Academic Achievement: Rating Descriptors

Subject: Science

Year: 9

In general, based on progress shown so far, we expect that **by the end of this academic year** your child will…

1 Above the expected standard	...demonstrate extensive knowledge and understanding related to scientific ideas. They use and apply this effectively in their descriptions and explanations, identifying links between topics. They interpret, evaluate and synthesise data from a range of sources and in a range of contexts and show they understand the relationship between evidence and scientific ideas. They describe and explain the importance of a wide range of applications and implications of science in the modern world.	...plan appropriate approaches and procedures, by synthesising information from a range of sources and identifying key factors in complex contexts and in which variables cannot readily be controlled. They select and use methods to obtain reliable data, including making systematic observations and measurements with precision, using a range of apparatus. They recognise the need for a risk assessment and consult appropriate sources of information, which they follow. They record data in graphs, using lines of best fit. They analyse findings to draw conclusions that are consistent with the evidence and use scientific knowledge and understanding to explain these conclusions and identify possible limitations in primary and secondary data. They use quantitative relationships between variables. They communicate effectively, using a wide range of scientific and technical conventions and terminology, including symbols and flow diagrams. They begin to consider whether the data they have collected are sufficient for the conclusions they have drawn.
2 Meeting the expected standard	...describe processes and phenomena related to scientific ideas using abstract ideas and appropriate terminology. They take account of a number of factors or use abstract ideas or models in their explanations of processes and phenomena. They apply and use knowledge and understanding in unfamiliar contexts. They describe some evidence for some accepted scientific ideas, and can explain the importance of some applications and implications of science.	...identify an appropriate approach in investigatory work, selecting and using sources of information, scientific knowledge and understanding. They select and use methods to collect adequate data for the task, measuring with precision, using instruments with fine scale divisions, and identify the need to repeat measurements and observations. They recognise a range of familiar risks and act to control them. They record data and features effectively, choosing scales for graphs and diagrams. They analyse findings to draw conclusions that are consistent with the evidence and use scientific knowledge and understanding to explain them and account for any inconsistencies in the evidence. They manipulate numerical data to make valid comparisons and draw valid conclusions. They communicate qualitative and quantitative data effectively, using scientific conventions and terminology. They evaluate evidence, making reasoned suggestions about how their working methods could be improved.
3 Working towards the expected standard	...describe processes and phenomena drawing on abstract ideas and using appropriate terminology. They explain processes and phenomena, in more than one step or using a model. They apply and use knowledge and understanding in familiar contexts and recognise that both evidence and creative thinking contribute to the development of scientific ideas. They describe applications and implications of science in the modern world.	...decide appropriate approaches to a range of tasks, including selecting sources of information and apparatus. They select and use methods to obtain data systematically. They recognise hazard symbols and make, and act on, simple suggestions to control obvious risks to themselves and others. They use line graphs to present data, interpret numerical data and draw conclusions from them. They analyse findings to draw scientific conclusions that are consistent with the evidence. They communicate these using scientific and mathematical conventions and terminology. They evaluate their working methods to make practical suggestions for improvements.
4 Below the expected standard	...describe some processes and phenomena related to scientific ideas, drawing on scientific knowledge and understanding and using appropriate terminology. They recognise that evidence can support or refute scientific ideas, They recognise some applications and implications of science in the modern world.	...decide on an appropriate approach, including using a fair test to answer a question, and select suitable equipment and information from that provided. They select and use methods that are adequate for the task. Following instructions, they act to control obvious risks to themselves. They make a series of observations and measurements and vary one factor while keeping others the same. They record their observations, comparisons and measurements using tables and bar charts and begin to plot points to form simple graphs. They interpret data containing positive and negative numbers. They begin to relate their conclusions to patterns in data, including graphs, and to scientific knowledge and understanding. They communicate their conclusions using appropriate scientific language.