KS3 Introduction To Science – Learning Objectives

	Beginning	*Developing*	*Secure*	*Embedding*	*Extending*	*Excelling*
Laboratory Safety	*ALL STUDENTS MUST BE AT LEAST 'SECURE' IN THIS TOPIC*		Recognise common laboratory hazards, and explain how to stay safe in the laboratory. Recognise the meanings of the symbols used to mark hazardous chemicals and equipment.	Complete a risk assessment, identifying how to prevent accidents. Understand the meanings of the hazard symbols, and explain how to handle such substances safely.	Complete a detailed risk assessment, identifying the likelihood of an accident and the severity of an injury.	
Apparatus and Measurement	Know the names of some common pieces of laboratory apparatus. Explain how to be safe when using a Bunsen burner. Take measurements using simple apparatus, and recall some units of measurement.		Know the names of a range of laboratory glassware, explain their usual functions, and know how to draw them correctly. Name the parts of a Bunsen burner, and explain what they do. Demonstrate how to light a Bunsen burner, adjust the flame type, and heat substances safely in a test/boiling tube, and in a flask/beaker. Name the most appropriate instrument to use for making a given measurement, and give the appropriate units. Take measurements with a good degree of precision (eg. mm).		-	-
Planning Investigations	Understand the meaning of the term 'fair test'.	Decide on an appropriate aim for an experiment, and make a suitable hypothesis. Name most pieces of apparatus needed for an experiment, and outline a simple, workable method. Represent experimental data using an appropriate results table and graph. Draw a conclusion from the data you are given.		Support your hypothesis with an appropriate scientific explanation, perhaps including some background research into the topic. Name all appropriate apparatus required for an experiment, justifying your choices. Write a detailed plan for an investigation, giving details of the range and interval of the measurements to be made; understand the advantage of repeat readings. Present data in a properly labelled results table and graph, showing an appropriate level of precision in all readings; graphs are accurately plotted, with an appropriate line or curve of best fit. Identify anomalous data from a results table or graph, and know how to deal with anomalies. Evaluate an experiment's method and results, and suggest future improvements.		

* Objectives covering more than one grade are assessed based on the level of scientific detail and language used by the learner.