

Witchford Village College – Curriculum Mission Statement

Subject: Computing	Components			Composite	KS3 Mission Statement
	What new knowledge/content do we introduce?			What do students <i>do with this</i> knowledge?	<i>By the end of year 9, a Witchford Village College Science student will...</i>
	Year 7	Year 8	Year 9		
Autumn	What are cells and why are they important in living things? What are atoms and where do we find them? What is energy and where does it come from?	How do we obtain nutrients from food? What factors affect the rate of a chemical reaction? How and why is thermal energy transferred?	What is health and how do we stay healthy? How do chemical reactions affect our environment? How can we apply our knowledge of forces and electricity to solve real world problems?	We are increasingly looking for students to be able to carry out full scientific investigation. Over tie students should increasingly be able to propose a hypothesis, design an experiment, select suitable apparatus, identify a variable to change and measure and how all others will be controlled, a suitable method of recording and presenting data and any relationships therein, followed by a sensible conclusion and an honest evaluation of the validity of the method of data collection and the	1. Recognise science as a process to investigate the natural world and not simply a body of facts to be learnt. 2. Understand biology as the science of life, based on cells and able to explain many significant processes in living things. 3. Understand chemistry as the science of matter, based on atoms, able to explain the properties of matter and predict changes that may occur. 4. Understand physics as the science of energy and matter; that everything that happens is the result of
Spring	How do living things reproduce? What is a chemical reaction and why do they happen? What are forces and how do they affect us?	What are the causes of infectious disease and how do we prevent its spread? What are the common chemical structures of matter? What does the universe consist of?	GCSE		
Summer	How is information passed from one generation to the next and why are we all different? How can we categorise matter?	How are plants similar and different to all other forms of life? How and why is energy transferred in chemical reactions? How are we	GCSE		

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	What is electricity and how can we use it?	able to see light and hear sounds?		reliability of the data collected	
<i>Rationale for these specific components and composite outcomes:</i>	<p>In Year 7 students learn skills to become scientists though the building upon the fundamental ideas from KS2 science.</p> <p>Simplicity: Whilst students will have been taught science at Primary school, we want to introduce them to the subject as specialists. Students should appreciate the three distinct but complementary disciplines: Biology – we study the building blocks of all living things – cells and processes they are involved in; Chemistry – we study the building blocks of matter – atoms and the reactions they undergo; Physics – we study energy – how it drives</p>	<p>In year 8 Students spend time discovering science in everyday life, as well as appreciating science is always under review.</p> <p>Exemplification: In Year 8 students should focus on how cells work in union to enable body systems to be effective. They need to appreciate how vital plants are to life on Earth. Students should develop their understanding of atoms to see how their interactions are predictable and give rise to the properties of matter and their reactions. Students need to consider how energy is transferred by considering thermal, light and sound energy and should appreciate</p>	<p>In year 9 students apply their knowledge and skills to the world around them whilst building upon the curriculum.</p> <p>Complexity: In Year 9 students complete KS3 by linking together all the human processes they have studied to seem how cells, tissues and organs allow the body to work so well. They also learn to appreciate that chemical reactions have a huge impact on our environment, and the factors that affect this. And they start looking at forces and electricity in more depth appreciate the nuanced behaviour of electrons in circuits or how forces can be</p>	Students who are able to effectively propose and investigate a hypothesis are scientists by definition. Through investigation students learn how to make sense of the natural world. They are able to marvel at the beauty of nature and the elegance of its laws and apply this understanding to solve real world problems, be that how to fix their bike or how to cure cancer!	

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	every process in the universe.	energy is conserved throughout space.	multiplied to great effect.		
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How is challenge embedded into the KS3 curriculum?

Students must be in the habit of proposing a hypothesis to explain natural phenomena and then must use scientific investigation to collect data and therefore decide whether the data support their hypothesis. Students should be able to model natural processes, have an extensive recall of the core knowledge required to apply their understanding and demonstrate fluency in using scientific vocabulary to explain key concepts. Challenging lessons therefore require students to use experimental evidence to provide robust scientific explanations

How does the KS3 curriculum above build on previous learning in KS2?

It is important to note that we cannot assume the KS2 science curriculum has been effectively delivered (Note Ofsted curriculum report December 2018). The priority at KS2 is to gain an understanding of how to undergo a scientific investigation and by consideration of macroscopic observation (e.g. classifying rocks, classifying living things, investigating magnetism). In Y7 especially, we reinforce these ideas and then push students beyond KS2 by considering how microscopic (in biology) or nanoscopic (in chemistry and physics) processes act as drivers for the macroscopic observations.