



Year 6- Evolution and Inheritance



Prior Learning	In Year 6	Future learning	Key Vocabulary
<ul style="list-style-type: none"> Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Notice that animals, including humans, have offspring which grow into adults. Pupil is beginning to compare the basic needs of different animals and the consequences of these needs not being met or these needs being limited — i.e. death, starvation, adaptation of body. 	<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. 	<p>In <u>Year 7 pupils</u> will be taught:</p> <p>Genetics and evolution Inheritance, chromosomes, DNA and genes</p> <ul style="list-style-type: none"> heredity as the process by which genetic information is transmitted from one generation to the next a simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model differences between species the variation between individuals within a species being continuous or discontinuous, to include measurement and graphical representation of variation the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction the importance of maintaining biodiversity and the use of gene banks to preserve hereditary material. 	<p>Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils</p>

Working Scientifically

What is the most common eye colour in our class? Can you classify these observations into evidence for the idea of evolution, and evidence against?



Year 6- Living Things and Their Habitats



Prior Learning	In Year 6	Later Learning: Children do not need to be taught this year.	Key Vocabulary
<ul style="list-style-type: none">•Comments and questions about the place they live or the natural world. Shows care and concern for living things and the environment. Can talk about things they have observed such as plants and animals.•Notices features of objects in their environment.•Comments and asks questions about their familiar world.•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 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.•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.•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.•Recognise that environments can change and that this can sometimes pose dangers to living things.•To 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.	<ul style="list-style-type: none">•To 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.	<p>In Year 7 pupils will be taught:</p> <p>Genetics and evolution. Chromosomes, genes and DNA in hereditary. Differences between species. Variations within a species. Changes in the environment which may lead to a species less well adapted to compete and reproduce. The importance of maintaining biodiversity.</p>	Classify, compare, bacteria, characteristics, classification, microorganism, organism, invertebrates, vertebrates, flowering, non-flowering, Linnaean.

Working Scientifically

Use classification systems and keys to identify animals and plants in the immediate environment. Research unfamiliar plants and animals from a broad range of other habitats and decide where they belong in the classification system.



Year 6- Electricity



Prior Learning	In Year 6	Future learning: Children do not need to be taught this year.	Key Vocabulary
<ul style="list-style-type: none">●Identify common appliances that run on electricity.●Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.●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.●Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<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.	In Year 7 pupils will be taught: Electrical currents, measured in amperes, in circuits, series and parallel circuits. Currents add where branches meet and current as a flow of charge. Measuring in volts. Battery and bulb rating, resistance, measured in ohms. Differences in resistance. Static electricity- the separation of positive or negative charges when objects are rubbed together. Force between charged objects. Electrical field and forces acting across the space between objects not in contact.	Electricity, electric current, Thomas Edison, Nikola Tesla, Alessandro Volta, alternating current, direct current, battery, cell, bulb, wire, open switch, closed switch, motor, buzzer, circuit, voltage, brightness, loudness.

Working Scientifically

Systematically identifying the effect of changing one component at a time in a circuit. Design and make a set of traffic lights, a burglar alarm or some other useful circuit. Research famous scientists in relation to electricity.



Year 6- Light



Prior Learning	In Year 6	Later Learning (children do not need to be taught this year)	Key Vocabulary
<ul style="list-style-type: none">•Recognise that they need light in order to see things and that dark is the 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.	<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.	In Year 7 pupils will be taught: Light waves. Including the speed of light, light waves and the transmission of light through materials. Light refraction and light transferring energy from source to absorber leading the chemical and electrical effects. Colours and different frequencies of light.	Shadow, light, filter, colour, reflect, absorb, refract, spectrum, wavelength, prism, visible, lens, angle, incidence, straight, ray, beam, wave, photon, energy.

Working Scientifically

Decide where to place rear view mirrors on a car. Design and make a periscope, and explain how it works using the idea that light travels in a straight line. Investigate the relationship between light sources, objects and shadows through shadow puppets. Look at a range of phenomena such as rainbows, colours on soap bubbles and objects looking bent in water and coloured filters. (note they don't need to know why these occur)



Year 6- Animals Including Humans



Prior Learning	In Year 6	Later learning: Children do not need to be taught this year.	Key Vocabulary
<ul style="list-style-type: none">•Should be able to 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 (water, food and air).•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.•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.•Construct and interpret a variety of food chains, identifying producers, predators and prey.•Describe the changes as humans develop to old age.	<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.	In Year 7 pupils will be taught about: Cells and organisation. The skeletal and muscular system. Nutrition and digestion. Gas exchange stems. Reproduction and health.	Circulatory system, heart, lungs, blood vessels, blood, artery, vein, pulmonary, alveoli, capillary, digestive, transport, gas exchange, villi, nutrients, water, oxygen, alcohol, drugs, tobacco.

Working Scientifically

Explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.