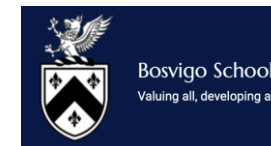


Working Scientifically Skills Tracker



FS	To ask scientific questions	To plan an enquiry	To observe closely	To take measurements	To gather/record results	To present results	To interpret results	To draw conclusions – KS2 only	To make a prediction – KS2 only	To evaluate an enquiry – KS2 only
Classifying	Be able to ask a Yes/No questions to aid sorting (KS1)	Explore the natural world around them, making observations and drawing pictures of animals and plants	Explore the natural world around them, making observations and drawing pictures of animals and plants Sort objects and living things into different groups.		Explore the natural world around them, making observations and drawing pictures of animals and plants	Sort objects and living things into different groups.	Participate in discussions, offering their own ideas, using recently introduced vocabulary	Children in KS1 are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions.	Children in KS1 are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess.	Children in KS1 are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary.
Researching	Listen attentively and respond to what they hear with relevant questions. Ask questions to clarify their understanding. Find out information from visitors.	Come up with questions to ask scientific visitors.	Learn about living things from different places.		Make comments about what they have heard and ask questions to clarify their understanding.	Offer explanations for why things might happen.	Offer explanations for why things might happen.			
Comparative /fair testing	Ask their own scientific question following a taught topic. (do big bikes go faster?)	Choose tools to use and decide what they want to do.	Look at how things differ if they are done a different way (microwave popcorn/fire popcorn)	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	Record what has happened by taking photographs	Explain how things differ if they are done a different way. Tell an adult what they learnt by showing them.	Participate in discussions, offering their own ideas, using recently introduced vocabulary			
Observing over time	Ask what is going to happen in the future from observing something in the present.	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	Explain how something has changed over time (a puddle in the sun)	Present what they learnt verbally.	Participate in discussions, offering their own ideas, using recently introduced vocabulary			
Pattern seeking	As a pattern seeking question (can all the children with long legs jump higher than the people with little legs?)	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	Collect measurements from investigations.	Present what they learnt verbally.				

Working Scientifically Skills Progression



KS1	To ask scientific questions	To plan an enquiry	To observe closely	To take measurements	To gather/record results	To present results	To interpret results	To draw conclusions	To make a prediction	To evaluate an enquiry
Classifying	Be able to ask a Yes/No questions to aid sorting	Identify the headings for the two groups (it is, it is not)	Be able to compare objects based on obvious, observable features e.g. size, shape, colour, texture etc.			Sort objects and living things into two group using a basic Venn diagram or simple table	Talk about the number of objects in each group i.e. which has more or less	Children in KS1 are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions.	Children in KS1 are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess.	Children in KS1 are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary.
	Ask one or two simple questions linked to a topic					Present what they have learnt verbally or using pictures	Be able to answer their questions using simple sentences			
	Identify the question to investigate from a scenario or choose a question from a range provided	Choose equipment to use and decide what to do and what to observe or measure in order to answer the question	Make observations linked to answering the question	When appropriate, measure using standard units where all the numbers are marked on the scale	Record data in simple prepared tables, pictorially or by taking photographs	Present what they learnt verbally, using pictures or block diagrams	Answer their question in simple sentences using their observations or measurements			
Comparative/fair testing	Ask a question about what might happen in the future based on an observation				Record data in simple prepared tables, pictorially or by taking photographs	Present what they learnt verbally or using pictures				
Observing over time	Ask a question that is looking for a pattern based on observations				Record data in simple, prepared tables and tally charts	Present what they learnt verbally				

Working Scientifically Skills Progression



LKS2	To ask scientific questions	To plan an enquiry	To observe closely	To take measurements	To gather/record results	To present results	To interpret results	To draw conclusions	To make a prediction	To evaluate an enquiry
Classifying	Be able to ask a range of Yes/No questions to aid sorting	Be able to put appropriate headings onto intersecting Venn and Carroll diagrams	Be able to compare objects based on more sophisticated, observable features. Present observations in labelled diagrams.			Sort objects and living things into groups using intersecting Venn and Carroll diagrams	Spot patterns in the data particularly two criteria with no examples e.g. there are no living things with wings and no legs	Draw simple conclusions, when appropriate, for patterns e.g. a flying insect with no legs might always crash land		Suggest improvement e.g. a wider range of objects – only looked at British trees. Suggest new questions arising from the investigation.
Researching	Ask a range of questions linked to a topic	Choose a source from a range provided				Present what they learnt verbally or using labelled diagrams	Be able to answer their questions using simple scientific language			Suggest limitations e.g. only had one book. Suggest new questions arising from the investigation.
Comparative/fair testing		Decide what to change and what to measure or observe	As for KS1	Measure using standard units where not all the numbers are marked on the scale, and take repeat readings where necessary	Prepare own tables to record data	Present data in bar charts	Refer directly to their evidence when answering their question	Where appropriate provide oral or written explanations for their findings	Use results from an investigation to make a prediction about a further result	Suggest improvements e.g. to method of taking measurements. Suggest new questions arising from the investigation.
Observing over time		Decide what to measure or observe. Decide how often to take a measurement.	Make a range of relevant observations	Measure using standard units where not all the numbers are marked on the scale. Use dataloggers to measure over time.		Present data in time graphs				
Pattern seeking		Decide what to measure or observe	As for KS1	Measure using standard units where not all the numbers are marked on the scale.		Use ICT package to present data as a scattergram				

Working Scientifically Skills Progression



UKS2	To ask scientific questions	To plan an enquiry	To observe closely	To take measurements	To gather/record results	To present results	To interpret results	To draw conclusions	To make a prediction	To evaluate an enquiry
Classifying	Be able to ask a range of Yes/No questions to aid sorting and decide which ways of sorting will give useful information	Identify specific clear questions that will help to sort without ambiguity	Be able to compare not only based on physical properties but also on knowledge gained through previous enquiry			Create branching databases (tree diagrams) and keys to enable others to name living things and objects	Be able to talk about the features that objects and living things share and do not share based on the information in the key etc.	Be able to use data to show that living things and materials that are grouped together have more things in common than with things in other groups		Be able to explain using evidence that the branching database or classification key will only work for the living things or materials it was created for
Researching	Ask a range of questions recognising that some can be answered through research and others may not	Choose suitable sources to use				Present what they learnt in a range of ways e.g. different graphic organisers	Be able to answer their questions using scientific evidence gained from a range of sources			Be able to talk about their degree of trust in the sources they used
Comparative/fair testing	Ask a range of questions and identify the type of enquiry that will help to answer the questions. Ask further questions based on results.	Recognise and control variables where necessary	As for KS1	Measure using standard units using equipment that has scales involving decimals	Prepare own tables to record data, including columns for taking repeat readings	Choose an appropriate form of presentation, including line graphs	Be able to answer their question, describing causal relationships	Provide oral or written explanations for their findings	Use test results to make predictions for further investigations	Explain their degree of trust in their results e.g. precision in taking measurements, variables that may not have been controlled, and accuracy of results
Observing over time							Be able to answer their questions, describing the change over time			
Pattern seeking							Choose an appropriate form of presentation, including scatter graphs			