

St Edward's Computing Curriculum Map 2019-2020

Subject content - Key stage 1

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug (test) simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Subject content - Key stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish
- achieve goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Computing has been promoted to a core subject for the 18/19 year to help increase coverage. It will be taught for one lesson per week all year. We will cover the units listed below following the Switched On Computing scheme of work.

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Autumn Term	Spring Term	Summer term
Early Years		
We understand instructions	We have feelings	We can exercise
<i>Communication/Language/Literacy</i>	<i>PSE Link</i>	<i>PE link</i>
Year 1		
We are treasure hunters	We are collectors	We are painters
		art link
Year 2		
We are astronauts	We are detectives	We are photographers
Science Link		art link
Year 3		
We are bug fixers	We are opinion pollsters	We are presenters
	maths link	
Year 4		
We are co-authors	We are meteorologists	We are toy designers
any topic link	science link	DT link
Year 5		
We are game developers	We are cryptographers	We are artists
		art link
Year 6		
3D Designers	We are app planners	We are interface designers
		art link

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Early Years		
We understand instructions	We have feelings	We can exercise
Year One		
We are treasure hunters	We are collectors	We are painters
<ul style="list-style-type: none"> -Predict where a set of instructions will take a pupil moving in a large space -Predict where a toy will end up from a set of instructions -Use logical reasoning -Use logical reasoning to predict the behaviour of simple programs 	<ul style="list-style-type: none"> -Recognise common uses of information technology beyond school -Organise, store and retrieve digital content - Take down information and note it efficiently -Use a computer to display our findings -Photograph what he have found. 	<ul style="list-style-type: none"> Think about how digital illustrations may have been created -Appreciate how image files are stored on a computer -Recognise common uses of information technology beyond school -Organise, store and retrieve digital content
Year Two		
We are astronauts	We are detectives	We are photographers
<ul style="list-style-type: none"> Implement algorithms as programs on a screen sprite using blocks with parameters - Implement algorithms on digital devices - Follow instructions given to them as if they were a robot. - Understand what algorithms are. - Create simple programs 	<ul style="list-style-type: none"> -Decide if it is safe to open files attached to emails -Understand some aspects of domain names -Filter a database on the basis of provided criteria -Use technology safely -Recognise common uses of information technology beyond school 	<ul style="list-style-type: none"> -Review others' photos, considering their artistic merits -Take effective and artistic photos -Recognise common uses of information technology beyond school -Create digital content
	-Use technology to manipulate digital content	

Year Three		
We are bug fixers	We are opinion pollsters	We are presenters
<ul style="list-style-type: none"> -Explain how they debugged the times-table program using logical reasoning. -Explain the connection between the number of steps, step size and turn in the circle drawing program -Explain how they corrected the joke program. -Describe how the 'Pong'-style program works. -Work with variables. -Use logical reasoning to explain how some simple algorithms work. -Use logical reasoning to correct errors in programs. -Use logical reasoning to explain how some simple algorithms work. 	<ul style="list-style-type: none"> -Explain how they and their respondents have used services running on Google data centre servers via the internet. -Show an awareness of data protection issues raised by the use of online surveys. -Review the data critically, looking for exceptions and patterns. -Understand computer networks, including the internet; how they can provide multiple services, such as the world wide web. -Use technology responsibly. -Evaluating data 	<ul style="list-style-type: none"> -Record creative footage. -Make use of data in their commentary. -Use more advanced video editing tools, such as transitions. -Design and create content. -Present data
Year Four		
We are co-authors	We are meteorologists	We are toy designers
<ul style="list-style-type: none"> -Organise a research project by breaking it into manageable parts. -Appreciate the importance of a neutral point of view. -Appreciate the pillars underpinning the Wikipedia code. -Solve problems by decomposing them into smaller parts. -Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour. 	<ul style="list-style-type: none"> -Identify unusual data. -Make accurate predictions. -Evaluating data -Use logical reasoning to explain how some algorithms work. -Present the weather effectively to their peers. -Use weather measurement equipment accurately 	<ul style="list-style-type: none"> -Use logical reasoning to identify and correct bugs in their simulation's software. -Solve problems they encounter by breaking them down into smaller steps. -Use logical reasoning to detect and correct errors in algorithms and programs

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Year Five		
We are game developers	We are cryptographers	We are artists
<ul style="list-style-type: none"> -Break their game into its component parts and develop them separately. -Create multiple images for characters and use them for animation. -Use variables in their game. -Explain how their game works. -Use logical reasoning to explain how some simple algorithms work. 	<ul style="list-style-type: none"> Compare and contrast Morse and semaphore with the internet. -Explain the algorithm for the Caesar cipher. -Decrypt messages using a general substitution cipher with an unknown key using frequency analysis. -Understand what constitutes a complex password. -Understand computer networks including the internet. -Use logical reasoning to explain how some simple algorithms work. -Understand networks and the opportunities they offer for communication. -Use technology safely and responsibly. 	<ul style="list-style-type: none"> -Use blocks of script they have written themselves to create a complex geometric figure in Scratch. -Explain in simple terms how computers can generate photorealistic landscapes. - Solve problems by decomposing them into smaller parts. -Use logical reasoning to explain how some simple algorithms work.
Year Six		
3D Designers	We are app planners	We are interface designers
<ul style="list-style-type: none"> Use software to design flat objects Use software to design 3d objects Understand how architects design buildings Design a building to a brief that meets certain standards. Decorate my building in an appropriate manner. 	<ul style="list-style-type: none"> -Understand how smart phones connect to the internet. -Understand some of the technology underlying GPS, and how this can be used. -Understand computer networks including the internet. -Work with various forms of input and output. 	<ul style="list-style-type: none"> -Use a prototyping tool to develop an intuitive and effective set of screen layouts for their app. -Develop the interaction design for their app in a visually appealing way likely to meet the needs of their intended audience. -Use principles of good design for inclusion when designing their app. -Source media assets for their app showing an awareness of licensing issues. -Use software to design systems. -Recognise acceptable/unacceptable behaviour.