

## 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 8

<b>SUBJECT</b>	<b>Science</b>
<b>INTENT</b>	<p>The intent of the science department is to convey to students that Science underpins everything. At Chorlton High School we study</p> <p><b>Physics:</b> to be able to understand the fundamental principles that govern all energy and matter in the Universe. Physics gives us tools to understand nature from the scale of sub-atomic particles up to the inter-galactic scale of the Universe.</p> <p><b>Chemistry:</b> to be able to understand the nature of substances: how they are composed, their behaviour, and their physical and chemical properties. Chemistry allows us to identify unknown substances, monitor concentrations and synthesise new chemicals. Above all, Chemistry is about finding solutions to the problems that concern us and our surroundings.</p> <p><b>Biology:</b> to be able to understand life and thereby understand ourselves. Biology allows us an understanding of the amazing complexity of many life processes and mechanisms. Biology encourages us to seek out reasons for strange, surprising and sometimes unusual observations.</p>

<b>Year Group</b>	<b>8 2020 21</b>					
<b>Rationale/ Narrative</b>	To further develop knowledge in Biology, Chemistry and Physics and to explore and engage student's curiosity of the natural world. Students will continue to develop their ability to write and carry out scientific investigations and then explore more fundamental areas of science which include; disease, immunity, diet, health, organ systems, separation techniques, forces, motion and evolution.					
	<b>Autumn 1 – Forensics</b>	<b>Autumn 1 – Health and Nutrition</b>	<b>Spring 1 – Disease (transmission and immunity)</b>	<b>Spring 2 – Energy transfer (Transverse and longitudinal waves)</b>	<b>Summer 1 – Genes and Evolution</b>	<b>Summer 2 Motion and Forces</b>
<b>KNOWLEDGE</b>	Separating Mixtures States of Matter Particle model Density pH scale Neutralisation Acids and Alkalis Using Indicators	Diet. Diabetes. Homeostasis. Digestive system Digestive enzymes Digestive system big write. Respiratory system Gas exchange Effects of cannabis Impact of exercise	Bacterial disease Viral disease Fungal disease Bacterial numeracy Malaria Transmission and defence immunity Spreading microbes Human defence system Vaccination/ MMR Antibiotics and pain killers MRSA	Waves Wave equations Transverse and longitudinal waves Reflection Refraction Dispersion Sound Transfer of sound through matter Structure of the Ear	Variation The structure of DNA Genes, chromosomes and the nucleus Genetic modification Selective breeding Natural selection Evolution Extinction Wild life conservation	Measuring forces Hooke's Law Calculating speed Distance time graphs Speed and velocity Energy stores Gravitational potential Energy Elastic potential energy Kinetic energy Energy transfers in a rollercoaster.
<b>SKILLS</b>	Students will carry out/write up scientific investigations into:  - paper chromatography - distillation	Students will use modelling to show the journey taken by food through the digestive system and to understand the specific nature of enzymes.	Students will carry out/write up scientific investigations into:  - antibiotics and clear zones - the spread of bacteria	Students will carry out/write up scientific investigations into:  - waves in solids and liquids	Students will develop oracy and presentation skills through researching complex topics including genetic engineering, evolution	Students will learn how to interpret distance time graphs, calculate gradients, rearrange equations and use calculations to support conclusions.

	<ul style="list-style-type: none"> <li>- calculating density of regular and irregular objects</li> <li>- neutralisation</li> </ul> <p>Students will learn how scientists use the pH scale as a measure of acidity/ alkalinity.</p>	Students will investigate and complete a scientific write up on the impact of exercise.		<ul style="list-style-type: none"> <li>- ray diagrams (reflection and refraction)</li> <li>- the speed of sound in air.</li> </ul>	<p>and reasons for extinction.</p> <p>Students will learn how to construct genetic cross diagrams using ratios and percentages to present their workings.</p>	- students will design and present information about the energy changes in a rollercoaster
<b>ASSESSMENTS</b>	<p>Students will be assessed on:</p> <ul style="list-style-type: none"> <li>- summarising their learning on separation techniques covering filtration, evaporation, chromatography and distillation</li> <li>- investigation into density of regular and irregular objects</li> </ul> <p>MCT on knowledge from Autumn 1</p>	<p>Students will be assessed on:</p> <ul style="list-style-type: none"> <li>- write up of the journey taken by food through the human digestive system including the action of specific enzymes</li> <li>- investigation into the effects of exercise</li> <li>- MCT – revision (covering knowledge from Spring 2 Year 8)</li> <li>- Progress test (all knowledge content from Year 7 and Autumn of Year 8)</li> </ul>	<p>Students will be assessed on:</p> <ul style="list-style-type: none"> <li>- Writing a scientific report about how to spread microbes aseptically</li> <li>- MCT – revision (covering knowledge from Spring 1 Year 8)</li> <li>- Cultural capital assignment – Antibiotic resistance</li> </ul>	<p>Students will be assessed on:</p> <ul style="list-style-type: none"> <li>- Writing a scientific report about how to measure reflection and refraction in a glass block.</li> <li>- MCT – revision (covering knowledge from Spring 2 Year 8)</li> <li>- Progress test (all knowledge content from Year 7 and Year 8 Autumn and Spring)</li> </ul>	<p>Students will be assessed on:</p> <ul style="list-style-type: none"> <li>- Writing a journal / essay about why the Neanderthals became extinct</li> <li>- MCT – revision (covering knowledge from Summer 1 Year 8)</li> <li>- Cultural capital task</li> </ul>	<p>Students will be assessed on:</p> <ul style="list-style-type: none"> <li>- Writing a scientific report about how to measure the extension of a Spring.</li> <li>- MCT – revision (covering knowledge from Summer 2 Year 8)</li> <li>- Progress test (all knowledge content from Year 7 and Year 8)</li> </ul>

