



'An ambitious curriculum that meets the needs of all'

Medium Term Planning - Topic: Universe

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> <p>Space</p> <ul style="list-style-type: none">• Our Sun as a star, other stars in our galaxy, other galaxies• The seasons and the Earth's tilt, day length at different times of year, in different hemispheres
Spiritual, moral, social, and cultural development	<p>SMSC: This unit of work provides several opportunities for students to work together practically in groups, which encourages them to share views and opinions and take instructions from others. Group work opportunities encourage teamwork and respect for others. In practical lessons students follow laboratory rules for the safety of all.</p> <p>PSHE/British Values: The impact of the change in the atmosphere is affecting resources, wildlife and is a huge issue around the world. Students will complete teamwork, leadership and put science into everyday situations. They will show mutual respect during classwork.</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	<p>Lots of opportunity to work with large numbers e.g., How many millimetres are in 1 kilometre?</p> <p>Tilt of the Earth on its axis are discussed.</p> <p>Lightyears and speed of light.</p>
Literacy	<p>Vocabulary Tier 2: describe, international, distances, measuring, inner, diameter, opposite, wander, observation, explain, phenomena, tilt, phase, appearance, pillars, evidence, complicated, appear (appear to move).</p> <p>Vocabulary Tier 3: artificial satellite, orbit, Earth, Moon, natural satellite, planet, Sun, Solar System, star, galaxy, Milky Way, exoplanet, Universe, light year, asteroid, dwarf planet, axis, day, night, year, season, constellation, phases of the moon, geocentric model, heliocentric model.</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. Comprehension activities.</p> <p>Writing: Describing and explaining scientific phenomenon, free response writing for describing precautions taken. Use of word mat to promote sentence formation. Converting diagrams into text.</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> <p>Astrologist</p> <p>aerospace engineer,</p> <p>Analyst</p> <p>Astronomer</p> <p>Astrophysicist</p> <p>Climatologist</p>
Adaptation	<p>Throughout this topic, quality first teaching will provide differentiation:</p>



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 blue if st 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	<p>To be able to:</p> <p>Securing Mastery Goals</p> <ul style="list-style-type: none">● 3.7.2 Describe how space exploration and observations of stars are affected by the scale of the universe.● 3.7.2 Explain the choice of particular units for measuring distance. <p>Enquiry processes</p> <ul style="list-style-type: none">● 2.15 Understand the role of a theory in science. <p>Securing Mastery Goals</p> <ul style="list-style-type: none">● 3.7.2 Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun.● 3.7.2 Describe how space exploration and observations of stars are affected by the scale of the universe. <p>Exceeding Mastery Goals</p> <ul style="list-style-type: none">● 3.7.2 Make deductions from observation data of planets, stars and galaxies. <p>Enquiry processes</p> <ul style="list-style-type: none">● 2.1 Identify patterns in data.● 2.3 Make a conclusion and explain it.● 2.6 Develop an explanation.● 2.6 Communicate your idea, evidence and reasoning. <p>Securing Mastery Goals</p> <ul style="list-style-type: none">● 3.7.2 Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year. <p>Exceeding Mastery Goals</p> <ul style="list-style-type: none">● 3.7.1 Predict patterns in day length, the Sun's intensity or an object's shadow at different latitudes. <p>Enquiry processes</p> <ul style="list-style-type: none">● 2.1 Identify patterns in data.● 2.3 Make a conclusion and explain it. <p>Enquiry processes activity</p> <ul style="list-style-type: none">● 3.7.2 Relate observations of changing day length to an appropriate model of the solar system. <p>Securing Mastery Goals</p> <ul style="list-style-type: none">● 3.7.2 Describe the appearance of moons from diagrams showing their position in relation to the Earth and Sun. <p>Exceeding Mastery Goals</p> <ul style="list-style-type: none">● 3.7.2 Compare explanations from different periods in history about the motion of objects and structure of the Universe. <p>Enquiry processes</p> <ul style="list-style-type: none">● 2.1 Identify patterns in data.● 2.3 Make a conclusion and explain it.● 2.15 Understand the role of a theory in science.● 2.15 Understand how scientific ideas have changed. <p>Red denotes interleaving; aspects of knowledge covered previously.</p>
Current learning to be developed in the future within:	<p>At GCSE physics you learn in more detail about structure of the Earth, our Solar System, the life cycle of stars and the Red Shift. In GCSE chemistry you will also cover in more detail how the Earth's atmosphere has changed and consequences of global warming.</p>
Assessment	<p>Refer to assessment maps for formative and summative assessment opportunities.</p>
Impact	<p>Attainment and Progress – Refer to assessment results / data review documentation.</p>