



Science

Key Stage 3 Framework for Learning

Year 8 2016-2017: Creative Foundations

Autumn 1

Knowledge	Atoms and Elements Structure and history of the periodic table Elements Compounds Mixtures Chemical reactions Chemical equations Displacement Exothermic and endothermic
Skills	Writing a Scientific report Students will learn how to write a scientific report that should include: <ul style="list-style-type: none"> • Equipment. • Method. • Variables (IV,DV,CV). • Diagrams. • Results. • Graphs. • Conclusions
Assessment	Students will be assessed on their use of the above skills this half term. Assessment will be in exercise books via teacher marking.
Reward & enrichment	Essay Homework - Chemistry: a volatile history? (discovering elements)
Character	QofS – Curiosity CV – Self-Help & Self Responsibility Students will experiment with a variety of experiments during the Forensics 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.



Autumn 2

Knowledge	Health and Nutrition Healthy diet Energy content Calculating energy content Energy in food investigation The digestive system Breathing and lung structure Respiration (anaerobic and aerobic) Effects of exercise on the body Drugs
Skills	Presentation and RWCN skills Calculating energy Looking at percentages and nutrition content in foods Evaluating Communication Practical skills involving accuracy, equipment, observations
Assessment	<i>Assessment this term will be an examination that combines the topics that students have studied this term</i> Atoms and Elements Health and Nutrition
Reward & enrichment	Essay Homework – American Drug war: The last white hope. Students should review the way we look at drugs in society and write an informed article about the effects of drug enforcement.
Character	QofS – Creativity & Motivation CV –Solidarity & Social Responsibility 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 “Big 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.

Spring 1

Knowledge	<p>Microbes and Disease</p> <ul style="list-style-type: none"> Viruses Bacteria Fungi Description of microbial growth Types of microbial infection How infection spreads Bacterial division Edward Jenner Vaccination MMR Antibiotics Penicillin Antibiotic Resistance
Skills	<p>Command words</p> <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> <ul style="list-style-type: none"> Describe Explain Compare Contrast Evaluate
Assessment	<i>Students will be assessed on their use of the above skills this half term. Assessment will be in exercise books via teacher marking.</i>
Reward & enrichment	<p>Essay Homework – Resistance</p> <p>Pupils will watch a documentary about how microbes are becoming resistant to antibiotics. They will write an essay about the issues which surround resistance and describe the consequences of bacterial resistance in the future.</p>
Character	<p>QofS – Resiliency & Practice</p> <p>CV – Equality & Equity</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>



Spring 2

Knowledge	<p>Transfer of Energy</p> <ul style="list-style-type: none"> Waves Wave equations Transverse and longitudinal waves Reflection Refraction Dispersion Sound Transfer of sound through matter Structure of the Ear
Skills	<p>Using and Interpreting Data.</p> <p>Students will learn how to use and apply key terminology and data such as</p> <ul style="list-style-type: none"> Repeats Reliability Reproducibility Mean Error Accuracy Resolution
Assessment	<p>Assessment this term will be an examination that combines the topics that students have studied this term</p> <ul style="list-style-type: none"> Microbes and Disease Transfer of Energy
Reward & enrichment	<p>Essay homework - The impossible</p> <p>Students should write about the moral dilemmas communities face during natural disasters.</p>



	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?
Character	<p>QoFS – Optimism & Empathy CV – Openness & Honesty</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 “Big Test” students will gain experience of empathising with their peers.</p> 

Summer 1

Knowledge	<p>Electricity and Magnetism</p> <p>Magnets Magnetic fields Electromagnets Circuits Simple circuits Diagrams Voltage Current Series circuits Parallel circuits Resistance of a wire</p>
Skills	<p>Graphs</p> <p>Students will learn how to plot a variety of graphs including</p> <ul style="list-style-type: none"> • Bar Chart • Pie Chart • Line Graphs <p>Students will learn why a particular type of graph / chart is chosen to present and analyse a particular type of data. How to analyse graphs.</p>
Assessment	Students will be assessed on their use of the above skills this half term. Assessment will be in exercise books via teacher marking.
Reward & enrichment	<p>Essay homework – Shock and awe, the story of electricity.</p> <p>Students should write about how one simple physical concept has changed the lives of so many. They should include information about the benefits of technology and where technology might be in 50 years. Students should also write about how life might be without electricity.</p>
Character	<p>QoFS – Reflection CV – Caring for Others & Self-Help</p> <p>Whilst contributing to group practicals students will be expected to show high levels of responsibility and independence. Students will reflect on the evolution and extinction of Dinosaurs in their home learning task and link this to their classroom experiences. Scientists in their homework task and be encouraged to reflect on their current progress following “Big Test” assessments and homework feedback. Pupil will update their flight paths and set themselves targets to improve.</p> 

Summer 2

Knowledge	<p>Genetics 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>
Skills	<p>Control groups Sample Size</p> <p>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	Assessment this term will be an examination that combines the topics that students have studied this term Electricity and Magnetism Genetics and Evolution
Reward & enrichment	<p>Essay homework – Jurassic Park</p> <p>Students should research evolution of dinosaurs. They should include information about fossil records, natural selection, predator / prey relationships and extinction.</p>
Character	QoFS – Responsibility



CV – Democracy

Students will be expected to show high levels of responsibility and independence whilst preparing for their “Big 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.

