

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

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| 9.6 | 6 | <p>I can recognise a range of familiar risks and take action to control them.</p> <p>I can measure with precision, using instruments with finescale divisions, and identify the need to repeat measurements and observations.</p> <p>I can describe some evidence for some accepted scientific ideas and explain the importance of some applications and implications of science.</p> | <p>I can evaluate evidence, explaining how my working methods could be improved.</p> <p>I can describe 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 knowledge and understanding to explain them and account for any inconsistencies in the evidence.</p> <p>I can manipulate numerical data to make valid comparisons and draw valid conclusions.</p> | <p>I can communicate qualitative and quantitative data effectively, using scientific conventions and terminology.</p> <p>I can rearrange equations to calculate unknown values.</p> |
| 9.5 | 5 | <p>I can recognise hazard symbols and make, and act on, simple suggestions to control obvious risks to myself and others.</p> <p>I can work objectively and state the meaning of accuracy, precision, repeatability and reproducibility in planning experiments.</p> <p>I can recognise that both evidence and creative thinking contribute to the development of scientific ideas.</p> | <p>I can state the dependent, independent and control variables in my investigation.</p> <p>I can choose approaches to a range of tasks, including selecting sources of information and apparatus.</p> <p>I can select and use methods to obtain data systematically.</p> | <p>I can use line graphs to present data, interpret numerical data and draw conclusions from them.</p> <p>I can analyse findings to draw scientific conclusions that are consistent with the evidence.</p> | <p>I can communicate conclusions using scientific and mathematical conventions and terminology.</p> <p>I can convert between units i.e. m and km</p> <p>I can use simple equations to calculate unknown values I can calculate a mean</p> |
| 9.4 | <4 | <p>I can follow instructions and take action to control risks 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 series 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 decide on an appropriate approach, 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 begin to plot points to form simple graphs.</p> <p>I can begin to relate my conclusions to patterns in data, including graphs, and to scientific knowledge and understanding.</p> | <p>I can communicate my conclusions using appropriate scientific language.</p> <p>I can use a range of correct units for simple measurements</p> <p>I can use chemical symbols for elements and compounds</p> |