

The Priory Catholic Voluntary Academy - Science Knowledge, Skills and Understanding Progression Ladders (EYFS - Year 6)

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Living Things and their Habitats (Biology)	<p>Understanding of the World-The Natural World Reception Explore the natural world around them. Recognise some environments that are different to the one in which they live. ELG Explore the natural world around them, making observations and drawing pictures of animals and plants. 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.</p>		<p>Living Things and their Habitats Match certain living things to the habitats they are found in. (2.3) Explore and explain the differences between living and non-living things. (2.3) Describe some of the 7 life processes common to plants and animals, including humans. (2.3) Decide whether something is living, dead or non-living. (2.3) Describe how a habitat provides for the basic needs of things living there. (2.3) Describe a range of different habitats. (2.3) Describe how plants and animals are suited to their habitat. (2.3) Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain. (2.3) Identify and name different sources of food by making a variety of simple food chains. (2.3)</p>		<p>Living Things and their Habitats Recognise that living things can be grouped in a variety of ways. (4.1) Explore and use a classification key to group, identify and name a variety of living things (plants, vertebrates, invertebrates) in the local and wider environment. (4.1) Compare the classification of common plants and animals to living things found in other places (under the sea, prehistoric). (4.1) Recognise that environments can change and this can sometimes pose a danger to living things. (4.1)</p>	<p>All Living Things and their Habitats Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (5.1) Describe the life process of reproduction in common plants. (5.1) Describe the life process of reproduction in some animals. (5.1) Explore the work of well-known naturalists and animal behaviourists (David Attenborough and Jane Goodall). (5.1)</p>	<p>Living Things and their Habitats 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. (6.1) Give reasons for classifying plants and animals based on specific characteristics. (6.1)</p> <p>Evolution and Inheritance Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago. (6.2) Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (6.2) Give reasons why offspring are not identical to each other or to their parents. Explain the process of evolution and describe the evidence for this. (6.2) Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (6.2)</p>

	<p>Understanding of the World-The Natural World Reception Explore the natural world around them. ELG Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p>Animals Including Humans Name the parts of the human body that they can see. (1.1) Draw & label basic parts of the human body. (1.1) Identify the main parts of the human body and link them to their senses. (1.1) Identify and describe the 5 human senses. Compare the bodies of different humans. (1.1) Sort living things and non-living things. (1.3) Name the parts of different animal's bodies. (1.3) Name a range of domestic animals. (1.3) Classify animals by what they eat (carnivore), herbivore, omnivore). (1.3) Point out differences between different animals. (1.3) Identify and name the variety of common animals (including birds, fish, amphibians, reptiles and mammals). (1.3) Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (1.3)</p>	<p>Animals Including Humans Describe the basic needs that animals, including humans need to survive (food, water and air). (2.1) Describe the importance for humans of eating the right amounts of different types of food, identifying healthy and unhealthy foods. (2.1) Describe the importance of exercise for humans. (2.1) Describe good hygiene habitats for humans. (2.1) Describe how animals, including humans grow and change. (2.1) Notice that animals, including humans, have offspring which grow into adults. (2.1) Describe the life cycle of some animals (including fish, amphibians, reptiles, birds and mammals). (2.1) Describe the life cycle of a human (baby, toddler, child, teenager, adult). (2.1)</p>	<p>Animals Including Humans Explain the importance of a nutritionally balanced diet. (3.1) Describe how nutrients, water and oxygen are transported within animals and humans. (3.1) Identify that animals, including humans, cannot make their own food: they get nutrition from what they eat. (3.1) Describe and explain the skeletal system of animals, including humans for support, protection and movement. (3.1) Describe and explain the muscular system of some animals, including humans. (3.1)</p>	<p>Animals Including Humans Identify and name the basic parts of the digestive system in humans. (4.3) Describe the simple functions of the basic parts of the digestive system in humans. (4.3) Identify the simple function of different types of teeth in humans. (4.3) Compare the teeth of herbivores and carnivores. Explain what a simple food chain shows. (4.3) Construct and interpret a variety of food chains, identifying producers, predators and prey. (4.3)</p>	<p>Animals Including Humans Describe the changes as humans develop to old age. (5.3) Research gestation periods of other animals and compare to humans. (5.3) Understand how their emotions and body may change as they approach and move through puberty. (5.3)</p>	<p>Animals Including Humans Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. (6.1) Recognise the impact of diet on the way their bodies function. (6.1) Recognise the impact of exercise and lifestyle on the way their bodies function. (6.1) Recognise the impact of drugs on the way their bodies function. (6.1) Describe the ways in which nutrients and water and transported within animals, including humans. (6.1)</p> <p>RSE Explain the key facts about puberty and the changing adolescent body. (6.3) Understands what sexual intercourse is and how this leads to reproduction. (6.3) Knows how a baby develops in their mother's womb. (6.3)</p>
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<p style="text-align: center;">Plants (Biology)</p>	<p>Understanding of the World-The Natural World Reception Explore the natural world around them. Describe what they see, hear and feel whilst outside. ELG Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p>Plants Identify and name a variety of common wild and garden plants. (1.2) Identify and name deciduous and evergreen trees. Name the parts of a tree (including the trunk, branches and root). (1.2) Name the parts of a plant (including roots, stem, leaves, flowers, petals, bulb, seeds). (1.2) Compare and contrast familiar plants. (1.2)</p>	<p>Plants Describe what plants need to survive. (2.2) Observe and describe how seeds and bulbs grow into mature plants. (2.2) Find out & describe how plants need water, light and a suitable temperature to grow and stay healthy. (2.2)</p>	<p>Plants Identify and describe the functions of different parts of flowering plants (including, roots, stem/trunk, leaves and flowers). (3.1) Explore the requirement of plants for life and growth (air, light, water, nutrients from soil, and room to grow). (3.1) Investigate the way in which water is transported within plants. (3.1) Explain the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (3.1)</p>			
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Understanding of the World -The Natural World

Reception Describe what they see, hear and feel whilst outside.

ELG 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.

Understanding of the World - People, culture and communities

ELG Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps.

Everyday Materials (classifying and grouping)

Distinguish between an object and the material from which it is made. (1.2)

Describe materials using their senses, using specific scientific words. (1.2)

Name some different everyday materials e.g. wood, plastic, metal, water and rock. (1.2)

Explain what material objects are made from. (1.2)

Describe physical properties of everyday materials. (1.2)

Sort a variety of everyday materials into groups on the basis of their physical properties. (1.2)

Classifying and grouping materials

Describe the simple physical properties of a variety of everyday materials. (2.2)

Compare and group together a variety of materials based on their simple physical properties. (2.2)

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, cardboard for particular uses. (2.2)

Explain how things move on different surfaces. (2.2)

Find out about people who developed useful new materials (John Dunlop, Charles Macintosh, John McAdam). (2.2)

Explore how the shapes of solid objects can be changed (squashing, bending, twisting, stretching). (2.2)

Rocks

Compare and group together different rocks on the basis of their appearance and simple physical properties. (3.2)

Describe and explain how different rocks can be useful to us. (3.2)

Describe and explain the differences between sedimentary and igneous rocks, considering the way they are formed. (3.2)

Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (3.2)

Recognise that soils are made from rocks and organic matter. (3.2)

States of Matter

Compare and group materials together, according to whether they are solids, liquids or gases. (4.3)

Explain what happens to materials when they are heated or cooled. (4.3)

Measure or research the temperature at which different materials change state in degrees Celsius. (4.3)

Use measurements to explain changes to the state of water. (4.3)

Identify the part that evaporation and condensation have in the water cycle. (4.3)

Associate the rate of evaporation with temperature. (4.3)

Properties and changes to Materials

Compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. (5.2)

Explain how some materials dissolve in liquid to form a solution. (5.2)

Describe how to recover a substance from a solution. (5.2)

Use their knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving, evaporating. (5.2)

Give reasons, based on evidence for comparative and fair tests for the particular uses of everyday materials, including metals wood and plastic. (5.2)

Describe changes using scientific words (evaporation, condensation). (5.2)

Demonstrate that dissolving, mixing and changes of state are reversible changes. (5.2)

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. (5.2)

Use the terms 'reversible' and 'irreversible'. (5.2)

Forces and Magnets
Compare how things move on 2 different surfaces. (3.3)
Observe that magnetic forces can be transmitted without direct contact. (3.3)
Observe how some magnets attract or repel each other. (3.3)
Classify which materials are attracted to magnets and which are not. (3.3)
Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (3.3)
Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet. (3.3)
Identify some magnetic materials. (3.3)
Describe magnets having two poles (N & S). (3.3)
Predict whether two magnets will attract or repel each other depending on which poles are facing. (3.3)

Earth and Space
Identify and explain the movement of the Earth and other planets relative to the sun in the solar system. (5.2)
Explain how seasons and the associated weather is created. (5.2)
Describe and explain the movement of the Moon relative to the Earth. (5.2)
Describe the sun, earth and moon as approximately spherical bodies. (5.2)
Use the idea of the earth's rotation to explain day and night and the apparent movement of the sun across the sky. (5.2)

Forces
Explain that unsupported objects fall towards the earth because of the force of gravity acting between the earth and the falling object. (5.1)
Identify the effects of air resistance that acts between moving surfaces. (5.1)
Identify the effects of water resistance that acts between moving surfaces. (5.1)
Identify the effects of friction that acts between moving surfaces. (5.1)
Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (5.1)

Light and Sound (Physics)				<p>Light Recognise that they need light in order to see things. (3.3) Recognise that dark is the absence of light. Notice that light is reflected from surfaces. (3.3) Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (3.3) Recognise that shadows are formed when the light from a light source is blocked by a solid object. (3.3) Find patterns in the way that the size of shadows change. (3.3)</p>	<p>Sound Describe a range of sounds and explain how they are made. (4.1) Associate some sounds with something vibrating. Compare sources of sound and explain how the sounds differ. (4.1) Explain how to change a sound (louder/softer). (4.1) Recognise how vibrations from sound travel through a medium to the ear. (4.1) Find patterns between the pitch of a sound and features of the object that produce it. (4.1) Find patterns between the volume of the sound and the strength of the vibrations that produced it. (4.1) Recognise that sounds get fainter as the distance from the sound source increases. (4.1) Explain how you could change the pitch of a sound. (4.1) Investigate how different materials can affect the pitch and volume of sounds. (4.1)</p>		<p>Light Recognise that light appears to travel in straight lines. (6.2) 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. (6.2) 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. (6.2) Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (6.2)</p>
Electricity (Physics)					<p>Electricity Identify common appliances that run on electricity. (4.2) Construct a simple series electric circuit. (4.2) Identify and name the basic part in a series circuit, including cells, wires, bulbs, switches and buzzers. (4.2) Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is</p>		<p>Electricity Identify and name the basic parts of a simple electric series circuit? (cells, wires, bulbs, switches, buzzers) (6.3) Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers, the on/off position of switches. (6.3)</p>

					<p>part of a complete loop with a battery. (4.2)</p> <p>Recognise that a switch opens and closes a circuit. (4.2)</p> <p>Associate a switch opening with whether or not a lamp lights in a simple series circuit. (4.2)</p> <p>Recognise some common conductors and insulators.</p> <p>Associate metals with being good conductors. (4.2)</p>	<p>Use recognised symbols when representing a simple circuit in a diagram. (6.3)</p>
Seasonal Changes	<p>Understanding of the World -The Natural World</p> <p>Reception Understand the effect of changing seasons on the natural world around them.</p> <p>ELG understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>	<p>Seasonal Changes</p> <p>Observe changes across autumn and winter. (1.1)</p> <p>Observe and describe weather associated with the seasons of autumn and winter. (1.1)</p> <p>Observe and describe how day length varies from autumn to winter. (1.1)</p> <p>Observe how plants vary during autumn to winter. (1.1)</p> <p>Observe changes across spring and summer. (1.3)</p> <p>Observe and describe weather associated with the seasons of spring and summer. (1.3)</p> <p>Observe and describe how day length varies from spring to summer. (1.3)</p> <p>Observe how plants vary during spring to summer. (1.3)</p> <p>Observe changes across the four seasons. (1.3)</p> <p>Name the four seasons in order. (1.3)</p>				