



Science

Key Stage 3 Framework for Learning

Year 7 2016-2017: Future Foundations

First 2 weeks

Knowledge	Cosmic
Skills	General skills Command words How Science Works (HSW) key terms Repeats Means Anomalies Errors Accuracy Resolution Range Interval Scale Variables Graphs plotting Graphs analysis
Assessment	
Reward & enrichment	
Character	

Autumn 1

Knowledge	Skills Command words Repeats, means, anomalies, accuracy, errors. Variables and methods. Graphs Sample size (range, intervals and scale) Control groups
Skills	General skills Command words How Science Works (HSW) key terms Repeats Means Anomalies Errors Accuracy Resolution Range Interval Scale Variables Graphs plotting Graphs analysis
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 - Apollo 13. Students should write about the benefits and dangers associated with space travel. This should include research about a specific space mission. E.g. Apollo 13, where the mission nearly ended in fatalities for the Astronauts.
Character	QoFS – Optimism CV – Democracy 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.





Autumn 2

Knowledge	Cells and Reproduction Cell Structure Microscopes Specialised cells Reproductive systems Fertilization Menstrual cycle
Skills	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
Assessment	Assessment this term will be an examination that combines the topics that students have studied this term: Cosmic Skills Cells and reproduction
Reward & enrichment	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.
Character	QofS – Empathy CV – Solidarity, Caring for Others, Equality, Equity 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.


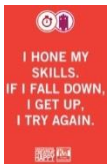


Spring 1

Knowledge	Forensics Separating techniques Chromatography Distillation Filtration And other methods of separation Acids and Bases pH Factors affecting reaction rates
Skills	Writing a Scientific report Students will learn how to write a scientific report that should include 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 and enrichment	Essay Homework – 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
Character	QofS – Creativity & Curiosity CV – Openness 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.





Spring 2	
Knowledge	Generating electricity, energy and motion Generating electricity Renewable and non-renewable power Energy transfer Sankey diagrams Gravitational and kinetic energy Conservation of energy Speed, velocity and distance/time graphs
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.
Assessment	Assessment this term will be an examination that combines the topics that students have studied this term: Forensics Generating Electricity Energy and Motion
Reward and enrichment	Essay Homework - On the genius of power. Students should research a famous scientist of their choice. They will be shown examples such as Thomas Edison who invented the light bulb and Michael Faraday who discovered magnetic induction
Character	QofS – Responsibility & Reflection CV – Honesty & Social Responsibility Whilst planning and delivering group presentations students will be expected to show high levels of responsibility and independence. Students will reflect on the historic work of 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. <div style="float: right; text-align: right;">  </div>
Summer 1	
Knowledge	Matter and Forces States of matter Density Conservation of mass State changes Evaporation Condensation Forces Gravity Air resistance Making a newton meter Hooke’s law
Skills	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
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 and enrichment	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.
Character	QofS – Practice & Resiliency CV – Self-Help 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 “Big Test”. <div style="float: right; text-align: right;">  </div>



Summer 2

Knowledge	Plants and Interdependence Plants structure Photosynthesis Pollination Directional growth in cress Food chains Food webs Adaptation Investigating starch in a leaf Sampling techniques
Skills	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
Assessment	Assessment this term will be an examination that combines the topics that students have studied this term: Matter and forces Plants and Interdependence
Reward and enrichment	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.
Character	QofS – Motivation CV – Self-Responsibility 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. For their home learning this half term students will be encouraged to be motivated to design and carry out a "Save the Bees" project.

