Assessment Questions:

- Why do animals have different gestation periods?
- Why is it important to know data about a foetus? What can it help to do?
- What are the stages of a human's life cycle, beginning with foetus?
- Why do changes during puberty occur at different times?
- What is mental health? What is physical health?
- Can you name three ways to look after mental health?

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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:

- Gravity is a type of force which _____?
- Are weight and mass the same thing?
- How does the surface area of a parachute affect the time taken to fall to the ground?
- Why can you sink and float in water even though you don't change your weight?
- Will a smooth surface produce friction?
- 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

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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