Asking questions		
Children will be able to:		
Key Stage 1	**Lower Key Stage 2**	**Upper Key Stage 2**
• use a range of given question stems, such as: what; what if; why; when; who; and how; to ask questions about the objects, living things and processes they are exploring • construct a question based on a scenario or story the teacher has presented.	• ask scientific enquiry questions with support • following a scientific enquiry, ask questions stimulated by what they have just found out.	• independently ask scientific enquiry questions.

Planning an enquiry		
Children will be able to:		
Key Stage 1	**Lower Key Stage 2**	**Upper Key Stage 2**
	• identify the data required to answer the scientific enquiry question • select appropriate practical equipment to gather the data • identify how to gather the data required to answer the scientific enquiry question • suggest the type of scientific enquiry they are using.	• describe the method they would use to gather data to answer a scientific enquiry question.

© PLAN 2025

Making predictions		
Children will be able to:		
Key Stage 1	**Lower Key Stage 2**	**Upper Key Stage 2**
	• use the data they have already gathered to suggest values for the next reading.	• use the data they have already gathered to suggest further values • use the scientific understanding gained from scientific enquiry to make predictions they can investigate using further comparative and fair tests.

Gathering data		
Children will be able to:		
Key Stage 1	**Lower Key Stage 2**	**Upper Key Stage 2**
• talk about their observations of objects, materials and living things • talk about their observations when comparing objects, materials and living things • talk about their observations when describing changes • when using a magnifying glass, adjust the position of the magnifying glass in order to see the enlarged image clearly • when using a digital microscope, relate features on the enlarged view to the object • make direct comparisons of length and height • use bricks, lolly sticks etc. or paper strips to take non-standard measurements of length • use simple measuring equipment, such as teaspoons, pipettes, rulers, metre sticks etc.	• make systematic and careful observations • measure time in standard units using stopwatches or timers • measure length in standard units using rulers, meter sticks, tape measures or trundle wheels • measure temperature in standard units using thermometers • measure capacity in standard units using syringes, beakers or measuring cylinders • use sensors to take measurements (e.g. light, sound, temperature).	• make relevant systematic and detailed observations • use a range of equipment to take measurements (e.g. distance, time, temperature, capacity, force) using standard units • select measuring equipment to give appropriately precise results • identify when a sensor can be used to gather evidence • take repeat readings as appropriate.

© PLAN 2025

Recording data		
Children will be able to:		
Key Stage 1	**Lower Key Stage 2**	**Upper Key Stage 2**
• use a camera to take photographs or videos to record their observations • record their observations using drawings • record their observations using labelled drawings • record their observations or comparisons in writing • physically group objects, materials and living things or their images by a criterion • physically group objects or materials according to the data they gather (classifying) • use data they gather to physically rank objects or materials (comparative testing) • add their data to a prepared table or simple Venn diagram • add pictures to a pictogram • add tally marks to a tally chart and count up the total number • make a physical block graph or bar chart by using bricks, lolly sticks etc. or paper strips with which they measured lengths or heights.	• record data in a simple table they construct themselves • record data onto a complex table provided for them • record their measurements directly onto a bar chart with the axes and scales provided • record observations and information using a drawing, a labelled diagram and, in Year 4 only, a key.	• choose an appropriate method to record the data they will gather using experience of recording methods learnt in Key Stage 1 and Lower Key Stage 2 (e.g. photographs, videos, drawings, labelled diagrams, writing and tables) • construct, and record data in, a complex table • construct, and record data in, a bar chart • construct, and record data in, a line graph • add data on to a scatter graph with the axes and scales provided • construct, and record data in, a key.

Presenting data		
Children will be able to:		
Key Stage 1	**Lower Key Stage 2**	**Upper Key Stage 2**
	• present, with support, the recorded data in a different way in order to help answer the question.	• present the recorded data in a different way in order to help answer the question.

© PLAN 2025

Drawing conclusions		
Children will be able to:		
Key Stage 1	**Lower Key Stage 2**	**Upper Key Stage 2**
• use their observations and simple secondary sources (e.g. identification sheets) to name living things they find in the local area • recognise 'biggest and smallest', 'best and worst' etc. from their data • give an answer to their scientific enquiry question that is consistent with the data they have gathered either through observations, measurements or from research • recognise that they can answer scientific enquiry questions in different ways.	• communicate what they learn from practical activities • answer the scientific enquiry question using the data gathered.	• answer the scientific enquiry question using the data gathered • discuss whether other evidence (e.g. from other groups or their scientific understanding) supports or refutes their answer • talk about how their scientific ideas change due to new data that they have gathered • talk about how scientific discoveries have changed scientific understanding in the past and continue to do so today.

Evaluating an enquiry		
Children will be able to:		
Key Stage 1	**Lower Key Stage 2**	**Upper Key Stage 2**
	• identify ways in which they adapted their method as they progressed or how they could change it to improve the data gathered • compare two methods for a test.	• evaluate the precision of their measurements • evaluate whether the results are trustworthy enough to answer the scientific enquiry question.

© PLAN 2025