



Subject: Science

YEAR GROUP:	Year 7					
RATIONALE:	<p>The Year 7 Science course at St. Edmund Arrowsmith aims to build on the science content pupils have studied at key stage two. Pupils will increase their knowledge and understanding of the subject while also developing their practical skills. This will help pupils to develop firm foundations in Biology, Chemistry and Physics.</p> <p>Pupils will carry out investigations, write scientifically and explore the fundamental areas of science which include cells, reproduction, photosynthesis, respiration, states of matter, atoms, elements, forces, energy and electricity.</p>					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	All pupils complete Physics Unit One first, and then work through the other units in rotation during the course of the year.					
	Topic/Unit: Physics Unit One	Topic/Unit: Chemistry Unit One	Topic/Unit: Biology Unit One	Topic/Unit: Chemistry Unit Two	Topic/Unit: Biology Unit Two	
Knowledge	<ul style="list-style-type: none"> ▪ Energy Stores ▪ Energy Transfers ▪ Particles ▪ Change of State ▪ Contact and Non-Contact Forces ▪ Space ▪ Electricity ▪ Conductors and Insulators ▪ Waves 	<ul style="list-style-type: none"> ▪ Elements and the Periodic Table ▪ Metals and Non-Metals ▪ Atoms ▪ Chemical Formula ▪ Compounds ▪ Chemical Reactions ▪ Conservation of Mass ▪ Testing Unknown Gases ▪ Combustion ▪ Thermal Decomposition 	<ul style="list-style-type: none"> ▪ Animal Cells ▪ Tissues ▪ Organs ▪ Digestive System ▪ Breathing System ▪ Circulatory System ▪ Plant Cells ▪ Photosynthesis ▪ Leaves ▪ Diffusion ▪ Respiration 	<ul style="list-style-type: none"> ▪ States of Matter ▪ Changes of State ▪ Mixtures ▪ Filtration ▪ Crystallisation ▪ Distillation ▪ Chromatography ▪ Earth's Atmosphere ▪ Global Warming ▪ Structure of the Earth ▪ Rocks & the Rock Cycle ▪ Composites, Polymers & Ceramics 	<ul style="list-style-type: none"> ▪ Skeleton ▪ Muscles ▪ Diet ▪ Drugs ▪ Animal Reproduction ▪ Menstrual Cycle ▪ Plant Reproduction ▪ Genes and DNA 	
Skills	<p>Pupils will be given the opportunity to investigate changes of state, energy transfers and the difference between conductors and insulators.</p> <p>Pupils will be introduced to the expectations of our lower school practical write up, and the success criteria they can use to help them complete it and develop their working scientifically skills.</p> <p>Pupils will develop skills to undertake and write up an experiment to investigate whether different materials are conductors or insulators. Pupils will be introduced to the key terms related to working scientifically.</p>	<p>Pupils will be given the opportunity to investigate burning reactions, conservation of mass in chemical reactions and how to identify unknown gases.</p> <p>Pupils will continue to develop their working scientifically skills through completion of a practical write up using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate the energy content of different fuels.</p> <p>Pupils will identify variables, write a method, carry out a risk assessment, record and display their results, write a conclusion and</p>	<p>Pupils will be given the opportunity to investigate the differences between animal and plant cells and how leaves are adapted for photosynthesis.</p> <p>Pupils will continue to develop their working scientifically skills through completion of a practical write up using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate the effect of exercise on the breathing system.</p> <p>Pupils will identify variables, write a method, carry out a risk assessment, record and display their results, write a conclusion and</p>	<p>Pupils will be given the opportunity to investigate how to separate different mixtures using filtration, crystallisation and chromatography.</p> <p>Pupils will continue to develop their working scientifically skills through completion of a practical write up using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate how many dyes different inks contain.</p> <p>Pupils will identify variables, write a method, carry out a risk assessment, record and display their results, write a conclusion and evaluate their experiment.</p>	<p>Pupils will be given the opportunity to investigate plant reproduction and the force exerted by different muscles.</p> <p>Pupils will continue to develop their working scientifically skills through completion of a practical assessment using success criteria.</p> <p>Pupils will develop their skills to undertake and write up an experiment to investigate the effect of seed arm length on seed dispersal.</p> <p>Pupils will identify variables, write a method, carry out a risk assessment, record and display their results, write a conclusion and evaluate their experiment.</p>	



		evaluate their experiment. Pupils will continue to use the key terms related to working scientifically.	evaluate their experiment. Pupils will continue to use the key terms related to working scientifically.	Pupils will continue to use the key terms related to working scientifically.	Pupils will continue to use the key terms related to working scientifically.
Assess-ments	1. Practical Write Up: Pupils will carry out a practical investigating electrical current flowing through materials to identify conductors and insulators then, using criteria provided, produce a full written account of their experiment and their findings. 2. End of Unit Test: Physics Unit One	1. Practical Write Up: Pupils will carry out a practical investigation measuring the energy content of different fuels and then, using criteria provided, produce a full written account of their experiment and their findings. 2. End of Unit Test: Chemistry Unit One	1. Practical Write Up: Pupils will carry out a practical investigation measuring the effect of exercise on breathing rate and then, using criteria provided, produce a full written account of their experiment and their findings. 2. End of Unit Test: Biology Unit One	1. Practical Write Up: Pupils will carry out a practical investigation comparing different inks to see how many dyes they contain and then, using criteria provided, produce a full written account of their experiment and their findings. 2. End of Unit Test: Chemistry Unit Two	1. Practical Write Up: Pupils will carry out a practical investigation comparing the dispersal of seeds with different arm lengths and then, using criteria provided, produce a full written account of their experiment and their findings. 2. End of Unit Test: Biology Unit Two
Homework	All pupils will be set four 20 question educake quizzes to complete online using the www.educake.co.uk website during physics unit one. Pupils may be set independent practice questions in their physics unit one booklet to complete. They can use the content and guided practice sections of the booklet to support them to complete the work. Pupils are also expected to regularly test themselves on the retrieval quizzes in their physics unit one booklet, to support them to learn the key content of the unit. Revision for end of unit assessment.	All pupils will be set four 20 question educake quizzes to complete online using the www.educake.co.uk website during chemistry unit one. Pupils may be set independent practice questions in their chemistry unit one booklet to complete. They can use the content and guided practice sections of the booklet to support them to complete the work. Pupils are also expected to regularly test themselves on the retrieval quizzes in their chemistry unit one booklet, to support them to learn the key content of the unit. Revision for end of unit assessment.	All pupils will be set four 20 question educake quizzes to complete online using the www.educake.co.uk website during biology unit one. Pupils may be set independent practice questions in their biology unit one booklet to complete. They can use the content and guided practice sections of the booklet to support them to complete the work. Pupils are also expected to regularly test themselves on the retrieval quizzes in their biology unit one booklet, to support them to learn the key content of the unit. Revision for end of unit assessment.	All pupils will be set four 20 question educake quizzes to complete online using the www.educake.co.uk website during chemistry unit two. . Pupils may be set independent practice questions in their chemistry unit two booklet to complete. They can use the content and guided practice sections of the booklet to support them to complete the work. Pupils are also expected to regularly test themselves on the retrieval quizzes in their chemistry unit two booklet, to support them to learn the key content of the unit. Revision for end of unit assessment.	All pupils will be set four 20 question educake quizzes to complete online using the www.educake.co.uk website during biology unit 2. Pupils may be set independent practice questions in their biology unit two booklet to complete. They can use the content and guided practice sections of the booklet to support them to complete the work. Pupils are also expected to regularly test themselves on the retrieval quizzes in their biology unit two booklet, to support them to learn the key content of the unit. Revision for end of unit assessment.

All pupils have their own username and password for the www.educake.co.uk website where they can complete the online quizzes set for homework. If pupils are struggling to access the website, they should speak to their science teacher.