Year 9 SCIENCE

Overall Intent:

- Maintain curiosity through exploring the ten Big Ideas of Science
- Acquire the full range of skills to learn to apply knowledge, critique information and actively solve problems
- Have a science education to progress their understanding of the issues that shape their lives during and beyond their school years

In Year 9, students study 6 hours per fortnight of science. They continue to explore each of the ten Big Ideas of Science and build upon previous learning and expand their understanding of each idea. Year 9 starts with project-based learning focusing on the topic of water. Later in the year students start GCSE work in each of the disciplines of Biology, Chemistry and Physics. Students are assessed throughout the topics using Demonstrate and Connect tasks. End of topic assessments focus on their ability to communicate their knowledge and understand key scientific concepts. Homework will be issued at least once per topic and may comprise extended research or completing a skills grid following a practical investigation. This course prepares students for continuing their GCSE scientific study into Year 9, GCSE and beyond.

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic/area of study	Water Project (Chemical properties of water, obtaining potable water, biological use and transport of water, using water to obtain energy)		Atomic structure Cells Energy stores	Periodic Table Transport of materials Energy Calculations		Ionic Bonding Cellular organisation Energy Resources
Key learning aims – knowledge and skills	Builds skills in using the internet for research, evaluating sources of information, working in a group and presenting work to an audience. In each unit, students carry out a range of practical activities and investigations.		Students know the structure of the atom, how our knowledge of the atom has developed over time and are able to deduce electronic configurations of atoms. Students can identify cells and cell organelles and explain how structure relates to function in specialised cells. They can describe the transfer of energy between stores and through different pathways.	Students build upon atomic structure to explore the organisation of element in the periodic table and study groups 1, 7 and 0 in greater detail. They study the movement of substances in and out of cells and build upon knowledge of energy transfers by calculating the amount of energy in different stores.		Students start to look at how elements combine to form compounds and the role electrons play in this. They start to appreciate how cells are organised into more complex structures of tissues and organs and how we can exploit the resources of the Earth to provide energy for modern life.

Assessment	Presentations	AP1	End of topic tests	AP2		End of year exam – AP3