

Working Scientifically LKS2							
Objective	General/asking questions	Observing changes over time	Comparative and fair tests	Identifying and classifying	Looking for naturally occurring patterns and relationships	Recording and reporting findings	Researching and using secondary sources
	Be able to raise own questions about the world around them.	Make observations about everyday phenomena.	Suggest a practical way to find something out.	Use simple observable features to compare objects or living things.	Recognise links between observations and answers to questions.	Use notes, simple tables and standard units.	Use information from secondary sources to help answer a question.
	Be able to suggest one way of finding an answer to a question.	Decide what is important or relevant to observe.	Make decisions about which practical method is best to find something out.	Be able to group objects and living things in different ways.	Notice patterns and relationships.	Help to make decisions about how to record and analyse data.	Recognise when and how secondary sources might help answer questions that cannot be answered through practical investigations.
	Understand that some questions may not be relevant to enquiries.	Make increasingly careful observations.	Be able to identify two variables in an investigation, e.g. water and light when investigating plant growth.	Talk about criteria for grouping, sorting and classifying.	Look for naturally occurring patterns and relationships and decide what data to collect to identify them.	Make independent choices about appropriate ways to record data.	
	Be able to suggest more than one way of finding an answer to a question, e.g. by research, by testing.	Make systematic observations.	Be able to set up a comparative test.	Use observable features of objects to identify them.	Be able to collect data from their own observations and measurements.	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	
	Suggest 'testable questions' that can be answered in classroom investigations.	Decide for how long to make observations.	Recognise when a simple fair test is necessary to answer a scientific question.	Use simple keys.	With help, look for changes, patterns, similarities and differences in their data.	Use relevant scientific language to discuss their ideas.	
	Recognise alternative methods of scientific enquiry used to find answers to questions.	Use a range of equipment correctly to observe and measure.	Be able to identify variables to measure and variables to observe.	Begin to classify and identify by linking observable features to already known objects or things.	Use patterns in their data to draw simple conclusions and answer questions.	Communicate findings in ways that are appropriate to different audiences.	



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Objective	Make own decisions about which method of enquiry is best to answer a question.	Be able to select appropriate equipment to observe and measure.	With others, help to set up a fair test.	Begin to classify by behavioural features, e.g. conducts electricity, is magnetic.	Use evidence to answer questions and make predictions.	Identify relevant evidence used to draw conclusions.	
	Asking relevant questions and using different types of scientific enquiries to answer them.	Use new equipment such as data loggers, appropriately.	Start to recognise when a test is not fair and suggest improvements.	Explain which observable or behavioural features have led them to classify in a particular way.	Say whether what happened was what they expected.	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	
	Be able to refine a question.	Accurately use standard measures.	Setting up simple practical enquiries, comparative and fair tests.	Identifying differences, similarities or changes related to simple scientific ideas or processes.	With support, identify new questions arising from the data.	Using straightforward scientific evidence to answer questions or to support their findings.	
	Draw simple conclusions and talk about what they have found out using some scientific language.	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Be able to develop features of a test to give a better outcome.	Be able, independently, to use simple databases or keys to identify or classify living things, objects or events.	Make predictions for new values within or beyond the data they have collected.	Use scientific language and facts to describe processes and what they have observed.	
	Draw simple conclusions and write about what they have found out using some scientific language.	Use an increasing range of standard measures accurately.			Find ways of improving what they have already done.	Explain findings reported and recorded using more complex scientific language.	
	Use relevant scientific language to discuss their ideas.	Explain why particular equipment chosen is appropriate to the task.			Link results to their own experiences.		



	General/asking questions	Observing changes over time	Comparative and fair tests	Identifying and classifying	Looking for naturally occurring patterns and relationships	Recording and reporting findings	Researching and using secondary sources
Objective	Use relevant scientific language to communicate their findings. <input type="checkbox"/>				Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. <input type="checkbox"/>		
	Communicate their ideas in ways that are appropriate for different audiences. <input type="checkbox"/>				Recognise when a result seems unusual when compared with other values. <input type="checkbox"/>		
	Use a variety of written communication methods, e.g. guides, keys, drawings and other pictorial representations which are suggested to them. <input type="checkbox"/>				Identify when repeated results are necessary. <input type="checkbox"/>		
	Choose their own way of communicating ideas to different audiences. <input type="checkbox"/>						
	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. <input type="checkbox"/>						



Knowledge Year 3					
Objective	Biology		Chemistry	Physics	
	Plants	Animals, including humans	Rocks	Light	Forces and magnets
	Be able to recognise some living things as plants. Y3 POP L1	Sort different types of food into groups. Y3 MF L1	Know that there are different types of rock. Y3 RAS L1	Experience darkness and light. Y3 L L1	Understand that a force is needed to make objects move. Y3 MAF L1
Recognise that although they may look different, plants have some features in common, e.g. roots, stem, leaves. Y3 POP L1, L2	Know why we need different types of food to stay healthy. Y3 MF L1	Understand that different rocks have different observable features, e.g. colour. Y3 RAS L1	Recognise that they need light in order to see things and that dark is the absence of light. Y3 L L1	Describe how the amount of force applied changes how objects move. Y3 MAF L1	
Be able to recognise and name major plant parts. Y3 POP L1	Understand that some foodstuffs can be harmful to some animals. Y3 MF L2	Understand that different rocks have different physical properties. Y3 RAS L2	Know that light comes from a source. Y3 L L1	Describe how a rolling object moves on different surfaces. Y3 MAF L2	
Know that not all plants have flowers. Y3 POP L1	Explain why undereating and overeating can be harmful. Y3 MF L3	Be able to describe some properties of rocks, e.g. hardness. Y3 RAS L2	Recognise that shiny objects can reflect light. Y3 L L1	Compare how objects slide on different surfaces. Y3 MAF L2	
Know that each part of a plant has a different job to do (function). Y3 POP L2, L3, L4	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. Y3 MAF L1, L2, L3, L4, L6	Be able to compare and contrast the properties of different rocks. Y3 RAS L2	Distinguish between light sources and light reflectors. Y3 L L1	Compare how things move on different surfaces. Y3 MAF L1, L2, L6	
Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Y3 POP L1, L2, L3, L6	Name some common bones. Y3 MF L4	Identify different rocks using research or by comparing to samples. Y3 RAS L2	Notice that light is reflected from surfaces. Y3 L L1	Know that a magnetic force can move some objects without making direct contact. Y3 MAF L3, L5, L6	



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Objective	Understand that plants need water to live. Y3 POP L2; Y3 WPN L1, L2	Know bones are strong and rigid. Y3 MF L4	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Y3 RAS L1, L2	Know that the Sun is a powerful source of light. Y3 L L1	Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Y3 MAF L3, L5, L6
	Be able to identify the roots of a plant. Y3 POP L1, L2	Describe how muscles and tendons contract and relax to help with movement. Y3 MF L4	Know that rocks now cover the Earth but they haven't always been there. Y3 RAS L3	Understand that some powerful sources of light, such as the Sun, can cause damage to our eyes. Y3 L L1, L2	Recall and use the terms 'attract' and 'repel' accurately. Y3 MAF L3, L4
	Be able to describe the functions of the roots of plants. Y3 POP L2	Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Y3 MAF L1, L2, L4, L6	Know that different rocks were formed in different ways. Y3 RAS L3	Know that they should not look directly at the Sun, even when wearing dark glasses. Y3 L L4	Identify materials that are magnetic and those which are non-magnetic. Y3 MAF L4, L6
	Describe how water moves from the soil into a plant's roots and up through the stem. Y3 POP L2		Be able to describe how sedimentary rock is formed. Y3 RAS L3	Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Y3 L L4	Observe how magnets attract or repel each other and attract some materials and not others. Y3 MAF L4
	Investigate the way in which water is transported within plants. Y3 POP L2, L3		Know that a fossil is the remains of a once living thing that has long since died and been preserved and changed in sedimentary rock as the rock formed. Y3 RAS L3, L4	Know that some materials block light. Y3 L L3	Group materials that are magnetic and those which are non-magnetic. Y3 MAF L4
	Be able to name basic plant needs. Y3 WPN L1, L6		Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Y3 RAS L3, L4	Understand that when light from a source is blocked a shadow can form. Y3 L L2	Know that not all metals are magnetic. Y3 MAF L4
	Know that without air, light, water and nutrients a plant will not thrive. Y3 POP L2, L3; Y3 WPN L1, L6		Know that over time rocks can be broken down into smaller pieces by processes such as weathering. Y3 RAS L6	Know that shadows are similar in shape to the objects forming them. Y3 L L4	Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Y3 MAF L4



	Plants	Animals, including humans	Rocks	Light	Forces and magnets
Objective	Recognise that plants need the correct amount of water to grow well, e.g. that plants will not grow well if they have too much or too little water. Y3 WPN L2		Understand that soil contains small parts of rocks. Y3 RAS L5, L6	Know that shadows can be formed when opaque objects block light. Y3 L L4	Recall that the poles of a magnet are described as North and South. Y3 MAF L3, L4
	Know that plants can outgrow their containers and become root bound. Y3 WPN L3		Understand that soil contains rotting organic matter. Y3 RAS L5, L6	Be able to sort materials into transparent, translucent and opaque. Y3 L L3	Describe magnets as having two poles. Y3 MAF L3
	Recognise that some soils are better at supporting plant growth than others. Y3 WPN L4		Recognise that there are different types of soil. Y3 RAS L5	Recognise that shadows are formed when the light from a light source is blocked by a solid object. Y3 L L2, L3, L4	Describe how the opposite poles on a magnet are attracted to each other and two like poles repel each other. Y3 MAF L3, L4
	Understand that soil provides the nutrients to help plants grow. Y3 WPN L4		Know that different soils can have different characteristics, e.g. that they can be different colours and textures. Y3 RAS L5	Make and record observations and measurements of shadows. Y3 L L5	Predict whether two magnets will attract or repel each other, depending on which poles are facing. Y3 MAF L3
	Recognise that fertilizers can provide additional nutrients to help plants grow. Y3 WPN L5, L6		Know that the type of soil depends on the balance of its constituent parts. Y3 RAS L5, L6	Find patterns in the way that the size of shadows change. Y3 L L5, L6	
	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Y3 WPN L1, L2, L3, L4, L5, L6		Recognise that soils are made from rocks and organic matter. Y3 RAS L5, L6		
	Understand that many plants grow from seeds. Y3 POP L5				



Child's name: _____

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Objective	Know that flowers are the parts of the plant where reproduction (new seed production) happens. Y3 POP L4				
	Know that seeds cannot form without a flower being pollinated. Y3 POP L4				
	Know that after pollination the plant produces fruit containing seeds. Y3 POP L4, L5				
	Be able to describe some forms of seed dispersal. Y3 POP L5				
	Be able to sequence the life cycle of a flowering plant. Y3 POP L4, L5				
	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Y3 POP L4, L5				

