



Science Progression of Knowledge and Skills – Year 6

	Working Scientifically	Knowledge	Vocabulary
Year 6	Living things and their habitats	Living things and their habitats	Biology
	<p>Pupils might work scientifically by:</p> <ul style="list-style-type: none"> • using classification systems and keys to identify some animals and plants in the immediate environment. • They could research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system. • Research the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification. 	<ul style="list-style-type: none"> • 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. 	Common characteristics, micro-organisms, plants, animals, invertebrates, specific characteristics
	Animals including humans	Animals including humans	Biology
	<p>Pupils might work scientifically by:</p> <ul style="list-style-type: none"> • exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health. 	<ul style="list-style-type: none"> • 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. 	Circulatory system, blood vessels, capillaries, aorta, veins, nutrients, transport, diet, exercise, lifestyle, drugs
	Evolution and Inheritance	Evolution and Inheritance	Biology
	<p>Pupils might work scientifically by:</p> <ul style="list-style-type: none"> • observing and raising questions about local animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. • They might analyse the advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers. 	<ul style="list-style-type: none"> • 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. 	Variation, offspring, inheritance, characteristics, adaptation, habitat, environment evolution, natural selection, fossil, adaptive traits, inherited traits, living things, evolve, evolved





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Light	Light	Physics
<p>Pupils might work scientifically by:</p> <ul style="list-style-type: none"> • deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. • They might investigate the relationship between light sources, objects and shadows by using shadow puppets. • They could extend their experience of light by looking a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur). 	<ul style="list-style-type: none"> • 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 	<p>Light, light sources, reflection, incident ray, reflected ray, the law of reflection, wave, vacuum, straight line, direction, refractions, visible spectrum, prism, shadow, transparent, translucent, opaque</p>
Electricity	Electricity	Physics
<p>Pupils might work scientifically by:</p> <ul style="list-style-type: none"> • systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit. • Understand and identify take the necessary precautions for working safely with electricity. 	<ul style="list-style-type: none"> • 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. 	<p>Circuit, symbol, cell/ battery, current, amps, voltage, resistance, electrons, switches, buzzers, motor, bulb, components, diagram, construct</p>

