

Chemistry

The Chemistry Department of St Thomas More Catholic School aims to develop an understanding of what chemistry is, and how we can use it. We aim for all pupils to develop a fundamental understanding of the material world through the study of chemical concepts and how this is applied to the real world, and the impact on society and the world. We aim to develop pupils' analytical skills and their use of models to explain phenomena as well as their reasoning and enquiry. We aim to develop competence and confidence in a variety of practical, mathematical and problem solving skills.

Key Stage 3 and 4

The Chemistry Department curriculum has been built around the following key concepts that pupils need to grasp:

Chemistry as a science:	Chemistry and the world:	Chemical concepts:
<ul style="list-style-type: none"> • how we use models to explain phenomena • how we use standardised representations e.g. symbols and equations • how we apply mathematics • how we use classification to identify trends and patterns 	<ul style="list-style-type: none"> • how we can explain natural phenomena e.g. climate change • how we can develop new materials and processes to improve our lives 	<ul style="list-style-type: none"> • what materials are made of • how materials can be made and changed • how we find out what substances are made of • how we can explain how substances behave

Overall, by the end of Key Stage 3, pupils should be able to think logically and critically and build answers to questions independently using their key concepts and skills.

The table below shows you the topics pupils will study throughout Key Stage 3:

	Module 1	Module 2	Module 3
Year 7	Working in a lab The particle model	Separating mixtures Acids and alkalis	Acids and alkalis
Year 8	Particle theory and its application	Chemical changes	Environmental chemistry
Year 9	Particle theory and separation techniques	Chemistry of the atmosphere	Atomic Structure and the periodic table

Having developed their knowledge of the key concepts throughout Key Stage 3, the aim of Key Stage 4 is to ensure that students are increasingly able to apply this crucial learning to explain more complex chemical phenomena.

The table below shows you the topics pupils will study throughout Key Stage 4:

	Module 1	Module 2	Module 3
Year 10	Quantitative Chemistry	Chemical changes Energy changes	The rate and extent of chemical change

Year 11	The rate and extent of chemical change	Organic Chemistry Chemistry of the atmosphere	Chemical analysis Revision
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Key Stage 5

At KS5 pupils will continue to develop the key concepts from GCSE:

Chemistry as a science:	Chemistry and the world:	Chemical concepts:
<ul style="list-style-type: none"> • how we use models to explain phenomena • how we use standardised representations e.g. symbols and equations • how we apply mathematics • how we use classification to identify trends and patterns 	<ul style="list-style-type: none"> • how we can explain natural phenomena e.g. climate change • how we can develop new materials and processes to improve our lives 	<ul style="list-style-type: none"> • what materials are made of • how materials can be made and changed • how we find out what substances are made of • how we can explain how substances behave

The table below shows you the topics pupils will study throughout Key Stage 5:

	Module 1	Module 2	Module 3
Year 12	Foundations in Chemistry	Core Organic Periodic table and Energy	Core Organic Periodic table and Energy
Year 13	Physical Chemistry Organic Chemistry and analysis	Transition elements Organic Chemistry and analysis	Revision