



Science

Key Stage 3 Framework for Learning

Year 7 2017-2018: Future Foundations


First 2 weeks

Knowledge	<p>Cosmic</p> <p>Command words Repeats, means, anomalies, accuracy, errors. Variables and methods. Graphs. Sample size (range, intervals and scale) Control groups.</p>
Skills	<p>Command words How Science Works (HSW) key terms Repeats Means Anomalies Errors Accuracy Resolution Range Interval Scale Variables Graphs plotting Graphs analysis</p>
Assessment	<p>Marking Point 1 Graph skills Marking Point 2 Methods and variables Marking Point 3 MCT</p>
Cultural enrichment	<p>Apollo 13</p> <p>Task Write an extended piece of writing (with 5 paragraphs) about the film. This will need to be between one and two pages. writing.</p> <p>Main objective is to identify the times at which the astronauts use / show / need the CHS qualities of Success.</p>
Character	

Autumn 1

Knowledge	<p>Cosmic</p> <p>Command words Repeats, means, anomalies, accuracy, errors. Variables and methods. Graphs. Sample size (range, intervals and scale) Control groups.</p>
Skills	<p>General skills Command words How Science Works (HSW) key terms Repeats Means</p>



	<p>Anomalies Errors Accuracy Resolution Range Interval Scale Variables Graphs plotting Graphs analysis</p>
Assessment	<p>Marking Point 1 Graph skills Marking Point 2 Methods and variables Marking Point 3 MCT</p>
Cultural enrichment	<p>Apollo 13 Task Write an extended piece of writing (with 5 paragraphs) about the film. This will need to be between one and two pages. writing. Main objective is to identify the times at which the astronauts use / show / need the CHS qualities of Success.</p>
Character	<p></p> <p>QoS – Optimism</p> <p>The cosmic topic will introduce students to Science at CHS and allow them to hone their fundamental Science skills from KS2 and build on these. Students will develop optimism when planning their flight path and reflecting on their KS2 outcome and their new target grade. Additionally, when discussing topics such as space travel for the future students will develop their optimism for the future society.</p>

Autumn 2

Knowledge	<p>Cells and reproduction</p> <p>Menstrual cycle Cells Reproductive system Fertilisation</p>
Skills	<p>Command words Students will learn the command words explicitly and then be given opportunity to identify which command words should be used and answer questions which use the specific command words. Describe Explain Compare Contrast Evaluate</p>
Assessment	<p>Marking Point 1 Apollo 13 cultural capital video homework Marking Point 2 Journey of a sperm Marking Point 3 Progress test</p>
Cultural enrichment	<p>Essay Homework BBC – The Human Body. Video homework on birth / fertilisation Students should write about the complications that surround fertilisation and birth and how modern medicine has overcome these issues.</p>




<p>Character</p>	<div data-bbox="379 293 456 376" data-label="Image"></div> <p>QofS – Empathy</p> <p>Students will be taught in form groups which will create a team ethos. Their learning of IVF and fertility treatment, puberty, and multiple births will enable students to develop their empathy particularly during group tasks and discussions around these topics. Following feedback from their “Progress test” students will gain experience of empathising with their peers.</p>
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Spring 1

<p>Knowledge</p>	<p>Atoms and Elements</p> <p>Elements Periodic table Periodic table quiz</p> <p>Chemical reactions Compounds Bonding</p> <p>Reactivity Reactivity Investigation Reactivity Inv. write up</p> <p>The atom Energy in reactions Conservation of mass</p>
<p>Skills</p>	<p>Writing a Scientific report</p> <p>Students will learn how to write a scientific report that should include</p> <p>Equipment Method Variables (IV, DV, CV) Diagrams Results Graphs Conclusions</p>
<p>Assessment</p>	<p>Marking Point 1 <i>Reactivity Inv. write up</i></p> <p>Marking Point 2 <i>Conservation of mass letter</i></p> <p>Marking Point 3 <i>MCT</i></p>
<p>Cultural enrichment</p>	<p>CSI</p> <p>Students will compare the way crime Scenes are investigated in real life and in the movies. They will describe the modern techniques used to identify criminals.</p>
<p>Character</p>	<div data-bbox="384 1688 462 1771" data-label="Image"></div> <div data-bbox="502 1688 580 1771" data-label="Image"></div> <p>QofS – Creativity & Curiosity</p> <p>Students will experiment with a variety of experiments during the Atoms and Elements topic and be encouraged to make predictions and show curiosity about their results. Whilst learning how to write a scientific report and during their homework task students will have an opportunity to think creatively.</p>

Spring 2




Knowledge	Electricity & Magnetism Circuits Conductors and insulators Measuring current Voltage Magnetism Electromagnetism Generating electricity Power stations National Grid
Skills	Presentation and RWCN skills Students will learn to present information in a variety of formats, Students will develop team building, independence and RWCN skills Students will learn how to write a scientific report that should include Equipment. Method. Variables (IV, DV, CV). Diagrams. Results. Graphs. Conclusions.
Assessment	Marking Point 1 <i>Voltage and current assessment</i> Marking Point 2 <i>Electromagnets 'write up'</i> Marking Point 3 <i>Progress test</i>
Cultural enrichment	Climate change Students will watch a documentary looking at the predictions for climate change if man does not reduce CO2 emissions. They are assessed on their opinions of the future of climate change and what actions should be taken.
Character	 QoS – Responsibility & Reflection Whilst contributing to a group practical students will be expected to show high levels of responsibility and independence. They will reflect on the work that they do in the topic and look to improve on this. Students will also reflect on societies use of fossil fuels and carbon dioxide emissions.


Summer 1

Knowledge	Matter and Space States of matter Conservation of matter Stearic acid Conduction Convection Radiation Gravity and air resistance A trip to Mars Design, build and test landers
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Skills	<p>Using and Interpreting Data. Students will learn how to use and apply key terminology and data such as Repeats Reliability Reproducibility Mean Error Accuracy Resolution</p>
Assessment	<p>Marking Point 1 <i>Gravity and air resistance write up</i> Marking Point 2 <i>Explaining evaporation and condensation</i> Marking Point 3 MCT</p>
Cultural enrichment	<p>Forces in Nature – Brian Cox documentary Students should write about the effects of gravity. Explaining why gravity exists and the effect size/mass has on the force of gravity.</p>
Character	<div style="text-align: center;">  </div> <p>QoS – Practice & Resiliency</p> <p>Students will practice their understanding of key scientific skills and apply this to exam style questions. This will be a key focus this half term as students are introduced to analysing tabulated data. Three assessment points through the term will enable students to be resilient when acting on their feedback by practicing their skills as they prepare for their final “Progress test”</p>
Summer 2	
Knowledge	<p>Plants</p> <p>Photosynthesis Testing leaves for starch Food chains Food webs Insect pollination Bee aware Bee movie Observing plant growth Leaf structure Seed dispersal Seed dispersal write up Stomata Observing plant growth</p>
Skills	<p>Control groups Sample Size Students will learn why control groups are used to reduce bias and increase validity of scientific testing. Students will learn the importance of sample size and the range of possibilities in that sample. e.g. age, diet, gender.</p>
Assessment	<p>Marking Point 1 Marking Point 2 BEE movie cultural capital Marking Point 3 Progress test</p>
Cultural enrichment	<p>Essay homework -Bee movie. Students should research the positive effects bees have on the reproduction of plants. Students should also include research / statistics about the effects of decreasing Bee populations. Students will also have the opportunity to design and carry out their own ecology project to support/implement “Save the Bees” initiatives.</p>



Character	 <p>QofS – Motivation</p> <p>Students will need to be motivated to revise for their “Progress Test”. Students will be given advice on how to revise and be encouraged to use Personal Learning Checklists to support their revision. For their home learning this half term students will be encouraged to be motivated to design and carry out a “Save the Bees” project.</p>
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