

Progression in Science at Wimborne Junior School

Progression in science ensures that an awareness of knowledge, methods, processes and uses of science is instilled into every child in the school. Each year builds on from the last and the expectation of progression is that children build on from the previous year's objectives to ensure that the acquisition of knowledge and skills are secure.

By the end of year 3 the average child can ...					
Teeth & Eating	Feed, move & grow /Nutrition	Helping Plants grow well	Habitats & survival	Using materials	Forces & Magnets
T1 - understand that animals have different types of teeth T2 - recognise digestive system is made up of different parts T3 - understand some food & drink can damage teeth T4 - understand animals absorb food & use this to get energy to move (Chocolate)	F1 - understand that humans cannot make their own food F2 - know skeleton support & protect animals bodies F3 - understand that pairs of muscles work pulling on the bones to move different body parts F4 - know different animals need different foods to stay healthy (What's on the Menu?)	P1 - know that plants need healthy stems, roots & leaves P2 - understand flowers are vital part of the life cycle of a plant P3 - recognise plants take water in through the roots and this moves through the stem and leaves (Rainforests)	H1 - understand that animals and plants can be grouped by their features H2 - know that there are different types and sizes of habitats locally H3 - understand that environments can change which poses dangers to living things H4 - understand that food chains can help us to explain the feeding relationships in habitats (Rainforests)	M1 - know the importance of choosing the right material for different jobs M2 - understand some objects can be made of different materials M3 - carry out investigations involving sorting, measuring & describing fair tests M4 - testing ideas which give us evidence	FM1 - know most forces need contact between 2 surfaces FM2 - recognise magnetism as a non-contact force FM3 - identify magnetic materials FM4 - investigate the impact of different surfaces on how far things move FM5 - recognise a magnet has 2 poles

"Reach for the stars"

Sincerity, Teamwork, Achievement, Respect

By the end of year 4 the average child can ...					
Solids, liquids & gases	Rocks & soils	Keeping warm	Circuits & conductors	Sound	Light and Shadows.
<p>SL1 know the difference between solids, liquids and gases.</p> <p>SL2 understand that when solids get hot they evaporate.</p> <p>SL3 know that heating a solid causes it to melt.</p> <p>SL4 understand that changes of state and temperature helps us to understand and explain the water cycle.</p>	<p>R1 know that if you dig deep through any type of soil you will find a layer of rock.</p> <p>R2 understand that when rocks get broken up into tiny pieces they can make soils</p> <p>R3 know that different types of rocks can be used for different types of soils.</p> <p>R4 know that fossils can be made when things that have lived get trapped within rock.</p>	<p>KW1 know that something will cool down or warm up until it is the same temperature as its surroundings.</p> <p>KW2 know that good thermal insulators can be used to keep hot things hot and cool things cold.</p> <p>KW3 know that temperature is a measure of how hot or cold something is.</p> <p>KW4 know that materials such as metals are good electrical conductors and often good thermal conductors.</p>	<p>C1 investigate patterns in electricity flowing around a circuit.</p> <p>C2 know if a circuit is incomplete the device will not work.</p> <p>C3 know that metals are good conductors of electricity and most other materials are not.</p> <p>C4 understand that you need to match the components in a circuit for it to work.</p>	<p>So1 know that sounds are made when objects vibrate.</p> <p>So2 understand that when we change the vibrations we can make the sounds louder or softer.</p> <p>So3 understand that by changing the vibrations we can make change the pitch of a sound.</p> <p>So4 understand that the vibrations from a sound source travel better through some materials than others.</p>	<p>LS1 understand that we need light sources to be able to see things.</p> <p>LS2 know that some materials create different shadows as they are transparent, opaque or translucent.</p> <p>LS3 know that shadows are formed when a light source is blocked.</p> <p>LS4 understand that there are patterns in the way that shadows can change when a light source moves or the distance changes.</p>

"Reach for the stars"

Sincerity, Teamwork, Achievement, Respect

By the end of year 5 the average child can ...					
Forces & gravity	Earth & space	Changing state	Seeing things	Life cycles	Interdependence & adaptation
<p>FG1 know that more than one force can act on an object.</p> <p>FG2 understand that forces are of varying sizes.</p> <p>FG3 know that Galileo and Newton helped to develop the theory of gravitation</p> <p>FG4 understand that gravity is a force that acts from a distance.</p>	<p>ES1 know that the earth rotates on an axis every 24 hours as it orbits the sun.</p> <p>ES2 know that the moon orbits the earth every 28 days.</p> <p>ES3 understand that the earth, moon and sun are all approximately spheres.</p> <p>ES4 know that the earth takes about 365 days to orbit the sun.</p>	<p>CS1 know that melting, freezing, condensing and evaporation are all changes of state which can be reversed.</p> <p>CS2 understand that we can measure how gases can produce forces and have weights</p> <p>CS3 know that powers, sponges and soils are all solids but they have gas trapped in the gaps.</p> <p>CS4 know that gases are different from solids and liquids as they can't keep their shape, volume and can flow in any direction.</p>	<p>ST1 know that when a beam of light changes direction it is reflected.</p> <p>ST2 know that shiny surfaces reflect light better than dull ones.</p> <p>ST3 understand that light travels in a straight line so shadows are the same shape as the object.</p> <p>ST4 know we see objects when rays of light travel in straight lines from a light source to our eyes.</p>	<p>LC1 understand that as humans we each go through several stages during our lifetime.</p> <p>LC2 know that for a long and healthy life we need a balanced diet and regular exercise.</p> <p>LC3 understand that different animals survive by having different life cycle strategies.</p> <p>LC4 know that improvements in science, health and hygiene has mean that life expectancy is longer today than it has ever been.</p>	<p>IA1 know that green plants survive by making their own food.</p> <p>IA2 understand that animals and plants in any habitat are independent.</p> <p>IA3 know that different plants grow in different soils.</p> <p>IA4 understand that food chains and food webs help us to understand the feeding relationships in many different types of habitats.</p>

"Reach for the stars"

Sincerity, Teamwork, Achievement, Respect

By the end of year 6 the average child can ...					
Forces and movement.	Circuits	Dissolving	Reversible & irreversible changes	Evolution	Fuel for life.
<p>FM1 know that drag forces resist movement.</p> <p>FM2 investigate drag forces.</p> <p>FM3 know that drag forces will slow an object down unless it is driven.</p> <p>FM4 know that forces have more effect when they are transferred through simple machines.</p>	<p>C1 understand that using the wrong components may cause damage.</p> <p>C2 know that circuits can be drawn as circuit diagrams.</p> <p>C3 investigate making changes to the wire and the effect on the brightness of the bulb or loudness of the buzzer.</p> <p>C4 know that if you are careful you can speed up motors, make buzzers louder or bulbs brighter.</p>	<p>D1 know that some solids can dissolve in water to form solutions.</p> <p>D2 understand that the more solid you dissolve, the more concentrated the solution.</p> <p>D3 investigate ways of helping a solid dissolve more quickly in a liquid.</p> <p>D4 test how much liquid you need to dissolve different amounts of solids.</p>	<p>Ch1 know that when materials are mixed sometimes they change because of dissolving. Others can change due to reactions.</p> <p>CH2 know that heating and cooling some mixtures can cause reactions.</p> <p>CH3 know that if the change is reversible than filtering and / or evaporation can get the original materials back from the mixture.</p> <p>CH4 understand that burning is a irreversible change that produces heat and new materials. Because of this we need to recognise hazards at home.</p>	<p>E1 know that animals and plants change over time. Fossils give evidence about the type of living things that lived on earth millions of years ago.</p> <p>E2 understand that animals and plants are adapted to suit their environment in different ways.</p> <p>E3 know that animals produce offspring of the same kind, but they vary and are not identical to their parents.</p> <p>E4 understand that over many generations the bodies of plants and animals have gradually changed to suit their environment.</p>	<p>F1 know that the heart is made up of muscle. When it contracts it pumps blood around our arteries and veins.</p> <p>F2 understand that during exercise our muscles work harder. Our pulse rate increases so more blood gets to the muscles.</p> <p>F3 know that food and oxygen are taken to the muscles so they can use them to get the energy that they need .Waste products are taken away.</p> <p>F4 know that diet, exercise, drugs and lifestyle can all have an impact on how well your body works.</p>

"Reach for the stars"

Sincerity, Teamwork, Achievement, Respect