



CHORLTON HIGH SCHOOL: CURRICULUM

CHS Curriculum Intent

SUCCESSFUL: Learners who gain deep and powerful knowledge in preparation for life; combining academic rigour, curiosity and creative flair.

CREATIVE: Learners who are imaginative, optimistic and inventive; finding their voice to become effective communicators prepared for lifelong adaptability

HAPPY: Learners who are confident, resilient, well-rounded citizens; they understand the world's communities and are ready to discover their place in it.

CHS Curriculum Area Framework for Learning – Year 9

SUBJECT	Science
----------------	---------



CHORLTON HIGH SCHOOL: CURRICULUM

Year Group	9 SDO 201920					
Rationale/ Narrative	Year 9 will begin to cover the fundamental ideas needed for GCSE science. During the year students will reinforce the knowledge that they have gained in years 7 and 8 and focus on building on these key ideas to ensure a good foundation for the Key Stage 4 GCSE in Combined or Separate Sciences. Students will study an equal mix of Biology, Chemistry and Physics across the year and the skills of working scientifically will be embedded throughout.					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KNOWLEDGE	Biology – Cells and Immunity Animal and plant cells Required Practical Microscopy Cell differentiation Specialisation Eukaryotic and Prokaryotic cells Chromosomes EOT Infectious disease Bacterial and fungal disease Viral Disease Malaria Writing to inform malaria Defence systems Vaccinations Antibiotics and painkillers Resistance to antibiotics EOT	Chemistry – The periodic table, metals and the atmosphere Atomic structure Development of the periodic table Using the periodic table Atom size and electron structure The reactivity series Extraction of metal from metal oxides Alternative methods of extraction EOT The evolving atmosphere Atmospheric pollutants Cause and effect of global warming Human impacts on the environment Progress test	Physics – Energy and density Energy stores and systems Changes in energy (GPE) Changes in energy (KE) Changes in energy (EPE) Work Power EOT Sankey diagrams Useful energy and efficiency Changes of state Density Required practical Investigating density EOT	Biology – Genes, respiration and photosynthesis Sexual and asexual reproduction Sex determination DNA and the genome Variation Classification MCT Metabolism Aerobic respiration Anaerobic respiration Response to exercise Organisation in plants Photosynthesis reaction Required practical Rate of photosynthesis Uses of glucose Transpiration Progress Test	Chemistry – Groups, reactivity and bonding Group 1 Group 7 Comparing Group 1 and Group 7 Metallic bonding Ionic bonding Covalent bonding Chemical bonds Chemical bonds comparison Properties of ionic compounds Properties of covalent compounds Diamond and graphite Fullerenes and graphene EOT	Physics – Development of the atom, ionising radiation, heat. Atomic structure Atomic mass and atomic number Model of the atom Radioactive decay – alpha, beta and gamma Nuclear equations for alpha beta and gamma radiation Uses of nuclear radiation Radioactive irradiation and contamination Half-life and decay Energy stores Specific heat capacity Required practical SHC Latent heat Progress Test
SKILLS	Use of prefixes centi-, milli-, micro and nano- in relation to cells and microscopy RP- Use of a light microscope to observe, drawn and label cells	Represent the first 20 elements in both numerical form and as a diagram showing electron configuration Use the periodic table to make predictions on reactivity Understand how theories develop linked to the	Calculate energy changes Recall and apply the following equations: $KE = \frac{1}{2} mv^2$ $GPE = mgh$ $P = E/t$ $P = W/t$ Use of equations to calculate efficiency	Model behaviour of chromosomes Use probability, proportion and ratios in relation to inheritance Investigate the effect of exercise on the body Measure and calculate the rate of photosynthesis	Predict properties down periodic table groups Visualise and represent 2D and 3D forms of chemical bond Be able to draw dot and cross diagrams to represent ionic and covalent bonds	RP- Investigating specific heat capacity Recognise expressions in standard form Use of nuclear equations to show alpha and beta decay



CHORLTON HIGH SCHOOL: CURRICULUM

	<p>Use models and analogies to explain how cells divide</p> <p>Evaluate risk, benefits, social and ethical issues of stem cell research</p> <p>Interpret data about risk factors for specific diseases.</p>	<p>development of the periodic table</p> <p>Use percentages, ratios and fractions linked to gases in the Earth's atmosphere.</p>	<p>Calculate density using m/v</p> <p>Use a particle model to represent solids, liquids and gases</p>	<p>Plot and draw graphs, selecting appropriate scale for axes</p>		<p>Interpret half-life graphs and use these to calculate half-life of a radioactive source</p>
ASSESSMENTS	<p>Required Practical 1 (RP 1) write up and analysis – Microscopy</p> <p>Antibiotic Resistance - Smithfield</p>	<p>Reactivity of metals write up</p> <p>Progress test Autumn content</p>	<p>Required Practical write up and analysis – Density regular and irregular objects</p> <p>Energy big write</p>	<p>Required Practical write up and analysis – rate of photosynthesis</p> <p>Progress test Autumn and Spring content</p>	<p>Compare Groups 1, 7 and 0.</p> <p>Comparing properties of ionic and covalent compounds</p>	<p>Required Practical write up and analysis – Specific Heat Capacity</p> <p>Progress test Autumn, Spring and summer content</p>