



Making Progress

Biology, Chemistry, Physics and Trilogy Science

Grading in science is based on the proportion of the paper a student can correctly answer so for example a student may have thorough knowledge and understanding of a complex concept for one topic area and has fully understood an unfamiliar context so they are able to accurately apply their knowledge but for another topic area they may have no retention of the factual content or they may have the knowledge and understanding but cannot interpret or make the necessary connection to the context of a question. This means that whilst a student may perform very well in one particular assessment for one topic, they do not have the breadth of knowledge or skill in application or the long term retention for the wide range of topics that they study over the duration of the course, and therefore in a full GCSE exam would not gain the same grade if we made the judgement on one topic alone.

Grade	Knowledge, Understanding, Terminology and Application	Mathematical Skills	Data Analysis	Evaluation
9 and 9-9	Able to retain the comprehensive knowledge and understanding, and apply all the skills at the level 8 standard described below correctly for the full range of topics studied over the duration of the course.			
8 and 8-8	Demonstrate relevant and comprehensive knowledge and understanding and apply these correctly to both familiar and unfamiliar contexts using detailed and accurate terminology. Able to retain this knowledge over the long term. There are only minor errors in 1 or two topic areas. In addition students are able to synthesise knowledge and understanding from different topic areas to suggest explanations for a wide variety of situations.	Use a range of mathematical skills to perform complex scientific calculations applied to the full range of topics across the course, including the correct selection of skills to apply to unfamiliar contexts.	Critically analyses qualitative and quantitative data to draw logical, well-evidenced conclusions. The detail of data is described and relevant knowledge and understanding is applied accurately to explain observed patterns in data. This level of analysis and explanation is used for the full range of tabulated and graphical data including unfamiliar formats.	For investigations, critically evaluate and refine methodologies, and judge the validity of scientific conclusions. For topics studied in the course the student is able to use both data and provided information to provide evaluative points that are fully explained and backed up for both familiar and unfamiliar contexts across the full range of topic areas.
7 and 7-7	For a very high number of topics demonstrate relevant and comprehensive knowledge and understanding and apply these correctly to both familiar and unfamiliar contexts using detailed and accurate terminology. Able to retain this	Select and use a range of mathematical skills to perform complex scientific calculations applied to many topics across the course	Analyses qualitative and quantitative data to draw logical, evidenced conclusions. The detail of data is described and relevant knowledge and understanding is applied to	For investigations, evaluate and refine methodologies, and judge the validity of scientific conclusions with a degree of accuracy. For topics studied in the course

	knowledge over the long term. For some situations students are able to synthesise knowledge and understanding from different topic areas to suggest explanations.	including unfamiliar contexts.	explain observed patterns in data, frequently accurately. This level of analysis and explanation is used for a wide range of formats for tabulated and graphical data including unfamiliar formats.	students are able to use both data and provided information to provide evaluative points within exams that are explained and often backed up for both familiar and unfamiliar contexts across a range of topic areas.
6 and 6-6	Demonstrate good levels of accuracy and appropriate knowledge and understanding and apply these frequently correctly to familiar and unfamiliar contexts, using a detailed and accurate scientific terminology in nearly all cases. This level of accuracy is maintained over the long term with a high number of topic areas.	Use a range of appropriate mathematical skills to perform multi-step calculations and occasional complex scientific calculations.	Analyses qualitative and quantitative data to draw correct conclusions that are often evidenced. Descriptions of data often have detail and for simple and some more advanced topic areas knowledge and understanding can be applied to explain observed patterns. This level of analysis and explanation is used for a number of formats for tabulated and graphical data where situations are familiar but occasionally unfamiliar.	For investigations evaluate and occasionally refine methodologies. The validity of scientific conclusions is commented upon but depth is lacking. For topics studied in the course the student is able to use provided information to provide evaluative points that are explained and occasionally backed up for familiar contexts in a number of topic areas.
5 and 5-5	Demonstrate mostly accurate and appropriate knowledge and understanding and apply these mostly correctly to familiar and unfamiliar contexts, using mostly accurate scientific terminology. There is loss in the retention of detail in a number of topic areas over the long term.	Use appropriate mathematical skills to perform multi-step calculations. Complex calculations are attempted but there are errors in procedures.	Analyse qualitative and quantitative data to draw plausible conclusions supported by some simple evidence. Descriptions of basic formats of data are detailed and knowledge and understanding can be applied to simple situations to explain observed patterns. This levels of analysis and explanation is for basic formats of tabulated and graphical data where situations are familiar.	For investigations evaluate methodologies to suggest basic improvements to experimental methods, and comment on scientific conclusions. For topics studied in the course the student is able to give evaluative points within exams based on information provided and knowledge gained whilst studying topics.
4 and 4-4	Demonstrate accuracy and appropriate knowledge and understanding in a number of different topic areas. In some cases this knowledge can be partially applied to unfamiliar contexts as well as familiar.	In some circumstances the student attempts appropriate mathematical skills to perform multi-step calculations but there are	Analyse qualitative and some quantitative data and occasionally draw plausible conclusions. Simple descriptions of data can be made and	For investigations make basic and occasionally more in depth comments relating to experimental methods with occasional suggestions for

	Students have difficulty in retaining the detail of factual content over the long term.	occasional error in procedure. Basic calculations can be correctly done in a range of circumstances.	occasionally basic knowledge and understanding can be used to explain situations. This level of analysis and explanation is limited to a few basic formats of tabulates and graphical data where situations are familiar.	improvements. For topics studied in the course the student is able to give some evaluative points in based on knowledge gained through study and occasionally based on information provided in the question.
3 and 3-3	Demonstrate relevant scientific knowledge and understanding using scientific terminology in familiar contexts and rarely with unfamiliar. Long term retention of knowledge presents a challenge but is present for a number of topic areas but can lack detail. Correct application to both familiar and unfamiliar contexts is rare.	Basic calculations can be correctly done in a range of circumstances.	Able to identify and correctly describe a pattern using the correct variables for data provided in simple formats. Draw simple conclusions from qualitative or quantitative data. For a limited number of simpler topics areas the student is able to use their knowledge and understanding to give a basic reason for the pattern.	For investigations make basic comments relating to experimental methods with suggestions for improvements in a limited number of simple investigations. For topics studied in the course the student is able to give some evaluative points based on knowledge gained through study with occasional breadth.
2 and 2-2	Demonstrate some relevant scientific knowledge and understanding using limited scientific terminology for a narrow range of topic areas. Students experience difficulty in retaining knowledge over the long term and detail is often limited.	Perform basic calculations in some areas.	Able to identify and correctly describe a pattern using the correct variables for data provided in simple formats. Draw simple conclusions from qualitative or quantitative data	For investigations make basic comments relating to experimental methods. For topics studied in the course the student is able to provide some evaluative points for a limited number of situations.
1 and 1-1	Demonstrate some scientific knowledge and uses the scientific terminology for a few topic areas. Long term retention of topic content is a significant challenge and application to familiar contexts is rare.	Perform basic calculations in a limited number of errors, however errors occur.	Able to identify a simple pattern if data is presented in a simple format. A simple conclusion is given in some circumstances but difficulty occurs with quantitative data or unfamiliar formats.	Occasionally make basic comments relating to experimental methods. Advantages and disadvantages given for a very limited number of situations where the topic is very familiar.
1-	Demonstrates some scientific knowledge and occasionally uses scientific terminology in a few simple topic areas. Long term retention is a significant challenge and is	Attempts at basic calculations in some areas occur however there are frequent errors.	Able to identify increases and decreases and occasionally identify a pattern if data is	Comments relating to experimental methods are limited and frequently limited to human error. Advantages

	often absent. Application to contexts is absent.		presented in simple and familiar formats.	and disadvantages are occasionally given but are limited to one or two points for one or two simple and familiar areas of study.
W - Working towards	Able to demonstrate some simple scientific knowledge but rarely uses scientific terminology. Retention of knowledge is absent over the long term.	Occasional attempts at basic calculations but frequently done with error unless guidance is provided.	Able to identify if there is an increase or decrease in simply presented data but unable to relate to the variables in the investigation.	Comments relating to experimental methods are limited and relate only to human error. An advantage or disadvantage can be given in a simple and familiar area of study
F - Foundation	Understanding of simple scientific concepts is challenging but present in one or two areas. Scientific terminology is currently absent and factual knowledge is lost over the long term.	Unable to carry out basic calculations without guidance.	Able to identify if there is an increase or decrease in a limited number of simply presented data but unable to relate to the variables in the investigation.	Students currently lack the understanding of scientific method to make comments beyond human error. An advantage or disadvantage is occasionally given in a simple and very familiar area of study.