



<b>Computing Progression Grid</b>		
<b>Early Years Outcome</b> <b>Understanding the World (Technology)</b> Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	<b>KS1 National Curriculum Aims</b> Pupils should be taught to: <ul style="list-style-type: none"><li>• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions;</li><li>• create and debug simple programs;</li><li>• use logical reasoning to predict the behaviour of simple programs;</li><li>• use technology purposefully to create, organise, store, manipulate and retrieve digital content;</li><li>• recognise common uses of information technology beyond school;</li><li>• 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.</li></ul>	<b>KS2 National Curriculum Aims</b> Pupils should be taught to: <ul style="list-style-type: none"><li>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts;</li><li>• use sequence, selection, and repetition in programs; work with variables and various forms of input and output;</li><li>• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs;</li><li>• 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;</li><li>• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content;</li><li>• 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;</li><li>• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li></ul>



## **Beaumont Community Primary School Computing Progression of Skills**

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The national curriculum for computing aims to ensure that all pupils by the end of year 6:

### **Intent**

At Beaumont Community Primary School, our aim is to provide a high-quality computing education which equips children to use computational thinking and creativity to understand and change the world. The curriculum will teach children key knowledge about how computer systems work in a safe and responsible manner, enabling them to become competent, confident and creative users of information technology. By the end of Key Stage 2 children will become digitally literate and able to use and express themselves and develop their ideas, at a level suitable for the future workplace and as active participants in a vast growing digital world.

### **Implementation**

At Beaumont Community Primary School, we have chosen to implement computing through the 'Teach Computing' scheme. This programme of work gives teaching staff the confidence and the knowledge to best embed and cover every element of the computing curriculum. The knowledge and skill statements build year on year to deepen and challenge our learners. Children will have access to the hardware (computers, tablets, programmable equipment) and software that they need to develop knowledge and skills of digital systems and their applications. Children will also have opportunities of additional cross-curricular work, enabling computing skills to be applied into a range of other curriculum subjects and enhancing pupils application and knowledge of using devices and programmes.

Online Safety is implemented through the 'Teach Computing' units, additional computing lessons at the start of each academic year, PATHS+ and our PSHE work (including assemblies) and additional events such as Online Safety Day, Crucial Crew and visits from the local PSCO. Children will have the opportunity to explore and respond to key issues such as digital communication, cyber-bullying, online safety, security, plagiarism, and social media.

### **Impact**

Our approach to the curriculum results in a fun, engaging and high-quality computing education. The quality of children's learning is evident in their confidence and competency to navigate digital technology and discussions with pupils about their learning. Children use digital and technological vocabulary accurately, alongside a progression in their technical skills. They use a range of hardware and software and produce high-quality purposeful outcomes. Children see the digital world as part of their world, extending beyond school, and understand that they have choices to make. Computing at Beaumont Community Primary School gives children the building blocks that enable them to pursue a wide range of interests and vocations in the next stage of their lives and ensure they are competent and respectful digital citizens.



Multimedia Text and Images						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>• use technology to explore and access digital content.</li> <li>• operate a digital device with support to fulfil a task.</li> </ul>	<ul style="list-style-type: none"> <li>• create digital content</li> <li>• choose media from a selection</li> <li>• recognise that you can edit digital content to change its appearance.</li> <li>• select basic tools/ options to change the appearance of digital content (e.g. size of paintbrush, fonts, filter on an image)</li> <li>• combine media with support to present information (e.g. image and text)</li> <li>• create simple digital content for a purpose</li> <li>• recognise that we can use technology to record and play back audio and take photographs.</li> <li>• apply edits to digital content to achieve an effect.</li> <li>• present ideas and information by combining media. e.g. images and text.</li> <li>• identify the common features of digital content. (title, images)</li> <li>• recognise that we can use different types of media to convey information. (e.g. text, photos, audio, video)</li> </ul>		<ul style="list-style-type: none"> <li>• present ideas an information by combining media independently.</li> <li>• design and create simple digital content for a purpose or audience.</li> <li>• edit digital content to improve it.</li> <li>• identify the features of a good piece of digital content.</li> <li>• explain why we use technology to create digital content.</li> <li>• recognise why we use different types of media to convey information.</li> <li>• collect, organise and present information using a range of medias.</li> <li>• design and create digital content for a specific purpose.</li> <li>• edit digital content to improve it according to feedback.</li> <li>• identify the features of a food piece of digital content and apply these in their own designs.</li> <li>• explain the benefits of using technology to present information.</li> <li>• collaborate with peers using online tools.</li> </ul>		<ul style="list-style-type: none"> <li>• Identify and use appropriate hardware and software to fulfil a specific task.</li> <li>• remix and edit a range of existing and their own media to create content.</li> <li>• consider the audience when designing and creating digital content.</li> <li>• recognise the benefits of using technology to collaborate with others.</li> <li>• identify success criteria for creating digital content for a given purpose or audience.</li> <li>• evaluate their own content against success criteria and make improvements accordingly.</li> <li>• select, combine and remix a range of media to create original content.</li> <li>• consider all steps of the design process when creating content.</li> <li>• identify the most effective tools to present information for a specific purpose.</li> <li>• explain the benefits of using technology to collaborate with others.</li> <li>• evaluate existing content in terms of effectiveness and design.</li> </ul>	



## Beaumont Community Primary School Computing Progression of Skills

Data and Information						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>access content in a range of formats.</p>	<ul style="list-style-type: none"> <li>recognise different forms of digital content.</li> <li>collect simple data on a given topic.</li> <li>present simple data using images.</li> <li>recognise tally charts and pictograms and why we use them.</li> <li>recognise tally charts, pictograms and branching databases and why we use them.</li> <li>explain information shown in a simple chart or pictogram.</li> <li>identify the key features of a digital chart or pictogram.</li> <li>collect data on a topic and present in a digital pictogram or chart.</li> <li>modify simple digital charts or pictograms by adding titles or labels.</li> </ul>		<ul style="list-style-type: none"> <li>recognise charts, pictograms and databases and why we use them.</li> <li>present information in a suitable chart.</li> <li>explore a record card database to find out specific information.</li> <li>use filters in a database to find out specific information.</li> <li>name the key parts of a digital database.</li> <li>answer and create questions about information in a database.</li> <li>name some benefits to using technology to create charts and databases.</li> <li>recognise that search engines store information in databases.</li> <li>compare database and branching data to a pictogram.</li> <li>draw conclusions from information stored in a database.</li> <li>design a questionnaire and collect a range of data on a theme.</li> <li>choose appropriate formats to present data to convey information.</li> <li>recognise that data can be communicated on digital devices and sensors automatically.</li> <li>use a computer programme to sort data by attributes.</li> <li>present the same data in a graph and in a chart.</li> <li>know that you use a web browser to access information stored on the internet.</li> </ul>			<ul style="list-style-type: none"> <li>explain the difference between data and information.</li> <li>appreciate that different programmes work with different types of data.</li> <li>know the difference between a search engine and a web browser.</li> <li>explain the basics of how to use a search engine.</li> <li>perform searches for information using advanced settings in search engines.</li> <li>use, create and compare visual databases.</li> <li>recognise what a spreadsheet is and what it is used for.</li> <li>explain the differences between physical, mobile and wireless networks.</li> <li>use simple formulae in spreadsheets to find out information from a set of data.</li> <li>collect data for a purpose and plan a spreadsheet to present effectively using relevant formulae.</li> <li>produce graphs from data in a spreadsheet.</li> <li>analyse and evaluate data and information in a spreadsheet.</li> </ul>



Programming and algorithms						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>• explore technology</li> <li>• repeat an action with technology to trigger a specific outcome.</li> </ul>	<ul style="list-style-type: none"> <li>• recognise that computers don't have a brain.</li> <li>• explain that we control computers by giving them instructions.</li> <li>• create a simple programme e.g. control a floor robot.</li> <li>• predict the outcome of a simple algorithm or programme.</li> <li>• explain what an algorithm is.</li> <li>• recognise that the order of instructions in an algorithm is important.</li> <li>• debug an error in a simple algorithm or program.</li> <li>• explain that computers have no intelligence and we must programme them to do things.</li> <li>• create a programme with multiple steps.</li> <li>• predict the outcome of an algorithm or programme with multiple steps.</li> <li>• recognise that the instructions in an algorithm need to be clear and unambiguous.</li> <li>• identify and correct errors in each algorithm or programme and recognise the term debugging.</li> <li>• explain what an algorithm is and that when inputted on a computer it is called a programme.</li> <li>• plan out a programme by creating an algorithm.</li> </ul>	<ul style="list-style-type: none"> <li>• predict the outcome of a block of text-based programme.</li> <li>• modify an existing programme.</li> <li>• Identify repeated steps in a programme or algorithm.</li> <li>• create examples of algorithms containing count-controlled loops.</li> <li>• use a count-controlled loop to make a programme more efficient.</li> <li>• recognise that we can create an algorithm to help plan out a programme.</li> <li>• recognise and use a forever loop in a programme or algorithm.</li> <li>• identify errors in a block or text-based programme and correct them.</li> <li>• recognise that different inputs can be used to control a programme.</li> <li>• create a programme using a range of events or inputs to control what happens.</li> <li>• recognise that we can decompose a problem into smaller parts to help solve it.</li> <li>• explain when to use forever loops and count-controlled loops in programmes.</li> <li>• recognise selection in a programme or algorithm.</li> <li>• use selection in algorithms or programmes to alter what happens when a condition changes.</li> <li>• design a programme for a purpose.</li> <li>• recognise common mistakes in programmes and how to correct them.</li> </ul>	<ul style="list-style-type: none"> <li>• name a range of sensors in physical systems.</li> <li>• recognise that different solutions may exist for the same problems.</li> <li>• predict what will happen in the programme or algorithm when the input changes.</li> <li>• use two-way selection in programmes and algorithms.</li> <li>• recognise variables in a programme and what they do.</li> <li>• create programmes including repeat until loops.</li> <li>• create and use simple variables.</li> <li>• evaluate a programme and make improvements to the code or design accordingly.</li> <li>• create an algorithm for a physical system containing a sensor.</li> <li>• design and programme a physical computing system that uses sensors.</li> <li>• recognise and use procedures (sub-routines) in programmes.</li> <li>• plan out a programme in detail, including task, algorithm, code and execution level.</li> <li>• explain common errors in programmes and how to fix them.</li> <li>• use nested selection statements in a programme or algorithm.</li> <li>• combine a variable with relational operators (&lt; = &gt;) to determine when a programme changes.</li> <li>• recognise key concepts in a range of languages and contexts.</li> </ul>			



## Beaumont Community Primary School Computing Progression of Skills

### Computing system and network.

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>• use different digital devices.</li> <li>• recognise a selection of digital devices.</li> <li>• select a digital device to fulfil a specific task (e.g. camera/iPad for a photo)</li> </ul>	<ul style="list-style-type: none"> <li>• recognise a range of digital devices.</li> <li>• select a digital device to fulfil a specific task.</li> <li>• name a range of digital devices.</li> <li>• log on to the school computers.</li> <li>• identify the basic parts of a computer.</li> <li>• use suitable access device (keyboard, mouse) to access and control an activity on a computer.</li> <li>• open key applications independently.</li> <li>• save and open files with support.</li> <li>• recognise that a range of digital devices contain computers.</li> <li>• explain what the basic parts of a computer are used for.</li> <li>• identify and use input devices (keyboard, mouse etc)</li> <li>• open key applications independently.</li> <li>• save and open files to/from a given folder.</li> <li>• add an image to a document from a given folder.</li> </ul>	<ul style="list-style-type: none"> <li>• describe what a computer is (e.g. input &gt; process &gt; output)</li> <li>• explain the differences between input and output devices on a computer.</li> <li>• know where to save and open files.</li> <li>• save files with appropriate names.</li> <li>• use a keyboard appropriately to type text.</li> <li>• use left, right and double click on a mouse.</li> <li>• add an image to a document from the internet. Resize and move an image in a document.</li> <li>• use a search engine to find simple information.</li> <li>• recognise that school computers are connected.</li> <li>• recognise that you can organise files using folders.</li> <li>• explain what a good file name would look like.</li> <li>• use key parts of a keyboard effectively.</li> <li>• know how to copy or paste text or images within a document.</li> <li>• crop an image and apply simple filters.</li> <li>• use search engines to find specific information.</li> <li>• recognise that school computers are connected on a network.</li> </ul>	<ul style="list-style-type: none"> <li>• type using fingers on both hands.</li> <li>• use common keyboard shortcuts.</li> <li>• explain what makes a strong password.</li> <li>• use folders to organise files.</li> <li>• know how to mute and unmute audio on a computer or tablet.</li> <li>• recognise that there is more than one search engine and that they may produce different results.</li> <li>• use a search engine effectively to find information and images.</li> <li>• know how to search for an application on a computer or tablet.</li> <li>• type effectively using both hands.</li> <li>• use a range of keyboard shortcuts.</li> <li>• recognise that different devices may have different operating systems.</li> <li>• organise files effectively using folders and appropriate file names.</li> <li>• explain the basic function of a search engine.</li> <li>• use the advanced search tools when using a search engine to find specific information and images.</li> <li>• recognise common file types and extensions (e.g. jpeg, png, doc)</li> <li>• recognise a range of internet services (e.g. email, world wide web, Skype etc)</li> </ul>			

### Online Safety

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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## Beaumont Community Primary School Computing Progression of Skills

<ul style="list-style-type: none"><li>• talk about why it is important to be polite and kind.</li><li>• know that the internet can be safe and unsafe.</li></ul>	<ul style="list-style-type: none"><li>• Identify trusted adults at home and school.</li><li>• know that strangers use online services.</li><li>• know that some online content is inappropriate.</li><li>• know that damaged or strange devices should not be touched.</li><li>• know that there are good choices about when and where to use a device.</li><li>• know that personal information should not be shared with strangers.</li><li>• understand where to go for help and support when he/she has concerns about content or contact on the internet and other online technologies.</li><li>• identify trusted adults within the family, school and emergency services.</li><li>• know that strangers who ask questions may be dangerous.</li><li>• know that it is good to check with someone before accessing something online.</li><li>• know that being patient with devices is a good choice.</li><li>• know the difference between a device being on and on 'standby'.</li><li>• know to check before giving permission.</li></ul>	<ul style="list-style-type: none"><li>• identify a wider range of places/ways to report concerns.</li><li>• know that going online in a private place is a bad idea.</li><li>• know that not everything online is true.</li><li>• know that devices can be distracting.</li><li>• understand that using a device at certain times can be disrespectful.</li><li>• know what makes an effective password.</li><li>• know how to use a wider range of places/ways to report concerns.</li><li>• know that online gifts are not always what they seem.</li><li>• know that opinions should be supported by facts.</li><li>• know that devices can be distracting to other people.</li><li>• understand that breaking age limits can have consequences.</li><li>• know what a digital footprint is.</li></ul>	<ul style="list-style-type: none"><li>• understand the different benefits of reporting systems.</li><li>• know that asking permission before capturing an image is important.</li><li>• know that people can learn to show respect and self-control.</li><li>• know what to do if they find a lost device.</li><li>• understand how using a device at night can affect their wellbeing.</li><li>• know that apps may collect lots of data.</li><li>• understand how reporting a concerns works at a new school.</li><li>• know that sharing images can have consequences.</li><li>• know that some content can promote stereotypes.</li><li>• understand that losing patience with a device can have bad consequences.</li><li>• understand that devices cost valuable resources.</li><li>• know their data rights and responsibilities</li></ul>
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