

KS3 Progress Ladder – Science

Path way A	Path way B	Path way C	Path way D	Mastery Level	Can do words	AO1 Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.	AO2 Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.	AO3 Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.
1. Exceeding expected progress	1.Exceeding expected progress	1.Exceeding expected progress	1.Exceeding expected progress	Extend	Compose Construct Argue Theorise Evaluate Prove Hypothesise Design	<ul style="list-style-type: none"> Students can demonstrate relevant and comprehensive knowledge and understanding. Students can apply higher-level knowledge and understanding correctly to both familiar and unfamiliar situations using accurate scientific terminology. 	<ul style="list-style-type: none"> Students explain how and why some questions can be investigated and why some cannot. Students can suggest examples of independent, dependent, and control variables in an unfamiliar situation. Students use a range of mathematical skills to perform complex scientific calculations. 	<ul style="list-style-type: none"> Students compose scientific explanations for unexpected observations or measurements making allowances for anomalies. Students critically interpret and evaluate conflicting evidence. Students analyse findings to interpret trends and patterns and draw detailed and complex conclusions from their evidence.
					Create Justify Reflect Generalise Predict Plan	<ul style="list-style-type: none"> Students can justify their ideas using relevant scientific content. Students can correctly interpret information and write detailed answers 	<ul style="list-style-type: none"> Students can explain the effect of experimental error, and of not controlling all the variables adequately. Students can identify risks in an experiment and write an appropriate risk specific to the investigation. 	<ul style="list-style-type: none"> Students suggest and justify improvements to experimental procedures using detailed scientific knowledge and understanding. Students suggest coherent strategies to take particular investigations further.
2. Making expected progress	2. Making expected progress	1.Exceeding expected progress	1.Exceeding expected progress	A/E	Analyse Compare and contrast Apply Interview Explain causes	<ul style="list-style-type: none"> Students can explain processes by making connections between ideas or concepts. Students can compare and contrast different ideas/ models. 	<ul style="list-style-type: none"> Students can write a detailed plan for a hypothetical investigation. Students use appropriate mathematical skills to perform multi-step calculations. Students can plot data on a graph and draw the line of best fit. 	<ul style="list-style-type: none"> Students explain how data can be interpreted in different ways. Students analyse findings to interpret trends and patterns and draw conclusions from their evidence. Students identify quantitative relationships between variables, using them to inform conclusions and make further predictions.
3.Below expected progress				Apply		<ul style="list-style-type: none"> Students can explain processes using abstract ideas or models. 	<ul style="list-style-type: none"> Students can describe how to make and record observations and measurements. Students can calculate a mean from three repeat measurements. 	<ul style="list-style-type: none"> Students assess the strength of evidence, deciding whether it is sufficient to support a conclusion. Students explain ways of modifying working methods to improve reliability.

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							<ul style="list-style-type: none"> Students can present data appropriately as tables and graphs. 	
4.Cause for concern	3.Below expected progress	2. Making expected progress			Explain effects Distinguish Question Relate Classify Organise Sequence	<ul style="list-style-type: none"> Students demonstrate mostly accurate and appropriate knowledge and understanding using mostly accurate scientific terminology. 	<ul style="list-style-type: none"> Students can apply knowledge and understanding mostly correctly to familiar and unfamiliar contexts. 	<ul style="list-style-type: none"> Students interpret data in various formats, recognising anomalous results. Students explain differences in repeated investigations.
	4.Cause for concern	3.Below expected progress	2. Making expected progress	K/A	Describe Combine Follow a step by step procedure	<ul style="list-style-type: none"> Students describe scientific ideas using simple models. 	<ul style="list-style-type: none"> Students can write a basic method for an investigation Students can describe how to produce accurate and precise data, and reduce experimental error Students can describe a risk assessment 	<ul style="list-style-type: none"> Students draw valid conclusions that use more than one piece of supporting evidence. Students evaluate working methods suggesting ways to improve them.
		4.Cause for concern	3.Below expected progress	Know	Outline List Define Label Draw	<ul style="list-style-type: none"> Students demonstrate some relevant scientific knowledge and understanding using limited scientific terminology 	<ul style="list-style-type: none"> Students can state what should be included in the plan for an investigation Students can identify different types of variable and experimental errors Students can state what is meant by a risk assessment 	<ul style="list-style-type: none"> Students make comparisons from the data/observation and produce a simple conclusion. Students make suggestions about how their methods could be improved.
			4.Cause for concern	Developing	Name Match Find Identify	<ul style="list-style-type: none"> Students recall basic scientific facts. Students identify basic structures. Students label basic diagrams Students correctly match keywords/definitions. 	<ul style="list-style-type: none"> With help, students can calculate a mean of two values. Students can add data to a graph or chart. 	<ul style="list-style-type: none"> Students can use simple mathematical concepts to calculate results Students can recognise some patterns in results.