

## 0-9 Scale descriptions for Science - UWS

Stage	Description
9	<p>This category is for the top few percentage nationally.</p> <p>Students make explicit connections between abstract ideas and/or models in explaining processes or phenomena.</p> <p>Employ a systematic approach in deciding the relative importance of a number of scientific factors when explaining processes or phenomena.</p> <p>Suggest ways in which scientific and technological developments may be influenced. Suggest economic, ethical/moral, social or cultural arguments for and against scientific or technological developments.</p> <p>Effectively represent abstract ideas using appropriate symbols, flow diagrams and different kinds of graphs in presenting explanations and arguments no errors in plotting or LOBF.</p> <p>Formulate questions or ideas that can be investigated by synthesising information from a range of sources</p>
8	<p>Students make explicit connections between abstract ideas and/or models in explaining processes or phenomena.</p> <p>Employ a systematic approach in deciding the relative importance of a number of scientific factors when explaining processes or phenomena. use a range of mathematical skills to perform complex scientific calculations</p> <p>Suggest ways in which scientific and technological developments may be influenced. Suggest economic, ethical/moral, social or cultural arguments for and against scientific or technological developments.</p> <p>Effectively represent abstract ideas using appropriate symbols, flow diagrams and different kinds of graphs in presenting explanations and arguments no errors in plotting or LOBF.</p> <p>demonstrate relevant and comprehensive knowledge and understanding and apply these correctly to both familiar and unfamiliar contexts using accurate scientific terminology</p> <p>critically evaluate and refine methodologies, and judge the validity of scientific conclusions</p> <p>Formulate questions or ideas that can be investigated by synthesising information from a range of sources</p>
7	<p>Apply abstract modelling to explain a process or phenomena.</p> <p>Form constructive arguments both for and against a scientific opinion having an unbiased comparison.</p> <p>Effectively represent abstract ideas using appropriate symbols, flow diagrams and different kinds of graphs in presenting explanations and arguments no errors in plotting or LOBF. Critically consider all factors when investigating a scientific problem.</p>
6	<p>Use abstract ideas or models or more than one step when describing processes or phenomena.</p> <p>Explain processes or phenomena, suggest solutions to problems or answer questions by drawing on abstract ideas or models.</p> <p>Distinguish between data and information from primary sources, secondary sources and simulations, and present them in the most appropriate form.</p> <p>Apply scientific knowledge and understanding in the planning of investigations, identifying significant variables and recognising which are independent and which are dependent. Justify their choices of data collection method and proposed number of observations and measurements.</p>
5	<p>Use abstract ideas or models or more than one step when describing processes or phenomena.</p> <p>Explain processes or phenomena, suggest solutions to problems or answer questions by drawing on abstract ideas or models.</p> <p>Distinguish between data and information from primary sources, secondary sources and simulations, and present them in the most appropriate form.</p> <p>Apply scientific knowledge and understanding in the planning of investigations, identifying significant variables and recognising which are independent and which are dependent. Justify their choices of data and use appropriate mathematical skills to perform multi-step calculations</p> <p>collection method and proposed number of observations and measurements. demonstrate mostly accurate and appropriate knowledge and understanding and apply these mostly correctly to familiar and unfamiliar contexts, using mostly accurate scientific terminology</p>

	<p>analyses qualitative and quantitative data to draw plausible conclusions supported by some evidence</p> <p>evaluate methodologies to suggest improvements to experimental methods, and comment on scientific conclusions</p>
4	<p>Use simple models to describe scientific ideas.</p> <p>Use scientific ideas when describing simple processes or phenomena.</p> <p>Describe different viewpoints a range of people may have about scientific or technological developments.</p> <p>Identify ethical or moral issues linked to scientific or technological developments.</p> <p>Decide on the most appropriate formats to present sets of scientific data, such as using line graphs for continuous variables.</p> <p>Recognise significant variables in investigations, selecting the most suitable to investigate.</p>
3	<p>Identify differences, similarities or changes related to simple scientific ideas, processes or phenomena.</p> <p>Use straightforward scientific evidence to answer questions, or to support their findings. Describe some simple positive and negative consequences of scientific and technological developments.</p> <p>Recognise applications of specific scientific ideas and identify aspects of science used within particular jobs or roles.</p> <p>Select appropriate ways of presenting scientific data.</p> <p>select appropriate equipment or information sources to address specific questions or ideas under investigation.</p>
2	<p>Students represent things in the real world using simple physical models.</p> <p>Identify aspects of our lives, or of the work that people do, which are based on scientific ideas.</p> <p>Use scientific forms of language when communicating simple scientific ideas, processes or phenomena.</p> <p>Identify simple advantages of working together on experiments or investigations.</p> <p>Select equipment or information sources from those provided to address a question or idea under investigation.</p> <p>Identify one or more control variables in investigations from those provided.</p> <p>demonstrate some relevant scientific knowledge and understanding using limited scientific terminology</p> <p>perform basic calculations</p> <p>draw simple conclusions from qualitative or quantitative data</p> <p>make basic comments relating to experimental methods</p>
1	<p>Students respond to ideas given to them to answer questions or suggest solutions to problem.</p> <p>Identify aspects of our lives, or of the work that people do, which are based on scientific ideas.</p> <p>Present simple scientific data in more than one way, including tables and bar charts. Select equipment or information sources from those provided to address a question or idea under investigation.</p>
0	<p>Students are able to identify science that is around them.</p> <p>They can follow instructions to complete an investigation and record data on a pre drawn table.</p> <p>They are able to state the name of scientific equipment and methods.</p>