

# Year 9 Science Assessment Grid

End of GCSE target*	Knowledge and understanding Typical test grade	Scientific Attitudes and Thinking	Experimental skills and strategies	Analysis and Evaluation	Vocabulary, units, symbols and nomenclature. Communication skills.
<b>9.9</b>	<b>9</b>	<p><b>exceptional performance:</b> I can readily identify hazards, seek appropriate risk assessment information and advice, select that which is <b>relevant</b> and, in consultation with my teacher, <b>adjust practice as required.</b></p> <p>I can <b>describe and explain</b> the importance of a <b>wide range</b> of applications and implications of science in <b>familiar and unfamiliar</b> contexts.</p>	<p><b>exceptional performance:</b> I can <b>decide the level of precision</b> needed for measurements and collect data that satisfy these requirements.</p> <p>I can <b>suggest and justify</b> values for the variables in an investigation in an unfamiliar context.</p>	<p><b>exceptional performance:</b> I can analyse findings to <b>interpret trends and patterns</b> and draw conclusions from my evidence. I can make <b>effective use of a range of quantitative relationships</b> between variables in calculations or when using data to support evidence. I can evaluate evidence critically and <b>give reasoned accounts</b> of how I could collect additional evidence.</p>	<p><b>exceptional performance:</b> I can evaluate findings and arguments, showing an <b>awareness of the degree of uncertainty</b> and a range of alternative views.</p>
<b>9.8</b>	<b>8</b>	<p>I can consult with my teacher and <b>adapt</b> my approach to practical work to control risk.</p> <p>I <b>understand</b> the relationship between evidence and scientific ideas, and why scientific ideas may need to be changed.</p> <p>I can <b>describe and explain</b> the importance of a <b>wide range</b> of applications and implications of science.</p> <p>I can explain the importance of publishing results and peer review.</p>	<p>I can <b>choose</b> methods that will obtain data with the precision and reliability needed.</p> <p>I can <b>explain</b> how changing the values of the variables in my investigation would affect the <b>validity</b> of my results.</p> <p>I can <b>recognise</b> that different strategies are required to investigate different kinds of scientific questions, and use scientific knowledge and understanding <b>to select an appropriate strategy.</b></p>	<p>I can <b>analyse</b> data and <b>begin to explain, and allow for, anomalies.</b></p> <p>I can <b>carry out multi-step calculations</b> and use compound measures, such as speed, appropriately.</p> <p>I can <b>evaluate evidence critically</b> and suggest how inadequacies can be remedied.</p>	<p>I can communicate findings and arguments, <b>showing awareness</b> of a range of views.</p>
<b>9.7</b>	<b>7</b>	<p>I can <b>recognise the need</b> for a risk assessment and consult appropriate sources of information, which I follow.</p> <p>I can <b>explain</b> how evidence supports some accepted scientific ideas and <b>explain</b> the importance of some applications and implications of science.</p>	<p>I can <b>select and use</b> methods to obtain reliable data, including making systematic observations and measurements with precision</p> <p>I can <b>choose</b> suitable values for the range and interval of the variables in my investigation.</p> <p>I can <b>plan</b> appropriate approaches and procedures, by <b>synthesising</b> information from a range of sources and <b>identifying</b> key factors in <b>complex contexts.</b></p>	<p>I can record data in graphs, <b>using lines of best fit.</b></p> <p>I can 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 <b>secondary data.</b></p> <p>I can begin to <b>consider</b> whether the data I have collected are sufficient for the conclusions I have drawn.</p>	<p>I can communicate effectively, using a <b>wide range</b> of scientific and technical conventions and terminology, including symbols and flow diagrams.</p> <p>I can use the correct <b>units for calculated measurements</b> i.e. Nm, N/kg</p>

9.6	6	<p>I can recognise a range of familiar risks and take action to control them.</p> <p>I can <b>measure with precision</b>, using instruments with finescale divisions, and <b>identify the need</b> to repeat measurements and observations.</p> <p>I can <b>describe some evidence</b> for some accepted scientific ideas and explain the importance of some applications and implications of science.</p>	<p>I can <b>evaluate evidence</b>, explaining how my working methods could be improved.</p> <p>I can <b>describe</b> how the variables in my investigation will be measured or controlled.</p> <p>I can identify an appropriate approach in investigatory work, selecting and using sources of information, scientific knowledge and understanding.</p>	<p>I can analyse findings to draw conclusions that are consistent with the evidence and use scientific <b>knowledge and understanding to explain</b> them and <b>account for any inconsistencies</b> in the evidence.</p> <p>I can manipulate numerical data to make <b>valid</b> comparisons and draw <b>valid</b> conclusions.</p>	<p>I can communicate <b>qualitative and quantitative</b> data effectively, using scientific conventions and terminology.</p> <p>I can <b>rearrange equations</b> to calculate unknown values.</p>
9.5	5	<p>I can <b>recognise hazard symbols</b> and make, and act on, simple suggestions to control obvious risks to myself and others.</p> <p>I can <b>work objectively</b> and state the <b>meaning of accuracy, precision, repeatability and reproducibility</b> in planning experiments.</p> <p>I can recognise that both evidence <b>and creative thinking</b> contribute to the development of scientific ideas.</p>	<p>I can <b>state the dependent, independent and control variables</b> in my investigation.</p> <p>I can <b>choose approaches to a range of tasks</b>, including selecting sources of information and apparatus.</p> <p>I can select and use methods to <b>obtain data systematically</b>.</p>	<p>I can <b>use line graphs</b> to present data, interpret numerical data and <b>draw conclusions</b> from them.</p> <p>I can analyse findings to draw scientific conclusions that <b>are consistent with the evidence</b>.</p>	<p>I can communicate conclusions using scientific and <b>mathematical conventions and terminology</b>.</p> <p>I can <b>convert between units</b> i.e. m and km</p> <p>I can <b>use simple equations</b> to calculate unknown values I can <b>calculate a mean</b></p>
9.4	<4	<p>I can follow instructions and take action to <b>control risks</b> to myself (eg safety goggles)</p> <p>I am beginning to work with accuracy and precision.</p> <p>I can recognise that evidence is needed support scientific ideas.</p>	<p>I can suggest improvements in my work, giving reasons.</p> <p>I can make a <b>series</b> of observations and measurements and vary one factor while keeping others the same</p> <p>I know what a control variable is.</p> <p>I can <b>decide on an appropriate approach</b>, including using a fair test to answer a question, and select suitable equipment and information from that provided.</p>	<p>I can record my observations, comparisons and measurements using tables and bar charts and <b>begin to plot points to form simple graphs</b>.</p> <p>I can begin to relate my conclusions to patterns in data, including graphs, and <b>to scientific knowledge and understanding</b>.</p>	<p>I can communicate my conclusions using appropriate scientific language.</p> <p>I can use a <b>range of correct units</b> for simple measurements</p> <p>I can use chemical symbols for elements <b>and compounds</b></p>