

Science grade descriptors

9	Students can accurately recall a wide range of knowledge from all areas of the specification and have independently extended their range of knowledge beyond the specification.	Students actively seek out detailed scientific knowledge and understanding in many different areas relating to scientific systems or phenomena.	Students can draw together and communicate knowledge from all areas of the specification and beyond. They are confident in their use of scientific or mathematical conventions in support of arguments, and they exhibit the full range of scientific and technical vocabulary throughout their work.		
8	Students can accurately recall a wide range of knowledge from the topics they have studied and have extended their knowledge beyond the specification in a few areas.	Students can use detailed scientific knowledge and understanding in the areas relating to scientific systems or phenomena that they have studied.	Students can draw together and communicate knowledge from the topics they have studied. They routinely use scientific or mathematical conventions in support of arguments, and use a wide range of scientific and technical vocabulary throughout their work.	Students can consistently use scientific knowledge and understanding to describe an appropriate method for a practical task, identifying all the key factors to be considered. They can accurately recall or describe a range of apparatus required for the task. They can identify anomalous observations and measurements and the salient features of graphs and explain these in reference to their detailed scientific knowledge.	Students can consistently use scientific knowledge and understanding to identify and explain patterns and draw conclusions from the evidence by combining data of more than one kind or from more than one source. They can discuss reasons for shortcomings in the evidence, use a wide range of scientific knowledge and understanding to draw accurate conclusions from their evidence and suggest substantial improvements to the methods used that would enable them to collect more reliable evidence.
7	Students can consistently recall a wide range of knowledge from the topics they have studied.	Students can use detailed scientific knowledge and understanding in some of the areas relating to scientific systems or phenomena that they have studied.	Students can draw together and communicate knowledge from the topics they have studied. They routinely use scientific or mathematical conventions in support of arguments, and use a wide range of scientific and technical vocabulary throughout their work.	Students can use scientific knowledge and understanding to describe an appropriate method for a practical task, identifying the key factors to be considered. They can recall or describe a range of apparatus required for the task. They can select a method of presenting data that is appropriate to the task; they can select information from a range of sources where it is appropriate to do so. They can identify and explain anomalous observations and measurements and the salient features of graphs.	Students can use scientific knowledge and understanding to identify and explain patterns and draw conclusions from the evidence by combining data of more than one kind or from more than one source. They can identify shortcomings in the evidence, use scientific knowledge and understanding to draw conclusions from their evidence and suggest improvements to the methods used that would enable them to collect more reliable evidence.
6	Students can consistently recall a range of scientific information from the topics they have studied and can link this information across topics.	Students can use and apply scientific knowledge and understanding in some general contexts they have studied.	Students can describe links between related phenomena in different contexts; use diagrams, charts and graphs to support arguments; use appropriate scientific and technical vocabulary in contexts they have studied.	Students can use scientific knowledge and understanding to identify an approach to a practical scenario. For example, they can identify key factors to vary and control; they can recall or describe a range of apparatus required for the task.	Students can present data systematically, in graphs where appropriate, and use lines of best fit; they can identify and explain patterns within data and draw conclusions consistent with the evidence. They can explain these conclusions on the basis of their scientific knowledge and understanding, and evaluate how strongly their evidence supports the conclusions.
5	Students can recall a range of scientific information from the topics they have studied.	Students can use and apply scientific knowledge and understanding in the contexts they have studied.	Students can describe links between related phenomena in different contexts; use diagrams, charts and graphs to support arguments; use appropriate scientific and technical vocabulary in a range of contexts.	Students can use limited scientific knowledge and understanding to identify an approach to a practical scenario. For example, they can identify some key factors to vary and control; they can recall or describe a range of apparatus required for the task.	Students can present data systematically, in graphs where appropriate, and use lines of best fit; they can identify and explain patterns within data and draw conclusions consistent with the evidence. They can explain these conclusions on the basis of their scientific knowledge and understanding, and evaluate how strongly their evidence supports the conclusions.
4	Students can recall a limited range of information from the topics they have studied and can link this information across topics.	Students can use and apply knowledge and understanding in the specific everyday contexts they have studied.	Students can make some use of scientific and technical vocabulary and make simple generalisations from information.	Students can devise fair tests in contexts which involve only a few factors. They can recall or describe simple apparatus appropriate for the task.	Students can obtain information from simple tables, charts and graphs and identify simple patterns in information and observations. They can offer explanations consistent with the evidence obtained.
3	Students can recall a limited range of information from the topics they have studied.	Students can use and apply knowledge and understanding in the specific everyday contexts they have studied.	Students can make some use of scientific and technical vocabulary.	Students can recall or describe simple apparatus appropriate for the task.	Students can obtain information from simple tables, charts and graphs and identify simple patterns in information and observations.
2	Students can describe some scientific ideas such as the structure of cells and the difference between elements and compounds.	Students can use their understanding to explain their observations.	Students can recall some scientific and technical vocabulary.	Students can use simple apparatus with guidance to carry out a scientific investigation safely when given a method.	Students can collect results carefully in a table and use these to plot bar/line graphs when given some help with the scale.
1	Students are starting to remember some of the key content explored.	Students can describe some scientific ideas but are not yet able to use their understanding to explain their observations.	Students can describe their observations, but they may not know the appropriate scientific and technical vocabulary.	Students can describe safety measures that are appropriate for a scientific investigation.	Students can use their observations to complete a table.