

KILLIGREW SCIENCE KNOWLEDGE PROGRESSION



Knowledge Focus	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals including humans	<p>Observe the effects of activity on their bodies.</p> <p>Eat a healthy range of foodstuffs and understand need for variety in food.</p> <p>Comment and ask questions about aspects of their familiar world.</p> <p>Show care and concern for living things and the environment.</p>	<p>Develop an understanding of growth and change over time when exploring ourselves.</p> <p>Explore photographs and talk about what we can do now, that we could not before.</p> <p>Show care and concern for living things and the environment.</p> <p>Look closely at similarities, differences, patterns and change when looking at ourselves.</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Group common animals as carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (including pets)</p> <p>Identify, name, draw and label the basic parts of the human</p>	<p>Notice that animals, including humans, have offspring that grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different</p>	<p>Identify that animals, including humans, need the right types and amount of nutrition.</p> <p>Understand that they cannot make their own food; they get nutrition from what they eat.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Describe the changes as humans develop to old age.</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals,</p>

			body and say which part of the body is associated with each sense.	types of food, and hygiene.				including humans.
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Seasonal changes	Develop an understanding of growth, decay and changes over time. Look at differences in the environment around them.	Look closely at similarities, differences, patterns and change to trees in the local area. Use scientific vocabulary to explain seasonal change and weather.	Observe changes across the four seasons. Observe and describe the weather associated with the seasons and how the day length varies.					
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Everyday Materials States of matter	Explore things they have observed such as objects discovered. Explore why things happen and how things work. Notice changes that may be reversed.	Explore similarities and differences in relation to objects and materials. Sort materials using basic properties. Make observations and explain why	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials. Describe the simple physical properties of a	Identify and compare the suitability of a variety of everyday materials for particular uses. Find out how the shapes of solid objects can be changed by squashing,		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.	Compare and group together everyday materials on the basis of their properties. Know that some materials will dissolve in liquid to form a solution.	

		<p>some things occur: talk about material change during cookery sessions.</p>	<p>variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>bending, twisting and stretching.</p>		<p>Measure or research the temperature at which this happens in °C.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Describe how to recover a substance from a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the</p>	
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							formation of new materials, and that this kind of change is not usually reversible. Explore the changes associated with burning and the action of acid on bicarbonate of soda.	
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Plants	<p>Talk about their observations of plants and living things.</p> <p>Develop an understanding of growth, decay and changes over time.</p> <p>Show care and concern for living things and the environment.</p> <p>Grow beans and</p>	<p>Comment and ask questions about aspects of their familiar world: the place where they live and/ or the natural world.</p> <p>Talk about some of the things they have observed: plants growing, seeds germinating, blossom, autumnal leaves.</p> <p>Look closely at similarities, differences,</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary</p>			

	understand how to care for them.	patterns and change when planting seeds/potatoes, or when noticing seasonal changes in the school grounds and local environment. Talk about the features of their own immediate environment. Explains how environments might vary from one another.			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.			
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Living things and their habitats	Show care and concern for living things and the environment. Discuss aspects of the habitat that they have observed. Explore the habitats of living things.	Look closely at similarities, differences, patterns and change. Talks about some of the things they have observed such as plants and animals. Knows where some living		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		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.	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.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.

		things live or grow.		<p>which they are suited.</p> <p>Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food</p>		<p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>		<p>Give reasons for classifying plants and animals based on specific characteristics.</p>
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				chain, and identify and name different sources of food.				
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Rocks and Soils	Notice and explore detailed features of objects in their environment.	Talk about some of the things they have observed in natural objects.			<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>			
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Light	Look at shadows and darkness.	Looks closely at similarities, differences, patterns and change when			Recognise that light is needed in order to see things and that dark is the			Recognise that light appears to travel in straight lines.

	Explore the concept of night and day. Investigate nocturnal animals.	exploring shadows created by torches and by the sun.			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.			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.
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Sound	Look closely at similarities, difference	Explore and discuss the sounds of				Identify how sounds are made,		

	<p>between different sounds.</p> <p>Notice sounds in the environment.</p>	different instruments.				<p>associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>		
		Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

<p>Electricity</p>	<p>Seek to acquire basic skills in turning on and operating some ICT equipment.</p> <p>Operate mechanical toys.</p> <p>Begin to understand the concept of a power source.</p>	<p>Know how to operate simple equipment such as CD players, torches and computers.</p> <p>Identify technology that helps them in the home or in school.</p> <p>Begins to understand that objects can be powered in different ways.</p>				<p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>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.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp</p>		<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>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.</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>
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						lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.		
		Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Earth and Space	Look at similarities and differences: night and day. Understand that the sun comes out during the day and that the moon is visible mainly at night.	Look at similarities and differences: notices that the moon changes shape in the day, and that we can see it in the day and at night. Name some of the planets.					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.	
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Evolution and Inheritance								<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit</p>

								their environment in different ways and that adaptation may lead to evolution.
Forces and Magnets	Explore why things happen and how things work.	Look closely at similarities, differences, patterns and change by exploring magnets, magnetic and non-magnetic objects.			<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials on the basis of whether they</p>		<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to</p>	

					<p>are attracted to a magnet.</p> <p>Identify some magnetic materials.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>		have a greater effect.	
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