



# Computing

## St Edmund Campion

### Computer Science

EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<p>Explore and tinker with hardware to develop familiarity and introduce vocabulary.</p> <p>Recognise and identify letters and numbers on a keyboard.</p> <p>Develop basic mouse skills such as moving and clicking.</p>	<p>Explore and tinker with hardware to find out how it works.</p> <p>Recognise that some devices are input and others are output.</p> <p>Learn where keys are located on the keyboard.</p> <p>Operate a device to take photos and videos.</p>	<p>Understand what a computer is and that it's made up of components.</p> <p>Know that technology is doing what we want it to do via its output.</p> <p>Develop confidence with the keyboard and the basics of touch typing.</p> <p>Recognise that buttons cause effects.</p> <p>Using greater control when taking photos with cameras, tablets or computers.</p>	<p>Understand what components do and how they work together.</p> <p>Draw comparisons across different types of computers.</p> <p>Know the purpose of routers.</p>		<p>Learn that external devices can be programmed by a separate computer.</p> <p>Recognise how the size of RAM affects the processing of data.</p>	<p>Design a computer of the future.</p> <p>Learn about history of computers and how they have evolved over time.</p> <p>Identify barcodes, QR codes and RFID and devices and applications that can scan them.</p>

<p>Use logical reasoning to understand instructions and</p>	<p>Use logical reasoning to predict the behaviour of simple programs.</p>		<p>Identify and understand the role of the key components of a network.</p> <p>Understand that websites and videos are files that are shared from one computer to another.</p> <p>Recognise links between networks and the internet.</p> <p>Learn how data is transferred.</p>	<p>Understand that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration.</p>	<p>Learn the vocabulary data and transmit.</p> <p>Recognise that computers transfer data in binary.</p> <p>Relate binary signals to the character-based language.</p> <p>Learn that messages can be sent by binary code.</p>	<p>Predict how software will work based on previous experience.</p> <p>Use past experiences to help solve new problems.</p>
			<p>Use logical reasoning to explain how simple algorithms work.</p>	<p>Use past experiences to help solve new problems.</p>		

<p>predict outcome.</p>	<p>Learn that decomposition means breaking a problem down into smaller parts.</p> <p>Use decomposition to solve unplugged challenges.</p> <p>Develop skills associated with sequencing in unplugged activities.</p> <p>Follow a basic set of instructions.</p> <p>Assemble instructions into a simple algorithm.</p>	<p>Explain what decomposition is.</p> <p>Decompose a game to predict the algorithms used to create it.</p> <p>Explain what an algorithm is.</p> <p>Follow an algorithm.</p> <p>Create a clear and precise algorithm.</p> <p>Learn that programs execute by following precise instructions.</p> <p>Incorporate loops within algorithms.</p> <p>Learn that there are levels of abstraction.</p>	<p>Use decomposition to explore the code behind an animation.</p> <p>Explain the purpose of an algorithm.</p> <p>Form algorithms independently.</p> <p>Use repetition in programs.</p>	<p>Use decomposition to solve a problem by finding out what code was used.</p> <p>Use decomposition to understand the purpose of a script of code.</p> <p>Identify patterns through unplugged activities.</p> <p>Use abstraction to identify the important parts when completing both plugged and unplugged activities.</p>	<p>Write more complex algorithms for a purpose.</p>	<p>Decompose a program into an algorithm.</p> <p>Write increasingly complex algorithms for a purpose.</p>
-------------------------	--	---	--	---	---	---

<p>Follow instructions as part of practical activities and games.</p> <p>Learn to give simple instructions.</p> <p>Experiment with programming a Bee-bot and learn how to give simple commands.</p> <p>Learn to debug instructions, with the help of an adult, when things go wrong.</p>	<p>Programme a floor robot to follow a planned route and use programming language to explain how a floor robot works.</p> <p>Learn to debug instructions when things go wrong, including in an unplugged scenario.</p>	<p>Use logical thinking to explore software, predicting, testing and explaining what it does.</p> <p>Use an algorithm to write a basic computer program.</p>	<p>Use logical thinking to explore more complex software; predicting, testing and explaining what it does.</p> <p>Incorporate loops to make code more efficient.</p> <p>Continue existing code.</p> <p>Make reasonable suggestions for how to debug code.</p>	<p>Create algorithms for a specific purpose.</p> <p>Code a simple game.</p> <p>Use abstraction and pattern recognition to modify code, incorporating variables.</p> <p>Remix existing code.</p>	<p>Repeat and develop programming as you work.</p> <p>Write code to create a desired effect.</p> <p>Use a range of programming commands.</p> <p>Confidently use loops in programming.</p> <p>Use repetition within a program.</p> <p>Use a more systematic approach to debugging code, justifying what is wrong and how it can be corrected.</p>	<p>Change a program to personalise it.</p> <p>Evaluate code to understand its purpose.</p> <p>Predict code and adapt it to a chosen purpose.</p> <p>Program using the language Python.</p> <p>Use and adapt nested loops.</p> <p>Remix existing code to explore a problem.</p> <p>Debug quickly and effectively to make a program more efficient.</p>
--	--	--	---	---	--	---

## Information Technology

EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Use a simple online paint tool to create digital art.	Use a basic range of tools within graphic editing software.			Build a web page and creating content for it.	Use logical thinking to explore software more independently, making predictions based on	Use logical thinking to explore software independently, iterating ideas and

<p>Represent data through sorting and</p>	<p>Develop control of the mouse through dragging, clicking and resizing of images to create different effects.</p> <p>Develop understanding of different software tools.</p> <p>Take and edit photographs.</p> <p>Recognise devices that are connected to the internet.</p> <p>Understand that technology can be used to represent</p>	<p>Develop word processing skills, including altering text, copying and pasting and using keyboard shortcuts.</p> <p>Use word processing software to type and reformat text.</p> <p>Create and label images.</p> <p>Collect and input data into a spreadsheet.</p>	<p>Use software to edit and enhance their video adding music, sounds and text on screen with transitions.</p> <p>Take photographs and recording video to tell a story.</p>	<p>Use online software for documents, presentations, forms and spreadsheets.</p> <p>Use software to work collaboratively with others.</p> <p>Understand that information found by searching the internet is not all grounded in fact.</p>	<p>their previous experience.</p> <p>Identify ways to improve and edit programs, videos, images etc.</p> <p>Use software programme Scratch to create music.</p> <p>Develop searching skills to help find relevant information on the internet.</p> <p>Learn how to use search engines effectively to find information, focussing on keyword searches and evaluating search returns.</p>	<p>testing continuously.</p> <p>Use search and word processing skills to create a presentation.</p> <p>Create and edit sound recordings for a specific purpose.</p> <p>Understand how search engines work.</p> <p>Create formulas and sorting data</p>
---	--	--	--	---	---	--

categorising objects in unplugged scenarios.	data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc.					within spreadsheets.
Represent data through physical pictograms.	Use representations to answer questions about data.	Interpret data from a spreadsheet.				Gather and analyse data in real time.
Explore branch databases through physical games.	Use software to explore and create pictograms and branching databases.				Understand how data is collected in remote or dangerous places.  Understand how data might be used to tell us about a location.	Understand how barcodes, QR codes and RFID work.
		Learn how computers are used in the wider world.		Understand that software can be used collaboratively online to work as a team.	Learn about different forms of communication that have developed with the use of technology.	Learn how 'big data' can be used to solve a problem or improve efficiency.

## Digital Literacy

EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Learn to log in and log out.	Log in and out and save work on account.	Learn how to create a strong password.  Understand how to stay safe when talking to people online and what to do if they see or hear something			Identify possible dangers online and learning how to stay safe.	

		<p>online that makes them feel upset or uncomfortable</p> <p>Identify whether information is safe or unsafe to be shared online.</p> <p>Learn to be respectful of others when sharing online and ask for their permission before sharing content.</p> <p>Learn strategies for checking if something they read online is true.</p>		<p>Recognise what appropriate behaviour is when collaborating with others online.</p> <p>Recognise that information on the internet might not be true or correct and that some sources are more trustworthy than others.</p> <p>Learn to make judgements about the accuracy of online searches.</p> <p>Identify forms of advertising online.</p>	<p>Learn what to do if they experience bullying online. Learn to use an online community safely.</p> <p>Recognise that information on the internet might not be true or correct and learning ways of checking validity.</p> <p>Evaluate the pros and cons of online communication.</p>	<p>Use search engines safely and effectively.</p>
<b>Know who to talk to for help and how to raise concern.</b>						

Hardware	Networks and data representation	Computational thinking	Programming
Using software	Using email and internet searches	Using data	Wider technology