



## Middlewich High School Science Department – 5 Year Curriculum Intent



Science Curriculum	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 7</b>	<b>Introduction to Lab Safety</b> We learn how to operate safely in the lab, a very different classroom to any you have been in before! <b>Organisms Part 1</b> Discover cells, and how our body works	<b>Matter Part 1</b> What is everything made of? How do substances change state and how do we separate particles?	<b>Forces part 1</b> Understand balanced and unbalanced forces <b>Genes Part 1</b> The variety of life on earth is huge. What determines why organisms are all so different?	<b>Reactions Part 1</b> Test for acids and alkalis and learn what happens when metals react	<b>Electromagnets Part 1 &amp; 2</b> Explore how electricity powers our world <b>Energy Part 1</b> Discover how food and fuel are used to provide energy	<b>Ecosystems Part 1</b> Appreciate how organisms depend on one another and the environment for survival
<b>Year 8</b>	<b>Earth and Space Part 1</b> Marvel at what is inside the earth, and what is in our galaxy and beyond.	<b>Waves Part 1 &amp; 2</b> How do sound and light travel and how can we detect them?	<b>Organisms Part 2</b> Learn more in depth how our organs function to keep us alive	<b>Forces Part 2</b> Develop your understanding of forces by investigating contact and non-contact forces	<b>Matter Part 2</b> What is the periodic table and why is it so fundamental to Chemistry? We discover the importance of elements, atoms and compounds	<b>Ecosystems Part 2</b> Develop your understanding of biochemistry and the fundamental processes of life – respiration and photosynthesis
<b>Year 9</b>	<b>Reactions Part 2</b> In what ways can chemicals react with each other? <b>Energy Part 2</b> We investigate how energy is used to power machines and how heat energy is transferred	<b>Genes Part 2</b> DNA is the universal symbol of Biology – but what is it and why is it so important in driving evolution?	<b>Earth Part 2</b> Gain a deeper understanding of our climate, and how we use the Earth's resources <b>End of KS3</b>	<b>B1 - Cell Biology</b> What is inside our cells and how do they keep us alive?	<b>C1 - Atomic Structure</b> Everything is made of atoms – but what are atoms made of?	<b>P1 – Energy</b> What are renewable and non-renewable types of energy?
<b>Year 10 Biology</b>	<b>B1 - Cell Biology</b> Developing our understanding of cells further, we look at how cells replicate and how substances move into and out of cells	<b>B2 - Organisation</b> Discover more about how organs in animals and plants work together to function	<b>B2 – Organisation</b> Discover how non-communicable diseases affect our bodies	<b>B3 - Infection and Response</b> How does our body defend itself against disease?	<b>B4 – Bioenergetics</b> Deepen your knowledge of biochemical processes inside cells	<b>B7 – Ecology</b> All species live in interdependent communities and are adapted to particular conditions
<b>Y10 Chemistry</b>	<b>C2 - Structure and Bonding</b> Chemists use theories of structure and bonding to explain the physical and chemical properties of materials.	<b>C3 - Quantitative Chemistry</b> Chemists use quantitative analysis to determine the formulae of compounds and the equations for reactions	<b>C3 - Quantitative Chemistry</b> Chemical equations represent chemical reactions and are a key way for chemists to communicate chemical ideas.	<b>C4 - Chemical Changes</b> Knowing about different chemical changes means scientists can predict what new substances can form and use this to develop a range of different materials and processes.	<b>C5 - Energy Changes</b> Energy changes are an important part of chemical reactions. The interaction of particles often involves transfers of energy due to the breaking and formation of bonds	<b>C6 – Rate and Extent of Chemical Change</b> Whilst the reactivity of chemicals is a significant factor in how fast chemical reactions proceed, there are many variables that can be manipulated in order to speed them up or slow them down
<b>Y10 Physics</b>	<b>P1 – Energy</b> Building on our previous knowledge of energy, we learn to calculate how much energy objects have	<b>P2 – Electricity</b> Understanding the difference in the microstructure of conductors,	<b>P3 – Particle Model of matter</b> The particle model is widely used to predict the behaviour of solids, liquids	<b>P4 - Atomic structure</b> Although radioactivity was discovered over a century ago, it took many nuclear physicists several decades to understand	<b>P5 – Forces</b> Engineers analyse forces when designing a great variety of machines and instruments, from road	<b>P5 – Forces</b> Recent developments in artificial limbs use the analysis of forces to make movement possible.

		semiconductors and insulators makes it possible to design components and build electric circuits.	and gases and this has many applications in everyday life.	the structure of atoms, nuclear forces and stability.	bridges and fairground rides to atomic force microscopes.	
<b>Year 11- Biology</b>	<b>B5 - Homeostasis and Response</b> Humans can only survive within narrow physical and chemical limits – how do we control this?	<b>B6 - Inheritance, Variation and Evolution</b> Understand how mutations in our DNA are the driving force behind natural selection.	<b>Revision</b>	<b>Revision</b>	<b>Revision – final GCSE exams begin</b>	
<b>Year 11- Chemistry</b>	<b>C7 - Organic Chemistry</b> The chemistry of carbon compounds is so important that it forms a separate branch of chemistry. <b>C8 - Chemical Analysis</b> Analysts have developed a range of qualitative tests to detect specific chemicals.	<b>C9 - Chemistry of the Atmosphere</b> The Earth's atmosphere is dynamic and forever changing <b>C10 - Using Resources</b> Industries use the Earth's natural resources to manufacture useful products	<b>Revision</b>	<b>Revision</b>	<b>Revision – final GCSE exams begin</b>	
<b>Year 11- Physics</b>	<b>P6 – Waves</b> Wave behaviour is common in both natural and man-made systems	<b>P7 - Magnetism and Electromagnetism</b> Electromagnetic effects are used in a wide variety of devices.	<b>P8 - Space Physics (Separate Science Only)</b> In the past century, astrophysicists have made remarkable progress in understanding the scale and structure of the universe, its evolution and ours. <b>Revision</b>	<b>Revision</b>	<b>Revision – final GCSE exams begin</b>	