MPPS – Working Scientifically Provision Map

Year group	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Pets – exploring different materials (fur, feathers, hair, gills) My body – how do we make our heart beat faster? Emergency services – how do fire fighters put out a fire? Healthy eating – where do seeds come from?	How does exercise affect the body? Graph to show eye colour.	Which material would be best to build a house with? To make predictions and give basic scientific reasons for these. Recording data and ensuring a fair test. Explain from their observations how materials change when a force is exerted on them by squashing, bending, twisting and stretching.	Observing and grouping rocks based on their properties and appearances. Making edible models of sedimentary, metamorphic and igneous rocks. Setting, testing and predicting how permeable rocks are. Making fossil models. Soil layers -edible model. Experiments with different types of soils to see the layers.	Model digestive system Tooth Decay invest.	Bottle rockets – air resistance Parachutes – gravity/ air resistance Boats – water resistance	Shadow Experiment How to make a periscope Kirkby College Make a comet Make a rocket
Autumn 2	Winter – melting ice Hibernation – making warm dens/ nests (choosing materials) Arctic animals – how do animals keep warm?	Use simple equipment to measure elements of weather. Weather, cloud experiment. Investigate seasonal changes.	To be able to make observations. How are germs spread? (Paint on hand then touching hands with others). To be able to ask appropriate questions to find an answer to. AT1: Which type of exercise raises your heart rate the most? To be draw simple conclusions to scientific questions To measure using standard/ non standard units (cm/ cubes). AT1: The oldest child in class will always have the biggest feet. Do you agree? Investigate. To classify healthy and unhealthy foods. To record data using tally charts and block graphs.	Testing different magnets on different objects and surfaces. Testing forces.	Melting temperatures Speeding up evaporation	Diorama	Does the length of the wire affect the brightness of the bulb? Does the length of the wire affect the volume of the buzzer?

Spring 1	Space – glow in the dark stars in the dark den Corn flour as dusty moon Transport – balloon powered car/ pull back cars/ wind up toys	Testing materials – Waterproof experiment.	To identify a microhabitat e using first hand observation and exploration. To log creatures found in a microhabitat, and construct / present data charts from this information. To generate a scientific question To categorise living things into different groups according to criteria 2	Creating a reflective school bag. Testing different materials – reflective, opaque, translucent , transparent	All electricity lessons include practical enquiry to answer questions, record findings, etc.	Filtering, evaporation, mixing a solution	How does a dinosaur become a fossil?
Spring 2	Spring - shaving foam rain clouds. Superheroes – melting ice/ sticky jelly Jungle/ rainforest – leaf rubbing	Seasonal changes srping to summer.	To observe and describe how seeds and bulbs grow into mature plants. Children can begin to recognise ways in which they might answer scientific questions. They can carry out simple practical tests, using simple equipment.	Changing variables when it comes growing a flower.		Separating/ filtering muddy water to clear water	What conditions help mould grow well?
Summer 1	Weather and seasons (rainbows) – exploring coloured cellophane. Using colour wands Minibeasts – using magnify glasses Growing a flower/ parts of a flower – planting and investigating changes	Explore how plants take in water/structure of plants.		Measuring height of plants – observations.	How does distance affect sound? Soundproofing studio		
Summer 2	Under the sea – jelly jellyfish Ink pads to explore octopus Sun safety – suncream on babies and dolls Boats and submarines – water play and making boats Floating and sinking – water play	Classify animals into groups.	Record and observe chicks environment, appearance and growth. Complete tables of results to show observations. Observe using simple equipment (thermometers). Ask questions about eggs and chicks to gain answers in different ways.		Invertebrate survey		Make a model to show how lungs work.

	Year 1 key skills	Year 2 key skills	Year 3 key skills	Year 4 key skills	Year 5 key skills	Year 6 key skills
Asking Questions	To recognise the difference between a statement and a question I can begin to shape questions using different question stems	To suggest my own question, with support, that I can investigate.	Ask questions independently. Suggest my own ideas to explore through scientific enquiry.	Ask questions and offer ideas for a range of scientific enquiry. Improve the focus of my questions to clarify its scientific purpose, with support.	Independently ask scientific questions Independently ask questions which I can find out through scientific enquiry.	Know that some scientific questions do not yet have definitive answers
Planning Detail	Decide which questions I can answer practically and which cannot be. Suggest the next step. Suggest a sequence of steps in a plan.	Suggest my own question, with support, that I can investigate.	Know what a fair test is Recognise when to answer a question with a fair test Recognise when other methods (than a fair test) might be used. Know what needs to be kept the same in a fair test and what needs to change Know what to measure in a fair test.	Know when to answer questions using a fair test and when better evidence could be used such as surveys, diaries, logs or research Know what a variable is Set up a fair test, choosing and controlling the variables. Know what to change and what to measure in a fair test.	Identify the most appropriate enquiry method to use to generate the evidence needed to solve problems and scientific questions. Plan familiar enquiry types in appropriate detail	Select methods to use to solve problems or answer questions, including a full range of enquiry methods, which are planned in detail.
Using equipment	Begin to choose appropriate equipment to use to make observations. Follow simple instructions to use equipment correctly and safely.	Choose appropriate equipment from a selection provided. Follow instructions for using equipment with limited support Follow instructions for using equipment without adult support	Select from a wider range of equipment to use in an investigation Use basic equipment correctly Use basic equipment safely with increasing accuracy.	Select from a wider range of equipment in my investigation such as thermometers, data logger Use equipment safely and accurately Use equipment independently before asking for any help	Select the most appropriate equipment to use in a range of contexts and enquires. Take measurements using a range of scientific equipment with increasing accuracy.	Explain why particular pieces of equipment will provide better quality evidence. Explain why particular sources of information will provide better quality evidence.
Making observations	Make relevant observations in familiar contexts Take some non-standard measurements with support.	Make relevant observations. Take non-standard measurements. Use basic equipment for measuring length or mass in standard units.	Make relevant observation throughout an investigation Use standard measuring equipment for quantities such as volume and temperature.	Choose to make a series of observations to help my investigation. Take accurate readings on measuring equipment with support. Know that I need to repeat readings to make sure I am accurate.	Choose to make a series of observations or measurements that will add up to the quality of the evidence collected whilst investigating	Repeat sets of observations or measurements where appropriate, selecting suitable ranges and intervals to give sufficient depth of evidence.
Presenting evidence	Use drawings and labels to show my evidence. Use simple prepared charts and tables with support Use ICT to show my results, with support	Use drawings and labels to present evidence. Use prepared tables and block graphs to present what I have found out. Use ICT to present what I have found out.	Gather data in a variety of ways Record data in a variety of ways, sometimes creating my own tables and charts Classify data in a variety of ways to help answer questions. Use ICT to present data where appropriate. Interpret a line graph with support	Choose the best way to present the data I have collected. Record my findings using drawings and labelled diagrams Record my findings using bar graphs, tables and ICT where appropriate. Use simple scientific language effectively to tell my outcomes.	Record data of increasing complexity using scientific diagrams. Use classification keys Use tables, Bar graphs, Line graphs models	Decide in the most appropriate formats to present sets of data (eg line graphs for continuous variables) Communicate findings in written forms across a range of genre Use multimedia and other forms of presentation
Drawing conclusions	Describe simple observations of an object or objects. Comment on an event Make simple comparisons	Describe what has happened. Compare things.	Report on my findings orally to give results and simple conclusions Report on my findings using written methods to give results and conclusions	Make comparative statements. Identify similarities and differences in simple scientific ideas	Make comparative statements describing relationships between factors being investigated.	Use scientific evidence to answer questions or support findings

		Sequence results from smallest to largest for example, with support.	Make general statements about simple patterns I notice in a set of results	Identify changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support my findings.	Use simple models to help describe scientific ideas.	Draw valid conclusions that use more than one piece of supporting evidence.
Explaining evidence	Recognise the link between cause and effect in simple situations, with support.	Recognise the link between cause and effect in simple situations Can begin to notice simple patterns in results	Give an explanation for simple patterns that I see Relate results to everyday experiences and give reasons and explanations.	Relate explanations of patterns in results to scientific knowledge Explain reasons why things have happened.	Relate explanations of evidence gathered to scientific knowledge and understanding. Make generalisations about what my evidence seems to indicate.	Provide explanations for the differences in repeated observations or measurements. Identify reasons for any anomalies noticed.
Evaluating outcomes	Talk about some of the things I had difficulties with, with support.	Notice some difficulties that I had with my investigation Suggest how I might have avoided these difficulties, with support.	Suggest how my enquiry might be improved Recognise some of the limits and significance of my evidence, with support.	Suggest how much to trust results. Identify the limitations of evidence. Suggest new questions and predictions for setting up further tests.	Recognise some of the limitations of my evidence Suggest why my evidence should not be trusted. Use test results to set up further comparative tests.	Evaluate the effectiveness of my working methods. Make practical suggestions for improving methods Identify scientific evidence that has been used to support or refute ideas or arguments.

EYFS		
Three and Four-Year-Olds	Communication and Language	• Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
	Personal, Social and Emotional Development	• Make healthy choices about food, drink, activity and toothbrushing.
	Understanding the World	• Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family's history. • Explore how things work. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice.

Reception	Communication and Language		• Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts.
	Personal, Social and Emotional Development		• Know and talk about the different factors that support their overall health and wellbeing: • regular physical activity • healthy eating • toothbrushing • sensible amounts of 'screen time' • having a good sleep routine • being a safe pedestrian
	Understanding the World		• Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them.
ELG	Communication and Language	Listening, Attention and Understanding	• Make comments about what they have heard and ask questions to clarify their understanding.
	Personal, Social and Emotional Development	Managing Self	• Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.
	Understanding the World	The Natural World	• Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.