

Science Progression Map

Plants

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>Plants are living things. Some grow wild and some are planted by humans. Parts of all plant include: roots, stem, leaves</p> <p>Flowering plants also have petals. (across a variety of species).</p> <p>Some common wild and garden plants include: daisy, primrose, buttercup, dandelion, bluebells, daffodils, wild garlic, sunflowers.</p> <p>Parts of a tree include: roots, trunk, branches, leaves, flowers (across a variety of species).</p> <p>Deciduous trees lose their leaves for part of the year (e.g. oak, sycamore, ash, willow, beech)</p> <p>Evergreen trees keep their leaves all year (e.g. Yew, Pine, Spruce).</p>	<p>Y2 Living things and their habitats</p> <p>Animals get their food from eating plants and/or other animals. This can be represented by a simple food chain. Animals get their food from within their habitat. A habitat is an area where plant and animals live and need each other to survive. Plants and animals are suited to the habitat they live in.</p> <p>A micro-habitat is a very small part of a habitat e.g. a patch of soil, a crack in a rock pool or under a log.</p> <p>Y2 Plants</p> <p>Plants may grow from either seeds or bulbs. Seeds germinate and grow into seedlings which then continue to grow into mature plants.</p> <p>Plants change over time. Plants need water, light, air and suitable temperatures to survive. If they do not receive the right amount of each they will die. Different plants require different amounts of resources to grow and stay healthy.</p> <p>Plants are suited to the habitat they live in, e.g. a cactus needs little water</p>	<p>Roots absorb water and provide stability. Plants also require nutrients from the soil.</p> <p>Stem / trunk provides strength and transport water.</p> <p>Leaves absorb light to create food. Plants need sufficient room to grow without excess competition for resources e.g. light.</p> <p>Flowers attract insects for pollination.</p> <p>Seeds form within a flower following pollination (eg dandelion, strawberries)</p> <p>Seeds of flowering plants can be dispersed by wind, animals, explosion and water.</p>	<p>Y4 – Living things and their habitats</p> <p>Plants can be classified as flowering and non-flowering.</p> <p>A classification key is used to classify a group of organisms by splitting them down into smaller and smaller groups based on characteristics.</p> <p>If the environment of a habitat changes it can affect the plants and animals that live there, often badly. Example, climate change, deforestation, mining or farming.</p> <p>If one organism in a food chain is affected, it can affect other organisms.</p>	<p>Y5 – Living things and their habitats</p> <p>Some plants start as a seed. Only fertilised seeds will produce offspring. Fertilised seeds contain genetic material from the male (pollen) and female (ovule). The male pollen fertilises the female ovule.</p> <p>Plants can also reproduce asexually. Asexual reproduction in plants does not require pollination. Examples include daffodils producing bulbs, strawberry plants producing runners or potatoes producing tubers.</p>	<p>Y6 – Living things and their habitats</p> <p>Plants fit into broad groups of observable characteristics for example leaf shape, flowers, roots, stems.</p> <p>Use and create a classification key to classify plants.</p> <p>Micro-organisms such as bacteria, yeast, toadstools, and mushrooms do not fit into the two main groups of plants and animals.</p>

			and a periwinkle can survive in shade.				
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Animals including humans

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>The key parts of the human body are head, neck, face, ears, eyes, hair, mouth, teeth, arms, elbows, hands, legs, knees and feet. Eyes are for sight, ears are for hearing, skin is for touch, nose is for smell, tongue is for taste.</p> <p>Different animals (fish, amphibians, reptiles, birds and mammals) have different structures. <i>There is no need to define animal groups at this stage, only identify the structure and features of a variety of common animals.</i></p> <p>Fish include: Shark, Cod, Goldfish, Eel.</p> <p>Amphibians include: Frog, Toad, Newt, Axolotl, Salamander.</p> <p>Reptiles include: Snakes, Lizards, Crocodiles, Turtles.</p> <p>Birds include: Pidgeon, Duck, Emu, Penguin</p> <p>Mammals include: Human, Cat, Elephant, Whale, Dolphin</p> <p>A carnivore is an animal that eats other animals, a herbivore is an animal that eats plants, an omnivore is</p>	<p>Y2 Living things and their habitats</p> <p>Animals get their food from eating plants and/or other animals. This can be represented by a simple food chain.</p> <p>Y2 Animals including humans</p> <p>Animals reproduce and have offspring that grow into adults over time. Different animals are born and grow in different ways.</p> <p>All animals need water, food and air to survive. A human requires exercise to build and maintain strong bones, muscles and maintain flexibility.</p> <p>A human requires a healthy balanced diet to provide the right nutrients to grow and maintain health.</p> <p>A human needs to maintain hygiene e.g. washing hands, to avoid</p>	<p>All animals need water, food and air to survive. A human requires a healthy balanced diet to provide the right nutrients to grow and maintain health (year 2 Animals incl. humans). Animals cannot produce their own food (unlike plants) and get nutrition from their food. A food chain shows the transfer of nutrition from plants to animals e.g. grass-rabbit-fox.</p> <p>There are five main food groups (carbohydrates, proteins, dairy, fats, fruit and vegetables).</p> <p>A healthy animal requires the right amount of each food group.</p> <p>Some animals have skeletons which provide support, protection and movement. The main bones are the skull, jaw, spine, humerus, ulna,</p>	<p>Animals cannot produce their own food (unlike plants) and get nutrition from their food. A food chain shows the transfer of nutrition from plants to animals e.g. grass-rabbit-fox or Seaweed-Crab-Squid-Shark. Food chains are made up of producers, prey and predators. Producers – plants that produce their own food from sunlight</p> <p>Predators – animals that feed on other animals</p> <p>Prey – animals that are eaten by other animals.</p> <p>Humans absorb nutrition through the digestive system.</p> <p>The basic parts of the human digestive system are: teeth, mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus.</p> <p>Humans have four different types of teeth. The different types of</p>	<p>Y5 Living things and their habitats:</p> <p>A life cycle shows the different stages of life for living things. Stages include fertilisation-birth-growth-reproduction.</p> <p>Teach life cycles for examples of mammal, amphibian, insect and bird and identify the similarities (e.g. eggs) and differences (e.g. metamorphosis).</p> <p>All animals start as an egg. Only fertilised eggs will produce offspring. Fertilised eggs contain genetic material from the male (sperm) and female (egg). The male sperm fertilises the female egg.</p> <p>Y5 Animals including humans:</p> <p>The stages of human growth are: foetus, baby, childhood, adolescence, adulthood, old age.</p>	<p>Y6 Living things and their habitats:</p> <p>Animals fit into broad groups of observable characteristics for example beaks, wings, number of legs, feathers, hair.</p> <p>Use and create a classification key to classify animals.</p> <p>Y6 Animals including humans:</p> <p>The circulatory system carries oxygen and nutrients around the body to where they are needed and removes waste (e.g. Carbon Dioxide).</p> <p>a. The circulatory system consists of the heart, blood vessels and blood.</p> <p>b. The heart pumps blood through the lungs and around the body.</p> <p>c. Blood vessels (arteries, veins and capillaries) transport</p>

		<p>an animal that eats both other animals and plants.</p> <p>Carnivores include: Tiger, Crocodile, Orca, Bald Eagle.</p> <p>Herbivores include: Horse, Rabbit, Snail, Grasshopper, Parrotfish.</p> <p>Omnivores include: Bear, Fox, Chicken, Crow, Turtle.</p>	<p>catching and spreading disease.</p>	<p>radius, pelvis, femur, tibia and fibia.</p> <p>Most animals have muscles which provide support and movement by moving the bones of the skeleton.</p>	<p>teeth in humans are: incisors (cutting); canines (tearing); premolars/molars (crushing/grinding).</p> <p>Mouth – food is broken down by the teeth and mixed with saliva and swallowed.</p> <p>Oesophagus – the food is sent to the stomach.</p> <p>Stomach – food is churned with stomach acid and is pushed into the small intestine.</p> <p>Small intestine – food is broken down and nutrients absorbed.</p> <p>Large intestine – water is absorbed and food is pushed along to the rectum.</p> <p>Rectum – storage chamber for food that can't be absorbed.</p> <p>Anus – waste food/faeces is excreted.</p>		<p>blood around the body.</p> <p>d.Blood consists of red blood cells, white blood cells, platelets & plasma.</p> <p>Exercise is part of a healthy lifestyle.</p> <p>a .A lack of exercise can lead to poor health.</p> <p>b. Exercise increases the rate of circulation in order to provide more oxygen and nutrients to the body and remove more waste.</p> <p>Nutrients and water are transported by the circulatory system from the digestive system to where they are needed.</p> <p>a. A healthy diet contains the right proportion of food types.</p> <p>An unhealthy diet can lead to poor health.</p>
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Everyday materials

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>Common materials used to make objects include wood, plastic, metal, rock and fabric.</p> <p>The material is the substance an object is made from and an object can be made from more than one material.</p> <p>Common properties of materials include shiny, dull, stretchy, rough, smooth etc.</p> <p>Different materials have different properties.</p> <p>Some materials e.g. plastic can be in different forms with very different properties.</p> <p>Some objects can be made from different materials e.g. plastic, metal or wooden spoons.</p> <p>Materials or objects can be grouped by similar physical properties.</p>	<p>The material used to make an object should be suitable for that object. Some materials are more suitable than others, e.g. wood is a better choice than brick for furniture.</p> <p>Some objects can be made from different materials e.g. plastic, metal or wooden spoons. The choice depends on the use e.g. plastic is disposable but metal lasts longer.</p> <p>Some materials should be flexible e.g. rubber band but others should be rigid or strong e.g. spoon.</p> <p>To change the shape of an object a force needs to be applied. This is usually a push, pull, twist or bend.</p> <p>Some objects need a bigger force to make them change shape.</p>	<p>Rocks -</p> <p>Rock is naturally occurring material which has a range of uses e.g. building, ceramics, making glass, pumice. There are many different types of rock. A rock is a solid mineral material formed as part of the earth's surface millions of years ago (as well as other planets).</p> <p>Rocks can be grouped together based on their appearance and simple physical features (some rocks are durable/not durable, permeable/impermeable, shiny/smooth/glassy).</p> <p>Forces and magnets -</p> <p>Materials can be grouped according to whether they are magnetic or not.</p>	<p>States of matter-</p> <p>Materials can be either solid, liquid or gas at room temperature. The state of matter depends on the surrounding temperature.</p> <p>Materials change state when they are heated or cooled.</p> <p>Water is constantly recycled through different stages by the water cycle.</p> <p>Evaporation from the surface □ Condensing to clouds □ Rain or snow □</p> <p>Water returns to the surface.</p> <p>Electricity -</p> <p>Conductors, such as metals, and insulators can affect the function of components in a circuit by allowing/disrupting the flow of electricity.</p>	<p>Materials can be grouped together based on similar properties.</p> <p>A material is chosen for a particular use because of its properties.</p> <p>Some substances are soluble in water. If they dissolve, they form a solution.</p> <p>The original solute can be recovered by evaporating the solvent (water).</p> <p>Solids and liquids can be separated by sieving or filtering.</p> <p>In reversible changes the original substance can be recovered easily.</p> <p>Dissolving, mixing and state changes are reversible.</p> <p>In irreversible changes, the original substances cannot be recovered easily.</p> <p>Burning and cooking are examples of irreversible reactions.</p>	

Living things and their habitats

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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		<p>Plants</p> <p>Plants are living things. Parts of all plant include: roots, stem, leaves Flowering plants also have petals. (across a variety of species). Some common wild and garden plants. Parts of a tree include: roots, trunk, branches, leaves, flowers (across a variety of species). Deciduous trees lose their leaves for part of the year (e.g. oak, sycamore, ash, willow, beech) Evergreen trees keep their leaves all year (e.g. Yew, Pine, Spruce).</p> <p>Animals including humans -</p> <p>The key parts of the human body are the head, neck, face, ears, eyes, hair, mouth, teeth, arms, elbows, hands, legs, knees and feet. Eyes are for sight, ears are for hearing, skin is for touch, nose is for smell, tongue is for taste. Different animals (fish, amphibians, reptiles, birds and mammals) have different structures. Identify and name a variety of common animals including fish, amphibians, birds, reptiles and mammals. A carnivore is an animal that eats other animals, a herbivore is an animal that eats plants, an omnivore is an animal that eats both other animals and plants.</p>	<p>Things can be: Living (moves, grows, requires food & reproduces e.g. plants & animals) Dead (was once living but is no longer e.g. wood, leaves & bones) Never being alive (materials like glass, metal & plastic or water & air) Animals get their food from eating plants and/or other animals. This can be represented by a simple food chain. Animals get their food from within their habitat. A habitat is an area where plants and animals live and need each other to survive. Plants and animals are suited to the habitat they live in. A micro-habitat is a very small part of a habitat e.g. a patch of soil, a crack in a rock pool or under a log.</p>	<p>Plants -</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>Animals can be classified as vertebrates (fish, amphibians, reptiles, birds, and mammals) or invertebrates (snails and slugs, worms, spiders, and insects). Plants can be classified as flowering and non-flowering. A classification key is used to classify a group of organisms by splitting them down into smaller and smaller groups based on characteristics. If the environment of a habitat changes it can affect the plants and animals that live there, often badly. Example, climate change, deforestation, mining or farming. If one organism in a food chain is affected, it can affect other organisms.</p> <p>Animals including humans -</p> <p>A food chain shows the transfer of nutrition from plants to animals. Food chains are made up of producers, prey and predators.</p>	<p>A life cycle shows the different stages of life for living things. Stages include fertilisation-birth-growth-reproduction. Teach life cycles for examples of mammal, amphibian, insect and bird and identify the similarities (e.g. eggs) and differences (e.g. metamorphosis). All animals start as an egg. Only fertilised eggs will produce offspring. Fertilised eggs contain genetic material from the male (sperm) and female (egg). The male sperm fertilises the female egg. Some plants start as a seed. Only fertilised seeds will produce offspring. Fertilised seeds contain genetic material from the male (pollen) and female (ovule). The male pollen fertilises the female ovule. Plants can also reproduce asexually. Asexual reproduction in plants does not require pollination. Examples include daffodils producing bulbs, strawberry plants producing runners or potatoes producing tubers.</p>	<p>Carl Linnaeus developed a classification system, known as taxonomy. Animals fit into broad groups of observable characteristics for example beaks, wings, number of legs, feathers, hair. Use and create a classification key to classify animals. Plants fit into broad groups of observable characteristics for example leaf shape, flowers, roots, stems. Use and create a classification key to classify plants. Micro-organisms such as bacteria, yeast, toadstools, and mushrooms do not fit into the two main groups of plants and animals.</p>
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		<p>Seasonal changes - The UK has four seasons: spring, summer, autumn & winter. The seasons are associated with typical weather e.g. warmth in summer and cold in winter.</p>					
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Rocks							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>Materials Common materials used to make objects include wood, plastic, metal, rock and fabric. The material is the substance an object is made from and an object can be made from more than one material. Common properties of materials include shiny, dull, stretchy, rough, smooth etc. Different materials have different properties. Some materials e.g. plastic can be in different forms with very different properties. Some objects can be made from different materials e.g. plastic, metal or wooden spoons. Materials or objects can be grouped by similar physical properties.</p>	<p>Materials The material used to make an object should be suitable for that object. Some materials are more suitable than others, e.g. wood is a better choice than brick for furniture. Some objects can be made from different materials e.g. plastic, metal or wooden spoons. The choice depends on the use e.g. plastic is disposable but metal lasts longer. Some materials should be flexible e.g. rubber band but others should be rigid or strong e.g. spoon. To change the shape of an object a force needs to be applied. This is usually a push, pull, twist or bend. Some objects need a bigger force to make them change shape.</p>	<p>Rock is naturally occurring material which has a range of uses e.g. building, ceramics, making glass, pumice. There are many different types of rock. A rock is a solid mineral material formed as part of the earth's surface millions of years ago (as well as other planets). Rocks can be grouped together based on their appearance and simple physical features (some rocks are durable/not durable, permeable/impermeable, shiny/smooth/glassy). Rocks are categorised as: Sedimentary: formed from layers of oceanic sediment. Igneous: formed when molten rock solidifies and crystallises. Metamorphic: formed when sedimentary or</p>			<p>Evolution and inheritance Evidence for evolution include fossils. The fossil record can show how organisms have evolved over long time periods. Fossils form from the remains of organisms which died a long time ago.</p>

				<p>igneous rock is changed (normally by temperature or pressure). Fossils were formed millions of years ago from the preserved remains of a dead organism (plants and animals).</p>			
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Light

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>Animals, including humans Eyes are for sight, ears are for hearing, skin is for touch, nose is for smell, tongue is for taste.</p> <p>Materials Common properties of materials</p>		<p>Some objects are sources of light e.g. the sun and others reflect light e.g. the moon. You need a source of light to see. Without light it is completely dark. Light is reflected off all surfaces. Some surfaces are more reflective than others. We see objects when light from a source reflects off the object into our eyes. Materials can be grouped into transparent/translucent/opaque. Opaque materials block light. Shadows are formed when light is blocked by an opaque object. The size of shadow depends on the distance between the light and the object. Closer objects block more light and have larger shadows. Sun light is dangerous, it can burn the skin and damage the eyes. Clothing, sunscreen and sunglasses are ways to block the sun.</p>		<p>Properties of materials Materials can be grouped together based on similar properties.</p>	<p>Light travels in straight lines. Light travels out from the light source in all directions (like a dandelion seed head). To see an object, light must travel from the light source, reflect off an object and travel to the eye. Light ray diagrams show light travelling between a source, an object and the eye. Opaque and translucent objects block light and cause shadows. The shape of the shadow is the same as the shape of the object.</p>

Forces and magnets

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<p>Uses of everyday materials To change the shape of an object a force needs to be applied. This is usually a push, pull, twist or bend. Some objects need a bigger force to make them change shape.</p>	<p>A force is a push or a pull which affects the motion of an object. It can also change an objects shape by squashing, twisting etc. Friction is a force between touching objects that opposes the movement of an object. Different surfaces exert different friction. Forces can be contact (e.g. friction) or non-contact (e.g. magnetic). For example, magnets produce an invisible force (attract/repel) which can act at a distance (non-contact). Magnets have two poles, North and South. Opposite poles attract. Like poles repel. Magnetic materials (Iron, Nickel, Cobalt) are attracted to magnets (either pole). Materials can be grouped according to whether they are magnetic or not.</p>		<p>A force is a push or a pull which affects the motion of an object. It can also change an objects shape by squashing, twisting etc. Friction is a force between touching objects that opposes the movement of an object. Different surfaces exert different friction.. Forces can be contact (e.g. friction) or non-contact (e.g. magnetic). For example, magnets produce an invisible force (attract/repel) which can act at a distance (non-contact). Magnets have two poles, North and South. Opposite poles attract. Like poles repel. Magnetic materials (Iron, Nickel, Cobalt) are attracted to magnets (either pole). Materials can be grouped according to whether they are magnetic or not.</p>	

Sound

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>Animals including humans Eyes are for sight, ears are for hearing, skin is for touch,</p>			<p>Sound is produced when an object vibrates. The vibrations travel to the ear drum which then vibrates.</p>		

		nose is for smell, tongue is for taste.			<p>This is then interpreted as sound. Vibrations travel through a medium (the material the sound is travelling through). This includes solids, liquids and gases. The pitch of a sound is a measure of how fast the object is vibrating (<i>frequency</i>). High pitched noises have a high frequency. Low pitched noises have a low frequency. The volume of a sound is a measure of the size of the vibration (<i>amplitude</i>). Sounds gets fainter as the distance from the source increases because the energy becomes more spread out. The speed of sound remains constant through the same medium.</p>		
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Electricity

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					<p>Electrical appliances convert electrical energy to other forms of energy. A simple series circuit must include a cell, wires and an additional component. Bulbs, switches or a buzzers are example of components. A circuit only works if there is a complete loop because the electricity must travel round the circuit and through the components. A component will not work in a circuit when a switch is open</p>		<p>The electrical symbols for common components are: Cell, switch (open), switch (closed), bulb, buzzer. When a switch is open, other components will not function because the open switch prevents the electricity from passing round the circuit. Components in a circuit can be affected by the number and voltage of cells. More cells result in higher voltage. This will make a lamp brighter.</p>

					because the open switch prevents the electricity from travelling round the circuit and so no electricity travels through the component. Conductors, such as metals, and insulators can affect the function of components in a circuit by allowing/disrupting the flow of electricity		When more components are added to a circuit without more cells, the components do not work as well e.g. lamps are dimmer.
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Earth and Space

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>Seasonal changes The UK has four seasons: spring, summer autumn & winter. The seasons are associated with typical weather e.g. warmth in summer and cold in winter. The sun only shines on half the Earth at any time. Daytime occurs when a location faces the sun, nighttime occurs when a location faces away from the sun. Half the Earth is always day, half is always night. The length of daytime changes depending on the season: In summer the days are longer, in winter they are shorter.</p>				<p>Our solar system consists of the sun, planets and moons. These are spherical bodies made of rock (inner planets) or gas (sun and outer planets). There are also asteroids (rocks) and dwarf planets (e.g. Pluto). The sun is a medium sized star at the centre of our solar system. Because of its size, it exerts a large force due to gravity on planets. The force of gravity causes the planets, incl Earth, to orbit the sun. The planets of our solar system are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus & Neptune. Many planets have moon. The Earth has one moon which orbits the Earth due to gravity. The Earth rotates once every 24 hours. As it rotates it faces the sun for some of the time (day) and away from the sun (night). As the Earth rotates, it</p>	

						<i>appears</i> that the sun is moving across the sky.	
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Evolution and inheritance

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<p>Living things and their habitats Animals get their food from within their habitat. A habitat is an area where plant and animals live and need each other to survive. Plants and animals are suited to the habitat they live in. A micro-habitat is a very small part of a habitat e.g. a patch of soil, a crack in a rock pool or under a log.</p> <p>Animals including humans Animals reproduce and have offspring that grow into adults over time. Different animals are born and grow in different ways.</p>	<p>Rocks Fossils were formed millions of years ago from the preserved remains of a dead organism (plants and animals).</p> <p>Plants Flowers attract insects for pollination. Seeds form within a flower following pollination (eg dandelion, strawberries). Seeds of flowering plants can be dispersed by wind, animals, explosion and water.</p>	<p>Living things and their habitats If the environment of a habitat changes it can affect the plants and animals that live there, often badly. Example, climate change, deforestation, mining or farming.</p>	<p>Living things and their habitats Describe the life processes of reproduction in some plants and animals.</p>	<p>Animals are adapted to survive in their habitat e.g. camouflaged insects or thick furred arctic fox. Animals which can survive in a habitat are more likely to produce offspring. When living things reproduce they pass on characteristics to their offspring. This is known as inheritance. Offspring usually have different characteristics to their parents. This is known as variation. Some variation leads to an advantage in survival and reproduction in an animals habitat (an adaptation). These animals are more likely to produce offspring leading to a long-term change in a species. This is known as evolution. Evidence for evolution include fossils. The fossil record can show how organisms have evolved over long time periods. Fossils form from the remains of organisms which died a long time ago.</p>