

	Year 8	Year 8	Year 8	Year 8	Year 8	Year 8	Year 8	
	1	2	3	4	5	6	7	
Planning	I can follow instructions and complete simple practical tasks in a step-by-step manner. I can write my results down.	I can suggest how to find things out and produce my own method with help. I can follow methods using simple equipment and I can make observations.	I can predict what I think will happen in an experiment. I can plan a fair test, write a method and follow instructions without help. I work safely. I can identify a control variable needed to keep an experiment fair.	I can use skills I've learned to plan investigations that answer scientific questions. I can use what I've learned to write predictions and hypotheses. I can identify the Independent and Dependent Variables. I can identify more than one control variable. I can identify 1 or 2 hazards and write a risk assessment. I follow procedures and work safely.	I can use scientific ideas to independently develop hypotheses and plan experiments. I can explain my hypothesis in detail. I can write detailed plans. I can identify the IV, DV and at least 2 control variables. I can explain why things need to be kept the same without just saying "to make it a fair test". I can independently identify 2 or more hazards and write a risk assessment. I follow procedures accurately and work safely. I understand why scientists need to repeat experiments and plan for this.	I can use scientific theories to independently develop hypotheses and plan experiments. I can explain my hypotheses in a detailed, extended way using more than one step in my explanations. I can use theories and explanations to independently plan controlled experiments which yield valid results. I can identify the IV, DV and various control variables and explain why they need to be controlled. I can identify sources of error when I am doing the work. I can write detailed risk assessments, follow procedures and suggest improvements and weaknesses as I work. I manage risks whilst working. I understand why scientists need to repeat experiments and plan for this.	I can use scientific theories to independently develop hypotheses and plan experiments. I can explain my hypotheses in a detailed, extended way. I can use theories and explanations to independently plan controlled experiments which yield valid results. I can identify the IV, DV and various control variables and explain why they need to be controlled. I can identify sources of error when I am doing the work. I can write detailed risk assessments, follow procedures and suggest improvements and weaknesses as I work. I manage risks whilst working. I understand why scientists need to repeat experiments and plan for this.	I can use scientific models and theories to independently develop hypotheses and plan experiments. I can explain my hypotheses in a detailed, extended way. I can use scientific ideas to independently plan controlled experiments which yield valid results and I can identify sources of error in my plan before starting practical work and work out how to minimise errors. I can identify the IV, DV and various control variables and explain why they need to be controlled. I can write detailed risk assessments, follow procedures and suggest improvements and weaknesses as I work. I manage risks whilst working. I understand why scientists need to repeat experiments and plan for this. I understand how preliminary experiments help me to determine the correct intervals.
Conclusions / Analysis	I write down my results and I can tell you what I found out.	I can use tables to record my data and can draw graphs with help. I can say whether my results were what I expected.	I can put data into results tables and draw bar charts with confidence but I sometimes need help with the scale. I can read graphs and tables and describe the main patterns that I see. I can make observations and say what I think caused these. I use units and keywords in my work.	I can present data in tables and plot graphs accurately. I can read data from graphs. I always put the IV on the x axis and the DV on the y axis. I can read graphs and tables and describe the main patterns that I see. I can make broad conclusions based on the evidence I see in data. I can calculate the mean, range and interval.	I can choose the best type of graph to use and I use appropriate units and language. I always put the IV on the x axis and the DV on the y axis. I can read graphs and tables and describe the main patterns that I see. I can make broad conclusions based on the evidence I see in data. I can identify anomalous results. I can calculate the mean, range and interval.	I always present data in the most appropriate way and use appropriate units and language. I can quickly understand lots of different types of tables and graphs. I can analyse patterns and trends in data and make detailed conclusions consistent with data. I can identify anomalous results and suggest what caused them. I can calculate the mean, range and interval.	I always present data in the most appropriate way and use appropriate units and language. I can analyse various data and can write detailed conclusions consistent with data. I can say why I made my conclusions. I can identify anomalous results in my data and leave them out when calculating a mean. I can suggest the cause of anomalous results. I can calculate the mean, range and interval. I understand how repeats affect my mean.	I always present data in the most appropriate way and use appropriate units and language. I can analyse various data and can write reasoned, detailed conclusions consistent with data. I can say why I made my conclusions. I can identify anomalous results in my data and take into account these weaknesses when calculating a mean and writing my conclusions. I can calculate the mean, range and interval and comment on these numbers. I understand how repeats affect my mean and what the range tells me about my data.
Evaluating	I can explain why we did an experiment. I recognise examples of science in my life.	I can say why my experiment was not fair. I recognise examples of science in my life and can say why experiments are useful. I know that ideas can change over time.	I can identify a weakness (source of error) in my investigation and say how to improve it next time. I know why results from experiments are important. I know that scientific ideas change over time.	I can identify a weakness (source of error) in my investigation and say how to improve it next time. I can say how science can change peoples' ideas. I know that scientific ideas change over time and can explain how scientific ideas can be used to make money and/or help the environment.	I can identify more than one weakness (sources of error) in my investigation and suggest improvements. I can say how much I trust my data based on the weaknesses I've identified. I can say if my results are repeatable and why. I understand how scientific advances may have benefits and risks. I know that scientific ideas change over time and can describe how science affects people on personal, economic and environmental levels.	I can say if my data is accurate, repeatable and reproducible. I can give multiple reasons for what might have caused errors in experiments and can explain how to improve these. I have started to criticise data and understand the limitations of evidence. I understand how scientific advances may have ethical implications, benefits and risks. I can explain why scientific ideas change over time and can describe how science affects people on personal, economic and environmental levels.	I can give multiple reasons for what might have caused errors in experiments and can explain how to improve these. I can evaluate data based on accuracy, repeatability and reproducibility. I understand why it's important to have high resolution of measurements. I can recognise bias in experiments. I understand how scientific advances may have ethical implications, benefits and risks. I can explain why scientific ideas change over time and can explain personal, social, economic and environmental implications of scientific advances. I can write detailed evaluations of experiments in terms of the quality of the data and the implications of the findings on the real world.	I can give multiple reasons for what might have caused errors in experiments and can explain how to improve these. I can evaluate data based on accuracy, precision, repeatability and reproducibility. I can quickly recognise bias and weaknesses in experiments. I understand the limitations of the evidence and can write detailed evaluations of data based on all these factors. I understand why it's important to have high resolution of measurements. I understand how scientific advances may have ethical implications, benefits and risks. I can explain why scientific ideas change over time and can suggest and explain potential personal, social, economic and environmental implications of scientific advances. I can evaluate these benefits and risks and come to balanced conclusions in my opinions about scientific advances.
OVERALL	I can talk you through my ideas and can explain how some things work but need help to write these ideas down.	I can describe my ideas in writing and find the correct information to answer questions.	I can develop simple written explanations on my own but need help with using some scientific theories and models.	I can explain things using simple scientific ideas and simple models.	I can develop extended (two-step) explanations using scientific ideas and knowledge and use abstract models to explain things. I need to be prompted to extend my explanations.	I can confidently develop my own extended explanations using scientific ideas, models and theories.	I can confidently develop my own extended explanations using scientific ideas, models and theories and I can link my ideas.	I can use detailed, secure knowledge, and a range of models and theories to give detailed explanations. I have started to link ideas from other things I have studied in Science.