



Medium Term Planning - Topic: Physics HSW

Curriculum Intent	
Skills/National Curriculum Links	<p>In addition to working further on objectives from Year __, pupils will be taught, following National Curriculum guidelines, the following this topic:</p> <ul style="list-style-type: none">- How to draw a table- Use of error bars- Different types of errors- How to write a conclusion
Spiritual, moral, social, and cultural development	<p>SMSC: Safe working and using the forces model. The importance of maths/physics in real life. Students will reflect on their experiences and apply their understanding to a range of issues. Students will be encouraged to be reflective about their own beliefs and those of others and compare different people's faiths, feelings and values in order to develop their own perspective on life. Students will explore how Science influences the next stage of their education and/or employment.</p> <p>PSHE/British Values: learn about the application of maths into science</p> <p>Skills Builder: Listening (Receiving, retaining and processing info), Speaking (The oral transmission of info and ideas), Problem solving (Find a solution to a situation or challenge), Creativity (imagination and generation of new ideas), Staying positive (The ability to use tactics and strategies to overcome setbacks), aiming high (Set clear and tangible goals), Leadership and teamwork</p>
Numeracy	Use of tables, graphs, calculating, using formulae, errors, error bars
Literacy	<p>Vocabulary Tier 2: explain, describe, conclusion, effectiveness</p> <p>Vocabulary Tier 3: hazard, model, independent variable, dependent variable, control variable, discrete, continuous, accuracy, precision, reaction time, random error, zero error, systematic errors, uncertainty, thermal insulators</p> <p>Reading: Following a written method and read risk assessments. Students may be directed to the textbook; this could be in lesson or at home on Kerboodle.</p> <p>Writing: Describing and explaining scientific phenomenon, free response writing for describing precautions taken, use of word mat to promote sentence formation.</p> <p>Oracy: inclusion of BEST resources which are research evidence on common misunderstandings in science, effective diagnostic questioning and formative assessment, constructivist approaches to building understanding, and effective sequencing of key concepts that promote metacognitive talk and dialogue.</p>
Becoming future ready	<p>Careers/Employability:</p> <ul style="list-style-type: none">- Climate Scientist- Meteorologist- Environmental engineer Physicist- Astrophysicists
Adaptation	Throughout this topic, quality first teaching will provide differentiation:



QFT/SEND Provision	<p>By product: Linear assessments and differentiated practical work.</p> <p>By resource: Lessons are differentiated per class and students, worksheets are coloured to support and assessments are linear.</p> <p>By Intervention: by providing different levels of supervision and support</p> <p>By Progressive Questioning: exploring pupils' understanding through interactive dialogue.</p> <p>By Grouping: according to prior attainment, gender, social preference, preferred learning style.</p> <p>By Task: Pupils should be involved in the identification of targets which are meaningful to them and in the selection of an appropriate task from the given range.</p> <p>By Offering Optional Activities: In class or as homework, to extend learning.</p> <p>This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work.</p>	
Implementation Curriculum Delivery	To be able to: <i>Explain the scientific model</i> <i>Identify risks and hazards</i> <i>Identify independent, dependent and control variables.</i>	
Learning Outcomes (Core Knowledge)	<i>I know and can identify discrete and continuous variables.</i> <i>I know the main points to include on a table.</i> <i>I can describe accuracy and precision.</i> <i>I know my reaction time.</i>	
	<i>Complete the reaction time calculations.</i> <i>Know and explain random, zero and systematic errors.</i> <i>Know how to calculate uncertainty errors.</i>	
	<i>Know how to test the Effectiveness of Different Materials as Thermal Insulators</i> <i>Describe the results and conclusions.</i> <i>Be able to discuss the possible errors.</i>	
	<i>Know how to investigate Reflection of light from a plane mirror</i> <i>Describe the results and conclusions.</i> <i>Be able to discuss the possible errors.</i>	
Current learning to be developed in the future within:	<p>Before:</p> <p><i>How science works / working scientifically / the scientific method, whatever you call it our KS3 students have had a steady diet of hsw from topic one. This final physic topic will ensure that all students are fluent with these very important concepts.</i></p>	<p>Future:</p> <p>Separate coursework was taken out of the GCSE in the changes of the last specification. The coursework element is now incorporated into the written questions. Variables such as independent, dependent and control are learned about and different types of data like discrete and continuous. Whilst the majority of the examples and practical activities are physics based, all of this topic (errors and variables) are applicable to all three sciences.</p>
Assessment	Refer to assessment maps for formative and summative assessment opportunities.	
Impact	Attainment and Progress – Refer to assessment results / data review documentation.	