





## Science

### Key Stage 3 Framework for Learning

#### Year 8 2017-2018: Creative Foundations


### Autumn 1

<p><b>Knowledge</b></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 History of the atom Development of the current atomic model</p>
<p><b>Skills</b></p>	<p><b>Writing a Scientific report</b> Students will learn how to write a scientific report that should include Equipment. Method. Variables (IV,DV,CV). Diagrams. Results. Graphs. Conclusions.</p>
<p><b>Assessment</b></p>	<p><b>Marking Point 1</b> <i>Reactivity Inv. write up</i> <b>Marking Point 2</b> <i>Conservation of mass letter</i> <b>Marking Point 3</b> <i>MCT</i></p>
<p><b>Cultural enrichment</b></p>	<p>CSI 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><b>Character</b></p>	<p> </p> <p>QofS – Creativity &amp; 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>

### Autumn 2

<p><b>Knowledge</b></p>	<p>Health and Nutrition</p> <p>Diet.</p>
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	<p>Diabetes. Homeostasis.</p> <p>Digestive system. Modelling the journey of food. Digestive system big write.</p> <p>Respiratory system Gas exchange Respiratory BIG write Effects of cannabis Impact of exercise Impact of exercise BIG write</p>
<b>Skills</b>	<p><b>Presentation and RWCN skills</b></p> <p>Evaluating Communication Practical skills involving accuracy, equipment, observations Letter writing Persuasive writing Percentage components / RDA</p>
<b>Assessment</b>	<p><b>Marking Point 1</b> <b>Diabetes evaluation</b> <b>Marking Point 2</b> <b>Cultural Capital video on healthy eating and diet. Evaluating the diet of different groups</b> <b>Marking Point 3</b> <b>Progress test</b></p>
<b>Cultural enrichment</b>	<p>PRADER – WILLI My child can't stop eating' Evaluate the impact on the lives and families of those that have sufferers within their families.</p>
<b>Character</b>	<p> Empathy</p> <p>QoS – Empathy</p> <p>Whilst planning and delivering group presentations students will be expected to show high levels of creativity and independence. 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. Students will have an opportunity to create a meal plan for various celebrity profiles and find a creative solution to encouraging healthy eating in school.</p>



## Spring 1

<b>Knowledge</b>	<p>Microbes</p> <p><u>Disease</u> Bacterial disease Viral disease Fungal disease Bacterial numeracy Malaria</p> <p><u>Transmission and defence</u> Spreading microbes Human defence system Defence</p> <p><u>Vaccination</u> Vaccination MMR MMR persuasive writing Antibiotics and pain killers MRSA</p>
<b>Skills</b>	<b>Command words</b>





	<p>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.</p> <p>Describe Explain Compare Contrast Evaluate</p>
<b>Assessment</b>	<p><b>Marking Point 1</b> <b>Bacterial numeracy booklet</b></p> <p><b>Marking Point 2</b> <b>MMR persuasive writing task</b></p> <p><b>Marking Point 3</b> <b>MCT</b></p>
<b>Cultural enrichment</b>	<p>Pain, Puss and Poison – PAIN</p> <p>Evaluate the development of medicines over time.</p>
<b>Character</b>	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>QoS – Creativity &amp; Curiosity</p> <p>Students will practise their understanding of key scientific skills and apply their knowledge and understanding of command words to exam style questions. This will be a key focus this half term as students are consolidating their application of scientific command words. Three assessment points through the term will enable students to be resilient when acting on their feedback by acknowledging which command words they need to gain further exam practice experience.</p>
<b>Spring 2</b>	
<b>Knowledge</b>	<p>Energy transfer</p> <p>Waves Wave equations Transverse and longitudinal waves Reflection Refraction Dispersion Sound Transfer of sound through matter Structure of the Ear</p>
<b>Skills</b>	<p><b>Using and Interpreting Data.</b></p> <p>Students will learn how to use and apply key terminology and data such as</p> <p>Repeats Reliability Reproducibility Mean Error Accuracy Resolution</p>
<b>Assessment</b>	<p><b>Marking Point 1</b> <b>Waves assessment</b></p> <p><b>Marking Point 2</b> <b>Light and sound assessment</b></p> <p><b>Marking Point 3</b> <b>Progress test</b></p>
<b>Cultural enrichment</b>	<p>The impossible</p> <p>Students should write about the moral dilemmas communities face during natural disasters. Is it right to be selfish in uncertain times? Or should we try to put the good of the many before the good of the few?</p>



<p><b>Character</b></p>	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Responsibility      Reflection</p> <p>QofS – Responsibility &amp; Reflection</p> <p>Students will study the structure of the ear and hearing, they will develop an appreciation of what it is like not to have perfect hearing and how their world would be affected.</p>
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## Summer 1

<p><b>Knowledge</b></p>	<p>Genes and Evolution</p> <p>Variation The structure of DNA Genes, chromosomes and the nucleus Cloning in plants and animals Selective breeding Natural selection Evolution Extinction Conservation</p>
<p><b>Skills</b></p>	<p><b>Control groups Sample Size</b> 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>
<p><b>Assessment</b></p>	<p><b>Marking Point 1</b> <i>Assessment and examination questions on evolution</i> <b>Marking Point 2</b> <i>Leaflet on extinction of elements</i> <b>Marking Point 3</b> <b>MCT</b></p>
<p><b>Cultural enrichment</b></p>	<p>Jurassic Park Students should research evolution of dinosaurs. They should include information about fossil records, natural selection, predator / prey relationships and extinction.</p>
<p><b>Character</b></p>	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Practice      Resiliency</p> <p>QofS – Practice &amp; Resiliency</p> <p>Students will be expected to show high levels of responsibility and independence whilst preparing 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 set an extended writing task based on the film Jurassic Park where students must ensure they take responsibility to include key aspects of their half term classroom learning and relate it to aspects in the film.</p>

## Summer 2

<p><b>Knowledge</b></p>	<p>Motion and Forces</p> <p>Newton meters Hookes Law Calculating speed Distance time graphs Speed and velocity – numeracy GPE and KE GPE and KE presentation Rollercoaster BIG WRITE</p>
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<b>Skills</b>	<b>Using and Interpreting Data.</b> Students will learn how to use and apply key terminology and data such as Repeats Reliability Reproducibility Mean Error Accuracy Resolution
<b>Assessment</b>	<b>Marking Point 1</b> <i>Speed and velocity numeracy task</i> <b>Marking Point 2</b> <i>Hooke's Law write up</i> <b>Marking Point 3</b> <i>Progress test</i>
<b>Cultural enrichment</b>	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.
<b>Character</b>	 QofS – Motivation  Group work will take a primary focus in this half term as students collaborate to investigate a variety of Physics investigations. Students will be encouraged to be motivated to achieve their best in summer progress tests. Students will be required to creatively manage their own time to prepare fully for their summer examinations.