



Northwood Park Primary School

Science **Knowledge** and **Skills** Progression -Spring

By the end of EYFS	By the end of Y1	By end of Y2	By end of Y3	BY end of Y4	By end of Y5	By end of Y6
<u>Spring 1 – Living Things and their Habitats</u> *I know about the natural materials I explore, using their senses. *I know about the materials I am using when making pictures. *I know the names of a range of materials, including natural materials, when making models and identify a	<u>Spring 1 – Animals including Humans</u> *I know that humans have key parts in common, but these vary from person to person e.g. head, body, ears, eyes, mouth, teeth. *I know that humans (and other animals) find out about the world using their senses.	<u>Spring 1 - Living things and their habitats</u> *I know that all objects are either living, dead or have never been alive. Living things are plants (including seeds) and animals. Dead things include dead animals and plants and parts of plants and animals that are no longer attached e.g., leaves and twigs, shells, fur,	<u>Spring 1 - Animals including Humans</u> *I know that humans have skeletons made from different parts e.g., skull, ribs, spine *I know the functions of the human skeleton - movement, protection of organs and support. *I know that muscles move bones by working in pairs - when	<u>Spring 1 Animals including Humans</u> * I can describe (using diagrams) the simple functions of the parts of the digestive system *I know that food enters the body through the mouth. *I know that digestion starts in the mouth when the teeth start to break the food down. - The food is swallowed and passes down the	<u>Spring 1 Properties and Changes in Materials</u> *I know that materials such as glass, rubber and plastic can be classified based on their properties e.g., their transparency, response to magnets. *I know that a solution is formed when a solid (solute) can dissolve in a liquid (solvent).	<u>Spring 1 Animals including Humans</u> *I know that/label a diagram showing the three parts of the human circulatory system - heart, blood vessels and blood. * I know that the heart is a muscle that pumps blood around your body. * I know that blood transports nutrients, oxygen, and



key property that was required. *I can reuse materials and describe what can be recycled to care for the natural world. <u>Comparative testing</u> *I can compare how quickly ice cubes melt in different areas of the playground? <u>Observing over time</u> *I can observe how blocks of	*I know that humans have five senses – sight, touch, taste, hearing and smelling. *I know that these senses are linked to parts of the body. E.g. I can feel it is cold on my skin, I can taste the flavour of my crisps, I can hear the leaves rustling on the ground, I can smell the flowers/plants, I can see the leaves on the tree *I can use comparative language to recognise differences in	hair and feathers (This is a simplification, but appropriate for Year 2 children.) *I know that objects made of rock, metal and plastic have never been alive (again ignoring that plastics are made of fossil fuels). *I know that animals and plants live in a habitat to which they are suited, which means that animals have suitable features that help them move and find food and plants have suitable features	one muscle contracts then the other relaxes. *I know that animals have joints to help them move. *I can identify a similarity and difference between a human and other animal skeleton e.g. both humans and dogs have a skull and a spine. Humans have a spine, but worms don't. * I can make careful observations of the human skeleton. * I can use secondary sources to	oesophagus to the stomach. *I know in the stomach food is broken down further by being churned around and other chemicals are added. *I know that in the small intestine nutrients are removed from the food. *I know that the rest of the food passes into the large intestine where water is removed for use. *I know that what is left is then stored in the rectum until it leaves the body through the anus when you go to the toilet.	*I know that different factors e.g. temperature of the water (solvent) will impact the speed at which the solute e.g. sugar/salt dissolves. *I know that some materials are insoluble and form sediment. e.g. sand *I know that mixtures can be separated by filtering, sieving and evaporation depending on the type of mixture e.g. pasta can be sieved, sand would need to be filtered but salt would	water from the heart to muscles and around the body. * I know that carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. * I know that diet, exercise, drugs and lifestyle have an impact on the way our bodies function. * I know that a healthy lifestyle and regular exercise strengthens the
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ice change over time.	human features and answer related questions using gathered data e.g., comparing size of feet with a partner and linking this to height. *To record their observations to help identify what senses they are using. *I can make first-hand close observations of parts of the body e.g., hands, eyes. * I can make first-hand close observations and compare parts of the face e.g., nose, eyes	that help them to grow well. *I know that the habitat provides the basic needs of the animals and plants – shelter, food and water. *I know that the plants and animals in a habitat depend on each other for food and shelter etc. The way that animals obtain their food from plants and other animals can be shown in a food chain. *I can sort objects by given criteria and	research the functions of the skeleton. *I can gather, record, (accurate measurements using SI) *I can present data in a variety of ways to help in answering questions.	I know that humans have four types of teeth: incisors for cutting; canines for tearing; and molars and premolars for grinding (chewing). *I can use diagrams to describe the journey of food through the body. *I can make careful observations of the similarities and differences between types of teeth. *I can use knowledge about tooth decay to ask relevant questions and make a prediction. *I can use results to draw simple	require evaporation. To understand how scientists utilise properties of materials. To be able to decide on appropriate properties as a sorting criteria, and classify the materials correctly using their own method of recording e.g. Carroll diagram, Venn diagram. *To draw and label diagrams to illustrate dissolving and solution. To plan a scientific enquiries to answer questions,	heart and lungs whereas some drugs can damage the heart. * I know that different types of exercise will impact the pulse rate differently. E.g. Running is a vigorous exercise will increase pulse rate rapidly. *I can use information to identify the main components of the circulatory system. *I can use information acquired from secondary sources to write a scientific report on how
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	to make detailed drawings.	records my findings in a simple prepared table. *I can sort objects by given criteria and records my findings in a simple prepared table. *I can observe animals and plants carefully, drawing and labelling diagrams. *I can name the animals I find and record the number found using tally marks.		conclusions, suggest improvements and raise further questions e.g. Is orange juice a 'healthy' drink? I wonder whether it contain a lot of sugar.	including recognising and controlling variables where necessary. *To record their results and to interpret these, including using the results to make further predictions. *To be able to use scientific equipment accurately to filter the mixture (the sand from the water) *To set up a comparative test, appropriately controlling variables i.e. (the amount of the solution and	the human circulatory system works. *I can use labelled diagrams to support their understanding of the impact of exercise, diet, drugs on the body. *I can take measurements, with increasing accuracy and precision, taking repeat readings when appropriate. *I can report and presenting findings from enquiries, including conclusions,
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					the place the containers were left).	causal relationships.
<u>Spring 2- Seasonal Change</u> *I know there are different plants e.g. trees, bushes, flowers, vegetables, herbs. *I know features of some of the plants I find. • I can name the plants I find. • I can find the same plant in a different place. • I can observe animals and return them to where they found them.	<u>Spring 2- Seasonal Change</u> *I know that in the UK, the day length is longest at mid-summer. *I know that day length becomes shorter each day until mid-winter before getting longer again. *I know that the weather changes with the seasons. *I know that in the UK, it is usually colder	<u>Spring 2 - Animals including Humans pt 1</u> *I know that all animals, including humans, have the basic needs of feeding, drinking and breathing that must be satisfied in order to survive. *I know that in order for humans to grow into healthy adults, they need the right amounts and	<u>Spring 2- Materials: Rocks</u> *I know that rock is a naturally occurring material. *I can give examples of different types of rock e.g. sandstone, limestone, slate etc. which have different properties: -Rocks can be hard or soft. -They have different sizes of grain or crystal. -They may absorb water.	<u>Spring 2 Animals including Habitats</u> * I know living things can be grouped (classified) in different ways according to their features e.g. vertebrates/ invertebrates, mammals, fish I know that classification keys can be used to identify and name living things e.g. is it a vertebrate? Does it lay eggs? Does it have legs?	<u>Spring 2 Living Things and their habitats</u> *I know the stages of the life cycle of flowering plant i.e. germination, pollination, fertilisation, seed dispersal. *I know the difference between sexual and asexual reproduction of plants using examples e.g. strawberry	<u>Spring 2 Year 6 Evolution and Inheritance</u> * I know that plants and animals have characteristics that make them suited (adapted) to their environment e.g., adaptations of a cactus *I know that if the environment changes rapidly, some variations of a species may not suit the new



• I can describe animals that I find. *I can identify patterns in the animals found in different areas of the school grounds. *I can identify patterns in the plants found in different areas of the school grounds.	and rainier in winter, and hotter and drier in the summer. I know that the change in weather causes many other changes e.g. numbers of minibeasts found outside; seed and plant growth; leaves on trees; and type of clothes worn by people. * I can compare two seasons by looking at the number of leaves on plants and the animals in the environment. * I can record data by sticking the symbol onto	types of food and exercise. *I can name foods from each section of the Eatwell Guide (fruit and vegetables, potatoes bread, rice and starchy carbohydrates, dairy and alternatives, beans, pulses, fish, eggs, meat and other proteins. *I know that good hygiene is important in preventing infections and illnesses e.g. I know that washing your hands helps to remove germs so washing our	-Rocks can be different shapes and sizes (stones, pebbles, boulders). *I know that soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). *I know that the property of the soil can be affected by the type of rock, size of rock pieces and the amount of organic matter. *I know that some rocks contain fossils.	*I know that living things live in a habitat which provides an environment to which they are suited (Year 2 learning). *I know that these environments may change: -naturally e.g. through flooding, fire, earthquakes etc. - humans cause the environment to change. In a good way (such as setting up nature reserves). In	plants can be propagated asexually using runners. Plants can reproduce sexually using flowers. *I know the three main stages of a bird's lifecycle – egg, fledgling, and adult bird. *I know that some animals, including humans, will have offspring that are born live, such as babies or kittens, whereas other animals lay eggs which	environment and will die e.g., differences between a mammoth and an elephant. *I know that all living things have offspring of the same kind, as features in the offspring are inherited from the parents. *I know that due to sexual reproduction, the offspring are not identical to their parents and vary from each other.
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	the correct place on the bar chart. * I can use secondary sources to describe some features of the weather. *I can observe closely, using simple equipment.	hands will stop the germs from spreading or getting inside our bodies and making us feel ill. *I can sort objects by given criteria and record my findings in a simple prepared table. *I can classify food in a range of ways, including using the Eatwell guide. *I can carry out a simple test and record evidence in a prepared table.	*I know how fossils are formed (millions of years ago when plants and animals died, they fell to the seabed. They became covered and squashed by other material. Over time the dissolving animal and plant matter was replaced by minerals from the water.) *I can make careful observations and record these using labelled diagrams. *I can classify rocks in a range of different ways,	a bad way (i.e. negative human impact, such as littering). *I know that living things can be classified as producers, predators and prey according to their place in the food chain. (A predator is an animal which kills and eats another animal. The other animal is its prey. Producers are often green plants.) * I can observe plants and animals in different habitats and use recordings to compare and contrast the living things observed.	hatch to young then grow into adults. I know that some young undergo a further change before becoming adults e.g. caterpillars to butterflies. This is called a metamorphosis. *I can draw and label appropriate scientific diagrams of a plant lifecycle. *I can use secondary resources to carry out research. Compare and contrast the life cycles of ferns	*I know that if the environment changes, animals, and plants with variations that are best suited survive in greater numbers to reproduce and pass their characteristics on to their young. E.g. Peppered moths * I know the process of evolution and I can give examples of how an animal or plant has evolved over time e.g.,
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		*I can use my observations to suggest answers to my questions.	using appropriate vocabulary. *I can make careful observations of the rocks * I can conduct simple tests with my group and classify rocks by their properties. * I can make accurate observations and record data from my tests using detailed notes.	*I can compare, contrast and sort living things. *I can ask a range of questions to help identify the animal. *I can use secondary sources to find out about human impact, on environments and can support my findings using evidence.	and conifers and present findings. *I can observe plants that reproduce asexually e.g. strawberries, spider plant, potatoes. *I can make observations of the eggs, the chicks and include subject knowledge that they have learnt. To carry out research using secondary sources and compare findings using scientific diagrams.	changes in finches beaks I know that fossils give us evidence of what lived on the Earth millions of years ago and provide evidence to support the theory of evolution (e.g. work of Charles Darwin/finches). *I can report and present findings from enquiries. *I can compare a woolly mammoth to a modern elephant and recognise that this change has happened over a
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						long period of time. *I can use evidence from secondary sources to support their ideas. *I can make a prediction based on the shape and size of the food and beaks. * I can compare features of offspring describing similarities and differences.
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