

# Science: Progression in Scientific Enquiry

	Asking Questions	Making Predictions	Setting up Tests	Observing and Measuring	Recording data, results and findings	Interpreting and communicating results	Evaluating	Comparative/ Fair Testing	Research	Observation over time	Pattern Seeking	Identifying, grouping and classifying	Problem-solving
<b>N</b>	Demonstrate curiosity through hands-on engagement and working to ask basic questions.	Engage in hands-on activities to test predictions. (eg. planting seeds)	Recognise and select items with support from adults.	Look closely and describe what they see.  Use non-standard units (hands or blocks) to measure with support.	Participate in creating a class chart to display their observations and findings.	Use simple words or phrases to describe what they see or experience.  Create drawings related to their observations.	Talk about their experiences and share what they liked about the activity.	Observe and discuss in an adult led group, how changing one thing can affect the activity.	Students will be asked questions and shown visual materials about the topic to spark interest and guide exploration.	Participate in regular check-ins to look at chosen topic and discuss changes they can see.	Engage in activities to find patterns in everyday items and then translate these into scientific activity later in year.	Explore various objects and describe what they see and participate in sorting activities.	Observe and express simple problems they notice.
<b>R</b>	Demonstrate curiosity by asking questions about their surroundings.	Discuss what they notice to inform predictions. (e.g. What do you think will happen if we add water?)	Identify and choose appropriate materials for the test.	Closely observe for changes and use non-standard units (hands or blocks) and simple measuring tools (rulers) to measure.	Represent findings through drawings or symbols, reinforcing their understanding of scientific process.	Articulate observations using simple language to describe what they could see.	Talk about their experiences and share what they liked about the activity.  Begin to identify what did or did not work in their activity.	Begin to recognise that different factors can be changed.  Express what they think will happen if we make a change.	Express curiosity by asking questions about their chosen topic.  Pupils will look at pictures, books and listen to stories to gather key information.	Engage in regular observations of chosen topic and use simple methods to record their observations such as drawing pictures.	Engage in activities to recognise and create patterns and use basic language to explore what patterns they find.	Collaboratively work to create groups of items and explain their reason for grouping them. (e.g these are all blue.)	Observe and discuss a simple problem.  Collaboratively generate possible solutions,
<b>1</b>	Asking simple questions and recognise that they can be answered in different ways.	Make simple predictions.	Perform simple tests.	Observe closely, using simple equipment.	Gather and record data to help in answering questions.	Using their observations and ideas to answer questions.	Use results to form a simple conclusion.	Understand how they can make sure that their test is fair.	Use basic evidence to answer questions within a group.	Regularly observe the changes and understand what changes have occurred over time.	Identify similarities and differences.	Independently identify and classify different groups.	Produce simple resolutions to scientific questions.
<b>2</b>	Asking simple questions and recognise that they can be answered in different ways.	Make simple predictions.	Perform simple tests.	Observe closely, using simple equipment.	Gather and record data to help in answering questions.	Using their observations and ideas to answer questions.	Use results to form a simple conclusion.	Explain how they can make sure that their test is fair.	Use basic evidence to answer questions.	Regularly observe the changes and explain the changes that occur over time.	Identify similarities and differences.	Independently classify different groups and verbally explain these.	Collaboratively solve problems around specific issues.
<b>3</b>	Ask relevant questions and use different types of scientific enquiry to answer questions.	Make predictions and compare these with other peoples.	Set up simple practical enquiries, comparative and fair tests.	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Gather, record, classify and present data in a variety of ways to help answering questions.  Record findings using simple, scientific language, drawings, labelled diagrams, keys, bar charts and tables.	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Recognise the independent, dependent and control variables within a scientific enquiry.	Use straightforward scientific evidence to answer questions or to support their findings.	Regularly observe changes and independently explain the physical changes that have occurred.	Identify differences, similarities or changes related to simple scientific ideas and processes.	Identify different properties of groups, classify these and justify the choice of classification.	Use prior scientific knowledge to solve problems around further questions.
<b>4</b>	Ask relevant questions and use different types of scientific enquiries to answer them.	Make predictions and compare these with other peoples.	Set up simple practical enquiries, comparative and fair tests.	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Gather, record, classify and present data in a variety of ways to help answering questions.  Record findings using simple, scientific language, drawings, labelled diagrams, keys, bar charts and tables.	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Independently distinguish between the independent, dependent and control variables within a scientific enquiry.	Use straightforward scientific evidence to answer questions or to support their findings.	Independently observe changes and monitor these using scientific apparatus.	Identify differences, similarities or changes related to simple scientific ideas and processes.	Identify different properties of groups, classify these and independently justify the choice of classification.	Use prior scientific knowledge to solve problems and answer further questions.
<b>5</b>	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Make informed predictions, using prior scientific knowledge to inform these.	Independently plan and set up practical enquiries, comparative and fair tests.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.	Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, scatter graphs, bar and line graphs.	Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms of such displays and other presentations.	Use test results to make predictions to set up further comparative fair tests.	Independently identify and control variables to ensure a fair test is carried out.	Identify scientific evidence that has been used to support or refute ideas or arguments.	Independently observe changes, monitor these using scientific apparatus and use their prior learning to explain why the changes are occurring.	Identify differences, similarities or changes and relate these to complex scientific ideas and processes.	Identify key scientific characteristics of groups and classify using these.	Independently use prior scientific knowledge to solve problems and answer further questions.
<b>6</b>	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Make informed predictions, using prior scientific knowledge to inform these.	Independently plan and set up practical enquiries, comparative and fair tests.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.	Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, scatter graphs, bar and line graphs.	Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms of such displays and other presentations.	Use test results to make predictions to set up further comparative fair tests.	Independently identify and control variables to ensure a fair test is carried out.	Identify scientific evidence that has been used to support or refute ideas or arguments.	Independently observe changes, monitor these using scientific apparatus and use their prior learning to explain why the changes are occurring.	Identify differences, similarities or changes and relate these to complex scientific ideas and processes.	Identify key scientific characteristics of groups and classify using these.  Justify and compare classifications within a group.	Independently use prior scientific knowledge to solve problems and answer further questions.

