SUBJECT: Science

YEAR GROUP	Year Eight					
Rationale	The year eight science course at St. Edmund Arrowsmith aims to build on the science content pupils have studied at key stage two and in year seven. Pupils will further develop their knowledge and understanding of the subject and continue to develop their practical skills. Students will carry out investigations, write scientifically and continue to explore the fundamental areas of science which include interdependence, the reactions of metals and acids, electricity and waves.					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic/Unit	Physics Unit 2	Chemistry Unit 3	Biology Unit 3		Physics Unit 3	Biology Unit 4
Knowledge	1 – Why does a bulb light in a circuit? 2 – How does current flow in a series circuit? 3 – What is potential difference in a series circuit? 4 – What is a parallel circuit? 5 - How does current flow in a parallel circuit? 6 – What happens to potential difference in a parallel circuit? 7 – What is resistance? 8 - How do you calculate resistance? 9 - How do objects build up a charge? 10 - What is electrostatic force? 11 – What is magnetic force? 12 – What is an electromagnet? 13 – How does current effect the strength of electromagnets? 14 - How does the number of turns effect the strength of electromagnets?	1 – What is the difference between a chemical and physical change? 2 – What do state symbols tell us? 3 – What is the difference between an acid and a base? 4 – What does the pH scale tell us? 5 - What is acid rain and what are its effects? 6 – What is the difference between an endothermic and exothermic reaction? 7 – What is the reactivity series of metals? 8 - What happens in a displacement reaction? 9 - What happens when acid reacts with metals? 10 - What happens in a neutralisation reaction? 11 – How do you balance a symbol equation? 12 – How do catalysts affect chemical reactions?	1 - What are pathogens and how can they affect you? 2 – How can pathogens spread? 3 – How does your body stop pathogens from getting inside? 4 – How does your immune system protect you from pathogens? 5 - Are all diseases caused by pathogens? 6 - How does asthma affect the breathing system? 7 - How are leaves adapted for photosynthesis? 8 - What does a food web show? 9 - How can you measure the distribution of a species in a habitat? 10 – How can pollution and toxic materials affect organisms? 11 - How does water move through the environment?		1 - What is a wave? 2 - What is a sound wave? 3 - Why can only some sounds be heard? 4 - What is a light wave? 5 - What happens to light in different materials? 6 - What is reflection? 7 - What is refraction? 8 - How does the eye work? 9 - How do we see different colours?	1- What happens in aerobic respiration? 2 - What happens in anaerobic respiration? 3 - What is yeast and how is it useful? 4 - How does carbon move through the environment? 5 - What is the difference between continuous and categoric variation? 6 – How are animals adapted to survive? 7 - What happens in natural selection? 8 - What is a species? 9 - What can cause species to become extinct? 10 - Why are insects so important?

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Skills	Pupils will be given the opportunity to investigate series and parallel circuits and how to measure current and potential difference. Pupils will investigate how the number of turns effects the strength of an electromagnet Pupils will continue to develop their working scientifically skills and their use of the key terms related to working scientifically.	Pupils will be given the opportunity to investigate the difference between acids and alkalis, the reactivity of different metals and the difference between endothermic and exothermic reactions. Pupils will investigate what happens in a neutralisation reaction and how catalysts affect chemical reactions. Pupils will continue to develop their working scientifically skills and their use of the key terms related to working scientifically.	Pupils will be given the opportunity to investigate how diseases spread and how to measure the distribution of organisms. Pupils will use quadrats and transects to investigate the distribution of species. Pupils will continue to develop their working scientifically skills and their use of the key terms related to working scientifically.		Pupils will be given the opportunity to investigate sound and light waves, how we see objects and why we see different colours. Pupils will also investigate what reflection and refraction are. Pupils will continue to develop their working scientifically skills and their use of the key terms related to working scientifically.	Pupils will be given the opportunity to investigate the difference between aerobic and anaerobic respiration and how respiration by yeast can be useful for us. Pupils will compare continuous and categoric variation and learn how to display different types of data on a graph. Pupils will continue to develop their working scientifically skills and their use of the key terms related to working scientifically.
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Assessments: Formative	Formative assessment will regularly take place during science lessons. Once a fortnight pupils will complete a learning check activity based on previously taught content. This activity will be teacher assessed and feedback will be provided.					
Assessments: Summative		Assessment Window 1 - Assessing Physics unit 2			Assessment Window 2 (KS3 Assessment Week) - Assessing Chemistry unit 3 Physics unit 2 Physics unit 3 Biology unit 3	
Homework	Pupils in year eight will be set one piece of Sparx Science homework each week. To help support pupils to develop a good routine in relation to home learning this science homework will always be set on a Friday and due in the following Thursday. Pupils are expected to spend approximately 40 minutes on each piece of Sparx Science homework.					