

Computing

CURRICULUM FRAMEWORK FOR KEY STAGE 1 AND 2

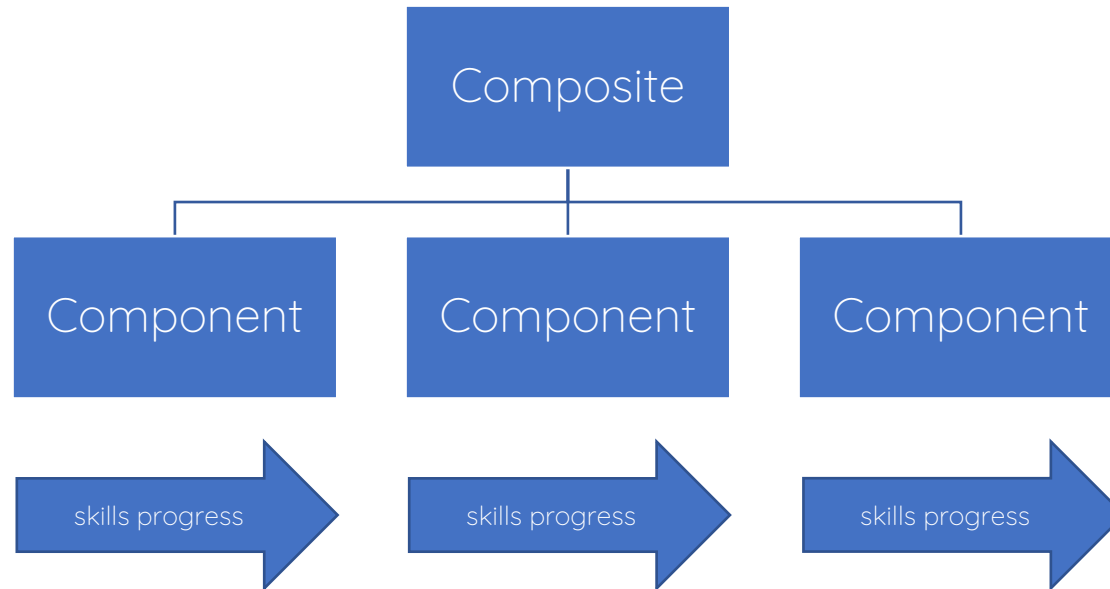
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Subject leaders need to ensure that there is clear progression through each year group towards the national curriculum requirements for their subject. This will ensure that there is a clear year-on-year acquisition of key knowledge as well as skills.

The National Curriculum is the top-level 'composite' outcomes but not the curricular components to get there – the intent. This document shows the subject progress through different components, highlighted in bold. Each component has a skill set that shows progress through each key stage.

The framework document also provides further planning opportunities for planning resources, texts, cross-curricular opportunities and cultural capital opportunities for your individual school.



Computing – Key Stage 1				
	Algorithms and Programs	Using IT and Digital content	IT in our lives	IT Safety
National Curriculum	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> understand what algorithms are; how they are implemented and programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> use technology purposefully to create, organise, store, manipulate and retrieve digital content 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recognise common uses of information technology beyond school 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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
Year 1	<p>Create instructions and plan a journey for a programmable toy</p> <ul style="list-style-type: none"> Explore outcomes when buttons are pressed in sequences on a robot Physically follow and give each other instructions to move around Create a series of simple instructions – left/right Record a route Understand forwards, backwards, up, down Input two instructions into a programmable toy to control it Plan and test a programmable toy's journey Use the word 'debug' to correct any mistakes when programming a floor robot Begin to predict what will happen for a short sequence of instructions in a program 	<p>Keyboard skills</p> <ul style="list-style-type: none"> Use the spacebar, backspace, enter, shift and arrow keys Use the @ key to enter an email address Use both hands on the keyboard <p>Use websites and email</p> <ul style="list-style-type: none"> Use a web browser to view a website Recognise what an email address looks like Send a class email Print an Internet page <p>Use a camera</p> <ul style="list-style-type: none"> Capture images and video with a camera Print a photo from a camera (with support) <p>Record sound</p> <ul style="list-style-type: none"> Record a sound and play it back Add a voice over to a slideshow of photos Record their own voices and play back to an audience Create sounds and simple music phrases using ICT tools <p>Create, store and retrieve digital content</p> <ul style="list-style-type: none"> Make a graph by entering data into a template Discuss the results shown on a graph Save and retrieve a data file with support Use a word processor to record ideas Add text and images to a template document using an image bank Load programs with support 	<p>Talk about some of the uses of IT in their own home</p> <ul style="list-style-type: none"> Know that email can be used to communicate with real people – within school, families and communities Recognise uses of technology in their homes and in the community Understand there are online tools to help create information and communicate 	<p>Use technology safely</p> <ul style="list-style-type: none"> Follow the school's Internet Safety rules Only use search engines allowed by the school Use the Internet for learning and communicating with other people Make sensible choices when navigating websites Recognise when websites show adverts and how to ignore them Know that an adult must be told if they find something inappropriate online Begin to understand that if you create something then you own it Know that personal information should not be shared online <p>Keep personal information private</p> <ul style="list-style-type: none"> Log on to the school network using a username and password Learn that many websites ask for information that is private and responsibly handle such requests

Computing – Key Stage 1				
Year 1	Algorithms and Programs	Using IT and Digital content	IT in our lives	IT Safety
Software/websites				
Topic/Curriculum opportunities				
Cultural Capital opportunities				
SMSC	<p>Spiritual</p> <p>Computing supports spiritual development by looking at how IT can bring rapid benefits to discussions and tolerance to an individual's beliefs. However, children are also exposed to the limitations and abuse of the internet where they question and justify the aims, values and principles of their own and others' belief systems.</p>	<p>Moral</p> <p>Computing supports moral development by looking at how IT developments have had an impact on the environment as technology has meant that old ways of working have been changed to help the environment.</p>	<p>Social</p> <p>Computing supports social development by completing group work within lessons as well as practical tasks. Children are required to understand about social media and the advantages these sites have brought as well as the numerous problems such as cyber-bullying.</p>	<p>Cultural</p> <p>The development in technology has impacted different cultures and backgrounds in different ways. More developed countries are able to keep pace with the developments in technology whilst less developed ones can't.</p>

Computing – Key Stage 2				
	Algorithms and Programs	Multimedia	Data handling	IT in our lives
National Curriculum	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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 given goals, including collecting, analysing, evaluating and presenting data and information 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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 given goals, including collecting, analysing, evaluating and presenting data and information 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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
Year 4	<p>Write programs that accomplish specific goals</p> <ul style="list-style-type: none"> Make accurate predications Experiment with variables to control models Make turns using specific degrees Make accurate predictions about the outcome of a program they have written Use sensors to trigger an action, such as a Probot reversing if it touches something Solve open-ended problems with a floor robot, Logo or other software using procedures to create shapes and letters Create an algorithm and a program that will use a simple selection command for a game Use an algorithm sequence more complex programming into order Debug errors in a program on a device or on screen Identify bugs in programs written by others Experience a variety of resources to extend knowledge and understanding of programming Link the use of algorithms to solve problems in maths, science, DT and other subjects <p>Design a sequence of instructions, including directional instructions</p> <ul style="list-style-type: none"> Repeat instructions to draw shapes on screen using commands Give an on-screen robot direction instructions to take them from point A to point B Create and edit procedures using Logo commands, including pen up, pen down and changing the trail of the turtle 	<p>Collect and present information</p> <ul style="list-style-type: none"> Describe their work and explain how and why they used IT Create a larger presentation that moves from slide to slide, aimed at a specific audience Use animation to move from slide to slide in a presentation Present data in an appropriate format for an audience Be confident in creating and modifying text and presentation documents to achieve a specific purpose <p>General skills</p> <ul style="list-style-type: none"> Choose an appropriate program to perform a task Plan what they are going to do and evaluate the results Use an automatic spell checker to edit spellings Explore how multimedia can create atmosphere and appeal to different audiences Use a keyboard effectively and use shortcuts Use font sizes and effects such as bullet points effectively <p>Images</p> <ul style="list-style-type: none"> Capture images using a webcam, screen capture, scanner and visualiser Copy images from a range of sources and paste into a desktop publishing package Use art programs and online tools to modify photos for a specific purpose, using a range of effects Explore video animation and green screening for a specific purpose <p>Sound</p> <ul style="list-style-type: none"> Insert sound recordings into a multimedia presentation Use IT tools to create music phrases for a specific purpose 	<p>Collect and present information</p> <ul style="list-style-type: none"> Describe their work and explain how and why they used IT Present data in an appropriate format for an audience <p>General skills</p> <ul style="list-style-type: none"> Choose an appropriate program to perform a task Plan what they are going to do and evaluate the results Copy and paste a graph or bar chart into a word processor document Use a keyboard effectively and use shortcuts <p>Data</p> <ul style="list-style-type: none"> Input data into a prepared database Plan and create a database to answer questions Sort and search a database to answer simple questions Identify inaccurate data Recognise a spreadsheet Use the terms row, column, cells Enter data into a spreadsheet Make a bar chart by selecting data Use a data logger for an investigation and interpret the findings 	<p>Internet</p> <ul style="list-style-type: none"> Use a search engine to find a specific website Frame questions and identify key words to search for information on the Internet Use tabbed browsing to open two or more web pages at the same time Open a link in a new browser window Open a document online and view it, such as a PDF Consider the reliability of information and the ways it may influence you Check who the owner is before copying photos, clipart or text <p>Networks and computing devices</p> <ul style="list-style-type: none"> Know that work can be saved in different places Understand and use the hierarchical file system Understand the use of folders - create and name new folders Talk about the school network and the different resources they can access, including the Internet <p>Communicating</p> <ul style="list-style-type: none"> Explain the benefits of IT to send messages and to communicate with others

Computing – Key Stage 2				
Year 4	Algorithms and Programs	Multimedia	Data handling	IT in our lives
Software/websites				
Topic/Curriculum opportunities				
Cultural Capital opportunities				
SMSC	<p>Spiritual</p> <p>Computing supports spiritual development by looking at how IT can bring rapid benefits to discussions and tolerance to an individual's beliefs. However, children are also exposed to the limitations and abuse of the internet where they question and justify the aims, values and principles of their own and others' belief systems.</p>	<p>Moral</p> <p>Computing supports moral development by looking at how IT developments have had an impact on the environment as technology has meant that old ways of working have been changed to help the environment.</p>	<p>Social</p> <p>Computing supports social development by completing group work within lessons as well as practical tasks. Children are required to understand about social media and the advantages these sites have brought as well as the numerous problems such as cyber-bullying.</p>	<p>Cultural</p> <p>The development in technology has impacted different cultures and backgrounds in different ways. More developed countries are able to keep pace with the developments in technology whilst less developed ones can't.</p>