Curriculum Content Map

Subject: Science

Year group: 8

	TERM 1		TERM 2		TERM 3	
Unit title & description	7C Muscles & Bones 8A Food & Nutrition	8E Combustion 8F Periodic Table	7K Forces 8I Fluids	7D Ecosystems 8B Plants & Reproduction	8G Metals & Their Uses 8H Rocks	Practical Investigation
Sequencing – why is this taught, why now?	• These topics build on organs systems from in Y7 by exploring the muscular skeletal and digestive system. Students will develop a key understanding of each of these systems to enable extension to features of muscle cells and enzymes at GCSE	• These topics build on atoms, elements and compounds, acids and alkalis and energy from Y7. Students will learn the key requirements for combustion and how combustion leads to pollution and global warming. • Studying the periodic table allows students to understand how scientific ideas develop, trends between different elements and prepare for writing chemical equations	• Studying forces will build on knowledge from KS2 Y5&6) and prepare students for more complex forces calculations in Y9. • Fluids then links Forces together with the Y7 chemistry topic of the particle model	• Ecosystems builds on the physics topic of energy from Y7, viewing it in a biological context. Plants and reproduction then builds on this linking it to the Y7 biology topic of sexual reproduction	• Metals and Uses links together information from Y7 and Y8 chemistry topics (Acids, Particle, Atoms, Combustion and the Periodic Table). Rocks then examines rock formation and leads on to link how metals are extracted from their ores	• Builds on their practical skills and extends their capabilities to be able to plan, execute and evaluate an experiment over a sequence of lessons. • Preparation for further practicals in year 9 and GCSE.
Knowledge	• Muscles & breathing including gas exchange • Muscles & blood (circulatory system) • The skeleton (bones and joints) • Muscles & moving (nervous system, antagonistic pairs) • Drugs • Nutrients including food tests • Uses of nutrients • Balanced diet including deficiency diseases • Digestion – organs and enzymes • Absorption – diffusion, adaptation of cells, blood	• Conservation of mass • Use word equations • Combustion, fuels • Air pollution • Global warming • Oxidation • Fire safety • Atomic models • Chemical properties and formulae • Periodic table – development and trends • Metals & non-metals	• Contact and non-contact forces • Force diagrams • Balanced forces • Resultant forces • Springs • Mass and weight • Friction • Particle model (SLG) • Density (inc. calcs) • Changing state • Pressure in fluids • Floating and sinking • Drag	• Variation, adaptation and competition • Interdependence • Predators and prey • Food webs • Pyramids of biomass and toxins • Sampling • Classification & biodiversity • Reproduction in flowering plants • Photosynthesis & growth	• Properties of metals • Reactions of metals • Symbol equations • Pure metals & alloys • Oxidation • Reactivity series • Different types of rocks • Igneous, metamorphic & sedimentary rocks • Weathering & erosion • Mining & ores	• The amount of carbonate in an ore sample can be measured by adding hydrochloric acid to the sample until it stops fizzing • Planning an experiment using external resources • Writing a method • Carrying out an experiment • Recording data • Drawing a graph • Analysing and interpreting results
Skills	• 7C Scientific Questions • 8A Surface Area	• 8E Fair Testing • 8F Anomalous Results	• 7K SI Units • 8I Calculations with density	• 7D Charts & Graphs • 8B Accuracy & Estimates	• 8G Quality Evidence • 8H Theories in Geology	• Practical skills, planning an investigation • Applying knowledge to real-world contexts • Evaluating methods • Data processing
Retrieval practice – prior knowledge and skills that are revisited	• Knowledge tests • Quick quizzes • DO Now recall tasks 3 part homework	• Knowledge tests • Quick quizzes • DO Now recall tasks • 3 part homework	• Knowledge tests • Quick quizzes • DO Now recall tasks • 3 part homework	• Knowledge tests • Quick quizzes • DO Now recall tasks • 3 part homework	• Knowledge tests • Quick quizzes • DO Now recall tasks • 3 part homework	• Knowledge tests • Quick quizzes • DO Now recall tasks • 3 part homework
Literacy including extended writing	• Learn key vocabulary including exposure to Tier 2 language • Extended answer questions relating to drugs / deficiency diseases	• Learn key vocabulary including exposure to Tier 2 language • Extended answer questions relating to periodic table / impact of burning fuels	• Learn key vocabulary including exposure to Tier 2 language • Extended answer questions relating to examples of forces acting / states of matter	• Learn key vocabulary including exposure to Tier 2 language • Extended answer questions relating to interdependence / biodiversity	• Learn key vocabulary including exposure to Tier 2 language • Extended answer questions relating to reactivity series / rock cycle / dangers of mining	• Writing a method • Evaluating Experimental Data

	• 8A Weighting & Bias • 7C Sentences	• 8E Information & Explanation Texts • 8F Using Sentences	• 8I Presenting Information • 7K Making Notes	• 8B Structuring Paragraphs • 7D Paragraphs	• 8G Describing Materials • 8H Assessing Sources	
Numeracy	• SA:V ratios • Nutritional values and calorie intake	• Conservation of mass • Chemical formula (ratios of elements)	• Calculating resultant forces • Using diagrams • Calculating weight • Calculating density	• Data handling, area • Energy in food chains	• Symbol equations & formulae	• Recording data • Plotting a graph • Analysing data
Enrichment learning	• Practical opportunities, which includes working in groups • Possibility of investigation or project work into pulse rate or reaction time	• Practical opportunities, which includes working in groups • Possibility of investigation or project work into conservation of mass / pollution	• Practical opportunities, which includes working in groups • Possibility of investigation or project work into forces / changing state / floating & sinking	• Practical opportunities, which includes working in groups • Possibility of investigation or project work into photosynthesis / trip to look at ecosystems	• Practical opportunities, which includes working in groups • Possibility of investigation or project work into reactivity series / trip to NHM to see rocks & gemstones	• Practical opportunities, which includes working in groups • Possibility of investigation or project work
British values	• Respect for others during group work • Responsibility for your health and safety (drug use)	• Respect for others during group work • Responsibility for the environment	• Respect for others during group work	• Respect for others during group work • Responsibility for the environment, biodiversity, ethics of sampling	• Respect for others during group work • Responsibility for the environment (acid rain), ethics of mining	• Respect for others during group work
Personal Development	• Redrafting extended answers – resilience • Working in groups and debating – confidence • Homework and projects – independence	• Redrafting extended answers – resilience • Working in groups and debating – confidence • Homework and projects – independence	• Redrafting extended answers – resilience • Working in groups and debating – confidence • Homework and projects – independence	• Redrafting extended answers – resilience • Working in groups and debating – confidence • Homework and projects – independence	• Redrafting extended answers – resilience • Working in groups and debating – confidence • Homework and projects – independence	• Redrafting extended answers – resilience • Working in groups and debating – confidence • Homework and projects – independence
Careers	Medicine, physiotherapy, nutritionalist, biophysicist, food technologist, dietician	In chemistry, chemical engineering, metal extraction/mining	Engineering, aeronautical, Civil Engineer, Offshore Engineer	Botany, agriculture, conservation, environmental protection	Geologist, material science, engineering, public health	Geologist, material science, engineering
Assessment opportunities	• Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	• Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	• Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	• Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	• Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks	• Core practicals, Keyword spelling and definition tests, AP assessments, extended writing exam questions, homeworks
Personalised challenge for all (SEND/HPA)	• SEND to focus developing Los: recall, identify, match • Scaffolds to support SEND • HPA to be extended with the exceeding Los.	• SEND to focus developing Los: recall, identify, match • Scaffolds to support SEND • HPA to be extended with the exceeding Los.	• SEND to focus developing Los: recall, identify, match • Scaffolds to support SEND • HPA to be extended with the exceeding Los.	• SEND to focus developing Los: recall, identify, match • Scaffolds to support SEND • HPA to be extended with the exceeding Los.	• SEND to focus developing Los: recall, identify, match • Scaffolds to support SEND • HPA to be extended with the exceeding Los.	• SEND to focus developing Los: recall, identify, match • Scaffolds to support SEND • HPA to be extended with the exceeding Los.