

Curriculum Aim – Combined Science

<p>Broad Intent:</p> <p>We aim to equip our scientists with a depth of understanding alongside this skill development, whilst igniting their natural curiosity. The JoG science curriculum will allow all pupils to obtain the knowledge and skills needed to help them think like a scientist, develop an understanding of scientific processes, and to understand the uses and implications of science today and for the future. We promote literacy and numeracy in all that we do encouraging students to “speak scientifically”. We intend to provide the pupils with both the skills and the belief that they can be successful in an ever increasing STEM world. We recognise that although factual science knowledge is important, what is truly crucial for our pupils is the grasp of underlying concepts, often called Science Models, and the development of Working Scientifically skills. These are what allow scientists to be creative, solve problems and see fundamental links between science phenomena. This approach to science promotes security, mastery and depth of learning.</p>	<p>KS3 aims:</p> <ul style="list-style-type: none">• To deliver an engaging curriculum which inspires students and promotes teaching for understanding• To develop an appreciation and understanding of the technical, social, moral and economic impact of science• To develop capable well-rounded literate, numerate and thoughtful scientists through a logical order of objectives using ‘big ideas’ and mastery goals to equip students for life and KS4• To provide pupils with the knowledge and skills within the 10 big ideas of forces, electromagnets, energy, waves, matter, reactions, earth, organisms, ecosystems and genes to be successful scientists• To develop the 4 key areas of scientific working Analyse (analyse patters, discuss limitations, draw conclusions and present data), Communicate (communicate ideas, construct explanations, critique claims, and justify opinions), Enquire (collect data, devise questions, plan variables and test hypotheses) and Solve (estimate risks, examine consequences, review theories and interrogate sources) <p>KS4 aims:</p> <ul style="list-style-type: none">• To enable each student the opportunity to study combined science or the separate sciences• To develop scientific thinking through understanding scientific theory and method over time, using modelling to solve problems, make predictions and to develop scientific explanations and understanding of familiar and unfamiliar facts• To appreciate the power and limitations of science and consider any ethical issues which may arise• To explain every day and technological applications of science; evaluate associated personal, social, economic and environmental implications; and make decisions based on the evaluation of evidence and arguments• To evaluate risks both in practical science and the wider societal context, including perception of risk in relation to data and consequences• To communicating the scientific rationale for investigations, methods used, findings and reasoned conclusions through paper-based and electronic reports and presentations using verbal, diagrammatic, graphical, numerical and symbolic forms• Plan experiments or devise procedures to make observations, produce or characterise a substance, test hypotheses, check data or explore phenomena
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