Curriculum Overview

Subject: Science

Year Group: 8

CHASE HIGH
Aspirations, Character & Excellence

Students are introduced to the importance of Science in the world around them. Students will develop the powerful knowledge needed to go beyond the common understanding of science to a deeper, more rounded world view. With a focus on key concepts, apparatus and techniques students will develop the subject disciplinary knowledge needed to think, write, communicate and relate scientific ideas to the wider world. Students will follow the national curriculum and have opportunities to undertake open ended investigations in term 2 developing analytical and rational thought processes.

TERM 1	TERM 2	TERM 3
KNOWLEDGE/SKILLS **Biology:** Plants, photosynthesis, stomata, food webs, insects, toxins in environment, interdependence, variation, selective breeding, genetics. **Chemistry:** Acids, alkalis, indicators, neutralisation, salts, combustion, acid rain. **Physics:** Distance-time graph, relative motion, equilibrium, Solar system, stars, galaxies, Earth motion. Skills: • Development of scientific thinking (modelling). • Experimental skill and strategies (risks and variables) • Analysis and evaluation (graphing) • Use of scientific vocabulary, units and symbols.	KNOWLEDGE/SKILLS **Biology:** Drugs, diseases (causes and prevention), investigating bacteria, DNA, cloning, extinction. **Chemistry:** Atmosphere, global warming, recycling carbon, metals from ores, reactivity series, displacement reactions, recycling, rocks, rock cycle. **Physics:** n/a Skills: • Development of scientific thinking (modelling). • Experimental skill and strategies (risks and variables) • Analysis and evaluation (graphing) • Use of scientific vocabulary, units and symbols.	KNOWLEDGE/SKILLS **Biology:** n/a **Chemistry:** Exothermic and endothermic reactions, catalysts, ceramics, natural and human made polymers, composites. **Physics:** Earths' magnetic field, electromagnets, D.C motors, batteries, series and parallel circuits, resistance. Skills: • Development of scientific thinking (modelling). • Experimental skill and strategies (risks and variables) • Analysis and evaluation (graphing) • Use of scientific vocabulary, units and symbols.
KEY ASSESSMENTS Half term 1: Farming and food webs LWQ, Ecology test Half term 2: Antacid LWQ, variation and data LWQ	KEY ASSESSMENTS Half term 1: Our Health and the effect of drugs test, Using our Earth sustainably LWQ Half term 2: Extracting metals LWQ, Obtaining useful materials test	KEY ASSESSMENTS Half term 1: Using our Earth sustainably test, Investigating batteries LWQ Half term 2: Waves LWQ, Waves and energy transfer test

Extended reading suggestions and external resources:
KS3 Bitesize Science https://www.bbc.co.uk/bitesize/subjects/zng4d2p
Oak National Academy Lessons https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science
Chase High Youtube Playlists https://www.youtube.com/channel/UCSK4ImJfi5sPH4UBp7cZtyQ
We actively encourage students to read and research about the wider Scientific word- Planet Earth and Perfect Planet both on BBC iPlayer are examples of where students can engage with Science from the safety and comfort of their own homes.

Science Year 8 Assessment Criteria

	Bronze (CuSn) 	Silver (Ag) 	Gold (Au) 	Platinum (Pt) 
Development of Scientific thinking (modelling)	I can identify some human activities that impact the environment. **I can state one advantage or disadvantage of science in society.**	I can identify a variety of human activities and describe the impact it has on the environment. **I can state one advantage AND one disadvantage of science in society.**	I can describe the effects human activity has on the environment and suggest ways in which we can reduce the impact. **I can describe the advantages and disadvantages of science in society and make a link between them.**	I can evaluate the impact human activity has had on the environment and use data to support answer. **I can describe the advantages and disadvantages of science in society and make multiple links between them.**
Experimental skills and strategies (Risk and variables)	I can write a basic hypothesis with assistance. **I can select an appropriate technique for a particular process with assistance.**	I can write a basic hypothesis unaided. **I can select an appropriate technique for a particular process without assistance.**	I can write a hypothesis to explain given observations. **I can select an appropriate technique for a particular process without assistance and justify my reasoning.**	I can write a hypothesis to explain given observations and data. **I can describe a variety of techniques for a range of processes.**
Analysis and evaluation (graphing)	I can make a prediction based on given data with assistance. **I can identify the patterns in data with scaffolding.**	I can make a prediction based on given data independently. **I can identify patterns in data and any anomalies.**	I can recognise patterns/trends in data and relate that to a prediction in a conclusion. **I can suggest ways in which to increase the accuracy of data.**	I can use data in multiple forms to suggest whether a prediction is supported and discuss the scientific theory behind it. **I can suggest ways in which to increase the accuracy and reliabilty of data.**
Use of Scientific vocabulary, units and symbols	I can interconvert some units with assistance. **I can use a given equation.**	I can interconvert most units without assistance. **I can select the correct equation to use.**	I can interconvert units to simple orders of magnitude (e.g. 1mm = 10^{-3}m). **I can recall the correct equation to use.**	I can interconvert units to more complex orders of magnitude (e.g. 1 micro metre into 1000mm). **I can re-arrange equations.**