

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
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Living Things and their Habitats (Biology)	<p><u>Understanding of the World- The Natural World</u> <i>- Explores outside and comments by using some their senses (Advent).</i> I can use up to 3 of my senses to talk about outside- sight, hearing, smell (3 lessons) <i>- Begins to make observations of the natural world, plants and animals (Advent).</i> I can make observations about the natural world in autumn/winter. I can recognise that some animals are awake during the longer night. <i>- Makes observations of the natural world, plants and animals (Lent).</i> I can begin to understand what a plant needs to grow. I can observe how a plant grows. <i>- Explore the natural world around them, making observations and drawing pictures</i></p>		<p>Living Things and their Habitats Match certain living things to the habitats they are found in. (2.2) Explore and explain the differences between living and non-living things. (2.2) Describe some of the 7 life processes common to plants and animals, including humans. (2.2) Decide whether something is living, dead or non-living. (2.2) Describe how a habitat provides for the basic needs of things living there. (2.2) Describe a range of different habitats. (2.2) Describe how plants and animals are suited to their habitat. (2.2) Describe how animals obtain their food from plants and other animals, using the</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). (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 cycles of common plants. (5.1) Explore the work of well-known naturalists and animal behaviourists (David Attenborough and Jane Goodall). (5.1)</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>
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	<i>of animals and plants (Pentecost/ELG).</i>		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)				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)
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Animals Including Humans (Biology)	<p><u>Understanding of the World- People, Cultures and Communities</u> <i>- Explores/comment own immediate environment using knowledge, from observation, discussion (Advent).</i> I can talk about my local area. <i>- Explores/comments on religious and cultural communities (Advent).</i> I can explore the celebration of Diwali. <i>- Explain similarities and difference between life in own and other countries using stories and non-fiction texts (Pentecost/ELG).</i></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) 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)</p>	<p>Animals Including Humans Describe what animals need to survive. (2.1) Explain that animals grow and reproduce. (2.1) Explain why animals have offspring which grow into adults. (2.1) Describe the life cycle of some living things (e.g. egg, chick, chicken). (2.1) Explain the basic needs of animals, including humans for survival (water, food, air). (2.1) Describe why exercise, balanced diet and hygiene are important for humans. (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 a human. (3.1) Describe and explain the muscular system of a human. (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)</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, exercise, drugs and lifestyle 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>
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		<p>Point out differences between different animals. (1.3)</p> <p>Identify and name a variety of common animals (birds, fish, amphibians, reptiles, mammals, invertebrates). (1.3)</p> <p>Describe how an animal is suited to its environment. (1.3)</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (1.3)</p>					
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Understanding of the World-The Natural World

- Explores outside and comments by using some their senses (Advent).

- Begins to make observations of the natural world, plants and animals (Advent).

I can use up to 3 of my senses to talk about outside- sight, hearing, smell in relation to plants (3 lessons)

- Looks closely at similarities, differences, patterns and change (Lent).

I can observe and compare my plant with others.

- Describe outside by using their senses (Lent).

- Makes observations of the natural world, plants and animals (Lent).

I can describe the blossom growing in our playground.

- Begins to talk about some important processes and changes in the natural world around them eg effects of changing seasons (Lent).

I can recognise flowers that bloom in spring.

- Explore the natural world around them; making observations and drawing pictures of animals and plants (Pentecost/ELG).

- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what

Plants

Name the petals, stem, leaf, bulb, flower, seed, stem and root of a plant. (1.2)

Identify and name a range of common plants and trees. (1.2)

Recognise deciduous and evergreen trees.

Name the trunk, branches and root of a tree.

(1.2)

Describe the parts of a plant (roots, stem, leaves, flowers). (1.2)

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)

Plants

Identify and describe the functions of different parts of flowering plants? (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)

Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (3.1)

	<i>has been read in class (Pentecost/ELG). - Understand some important processes and changes in the natural world around them; including seasons and changing states of matter (Pentecost/ELG).</i>						
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Everyday Materials (classifying and grouping)

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

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

Explain what material objects are made from. (1.2)

Explain why a material might be useful for a specific job. (1.2)

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

Sort materials into groups by a

Classifying and grouping materials

Describe the simple physical properties of a variety of everyday materials. (2.1)

Compare and group together a variety of materials based on their simple physical properties. (2.1)

Changing materials

Explore how the shapes of solid objects can be changed (squashing, bending, twisting, stretching). (2.1)

Find out about people who developed useful new materials (John Dunlop, Charles Macintosh, John McAdam). (2.1)

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, cardboard for particular uses. (2.1)

Explain how things move on different surfaces. (2.1)

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

		<p>given criteria. (1.2)</p> <p>Explain how solid shapes can be changed by squashing, bending, twisting and stretching. (1.2)</p>				<p>(evaporation, condensation). (5.2)</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes. (5.2)</p> <p>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)</p> <p>Use the terms 'reversible' and 'irreversible'. (5.2)</p>	
Forces (Physics)				<p>Forces and Magnets</p> <p>Compare how things move on different surfaces. (3.3)</p> <p>Observe that magnetic forces can be transmitted without direct contact. (3.3)</p> <p>Observe how some magnets attract or repel each other. (3.3)</p>		<p>Earth and Space</p> <p>Identify and explain the movement of the Earth and other planets relative to the sun in the solar system. (5.2)</p> <p>Explain how seasons and the associated weather is created. (5.2)</p> <p>Describe and explain the movement of the Moon relative to the Earth. (5.2)</p>	

				<p>Classify which materials are attracted to magnets and which are not. (3.3)</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (3.3)</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet. (3.3)</p> <p>Identify some magnetic materials. (3.3)</p> <p>Describe magnets having two poles (N & S). (3.3)</p> <p>Predict whether two magnets will attract or repel each other depending on which poles are facing. (3.3)</p>		<p>Describe the sun, earth and moon as approximately spherical bodies. (5.2)</p> <p>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)</p> <p>Forces</p> <p>Explain that unsupported objects fall towards the earth because of the force of gravity acting between the earth and the falling object. (5.1)</p> <p>Identify the effects of air resistance, water resistance and friction that act between moving surfaces. (5.1)</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (5.1)</p>	
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				<p>Light Recognise that they need light in order to see things. (3.2) Recognise that dark is the absence of light. Notice that light is reflected from surfaces. (3.2) Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (3.2) Recognise that shadows are formed when the light from a light source is blocked by a solid object. (3.2) Find patterns in the way that the size of shadows change. (3.2)</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)</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>
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					Investigate how different materials can affect the pitch and volume of sounds. (4.1)		
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 part of a complete loop with a battery. (4.2) Recognise that a switch opens and closes a circuit. (4.2) Associate a switch opening with whether or not a lamp lights in a simple series circuit. (4.2) Recognise some common conductors and insulators. Associate metals with being good conductors. (4.2)</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) Use recognised symbols when representing a simple circuit in a diagram. (6.3)</p>

Seasonal Changes	<p><u>Understanding of the World-The Natural World</u></p> <p><i>- Looks closely at patterns and change (Advent).</i></p> <p>I can begin to recognise the days are getting shorter.</p> <p><i>- Explores outside and comments by using some of their senses (Advent).</i></p> <p>I can begin to recognise how the seasons affect trees.</p> <p><i>- Makes observations of the natural world, plants and animals (Lent).</i></p> <p>I can recognise that the days are getting longer and warmer.</p> <p><i>- Begins to talk about some important processes and changes in the natural world around them eg effects of changing seasons (Lent).</i></p> <p>I can recognise</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 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 changes across the four seasons. (1.3)</p>					
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<p>what items of clothing I would need for Spring.</p> <p>- Explore the natural world around them; making observations and drawing pictures of animals and plants (Pentecost/ELG).</p> <p>- 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 (Pentecost/ELG).</p> <p>- Understand some important processes and changes in the natural world around them; including seasons and changing states of matter (Pentecost/ELG).</p>	<p>Name the four seasons in order. (1.3)</p>					
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