



## PROGRESSION OF SKILLS IN COMPUTING

|                       | EYFS                                                                                                                                                                                                                                                 | Year 1                                                                                                                                                                                                                                                                                                                                                                               | Year 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Year 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Year 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Year 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Year 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| <b>Children will:</b> |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>E -safety</b>      | <ul style="list-style-type: none"> <li>• Know to tell an adult before using an electronic device</li> <li>• Know to keep passwords safe</li> <li>• Know to tell an adult if they are unsure about something they see on a digital device.</li> </ul> | <ul style="list-style-type: none"> <li>• Keep their password private.</li> <li>• Know what personal information is.</li> <li>• Tell an adult when they see something unexpected or worrying online.</li> <li>• Talk about why it's important to be kind and polite.</li> <li>• Recognise an age appropriate website.</li> <li>• agree and follow sensible e-safety rules.</li> </ul> | <ul style="list-style-type: none"> <li>• explain why they need to keep their password and personal information private.</li> <li>• Describe the things that happen online that they must tell an adult about.</li> <li>• Talk about why they should go online for a short amount of time.</li> <li>• Talk about why it is important to be kind and polite online and in real life.</li> <li>• Know that not everyone is who they say they are on the internet.</li> </ul> | <ul style="list-style-type: none"> <li>• Talk about what makes a secure password and why they are important.</li> <li>• Protect their personal information when they do different things online.</li> <li>• Use the safety features of websites as well as reporting concerns to an adult.</li> <li>• Recognise websites and games appropriate for their age.</li> <li>• Make good choices about how long they spend online.</li> <li>• Ask an adult before downloading files and games from the internet.</li> <li>• Be able to post positive comments online.</li> </ul> | <ul style="list-style-type: none"> <li>• Choose a secure password when they using a website.</li> <li>• Talk about the ways they can protect themselves and their friends from harm online.</li> <li>• Use the safety features of websites as well as reporting concerns to an adult.</li> <li>• Know that anything they post online can be seen by others.</li> <li>• Choose websites and games that are appropriate for their age.</li> <li>• Can help their friends make good choices about the time they spend online.</li> <li>• Talk about why they need to ask a trusted adult before downloading files and games from the internet.</li> <li>• Be able to comment positively and respectfully online.</li> </ul> | <ul style="list-style-type: none"> <li>• Protect their password and other personal information.</li> <li>• Explain why they need to protect themselves and their friends and the best ways to do this, including reporting concerns to an adult.</li> <li>• Know that anything they post online can be seen, <b>used and may affect others</b>.</li> <li>• Talk about the dangers of spending too long online or playing a game.</li> <li>• Explain the importance of communicating kindly and respectfully.</li> <li>• Discuss the importance of choosing an age-appropriate website or game.</li> <li>• Explain why they need to protect their computer or device from harm.</li> <li>• Know which resources on the internet can be downloaded and used.</li> </ul> | <ul style="list-style-type: none"> <li>• Protect their password and other personal information.</li> <li>• Explain the consequences of sharing too much information about themselves online.</li> <li>• Support friends to protect themselves and make good choices online, including reporting concerns to an adult.</li> <li>• Explain the consequences of spending too much time online or on a game.</li> <li>• Explain the consequences to themselves and others of not communicating kindly and respectfully.</li> <li>• Protect their computer or device from harm on the internet.</li> </ul> |

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| Programming | <ul style="list-style-type: none"> <li>• Break down tasks into small steps</li> <li>• Spot patterns and compare similarities and differences</li> <li>• Follow instructions and/or sequence events / objects.</li> <li>• Debug problems (tinker – doing something systematically)</li> </ul> | <ul style="list-style-type: none"> <li>• Give instructions to a friend and follow their instructions to move around.</li> <li>• Describe what happens when they press buttons on a robot.</li> <li>• To create simple algorithms to control a device or programme.</li> <li>• Describe what actions they will need to do to make something happen and begin to use the word 'algorithm'.</li> <li>• Begin to predict what will happen for a short sequence of instructions.</li> <li>• List the commands that can be given to a device.</li> <li>• Debug a simple algorithm.</li> </ul> | <ul style="list-style-type: none"> <li>• Give instructions to a friend (using forward, backward and turn) and physically follow their instructions.</li> <li>• Program a robot or software to do sequence of algorithms.</li> <li>• Use programming software to make objects move.</li> <li>• Watch a program execute and spot where it goes wrong so that they can debug it.</li> <li>• Trace a sequence to make a prediction.</li> <li>• Explain what an algorithm is.</li> </ul> | <ul style="list-style-type: none"> <li>• Understand what a sequence is.</li> <li>• Break an open-ended problem up into smaller parts.</li> <li>• Put programming commands into a sequence to achieve a specific outcome.</li> <li>• Keep testing their program and can recognise when they need to debug it.</li> <li>• Use repeat commands.</li> <li>• Describe the algorithm they will need for a simple task.</li> <li>• Detect a problem in an algorithm.</li> </ul> | <ul style="list-style-type: none"> <li>• Use a variety of tools to create a program.</li> <li>• Recognise an error in a program and debug it.</li> <li>• Recognise that an algorithm will help to sequence more complex programs.</li> <li>• Recognise that using algorithms will also help solve problems in other learning such as maths, science and design technology.</li> <li>• Identify and explain loops within a programme.</li> <li>• plan and create a programme that creates loops to produce given outcomes.</li> <li>• Design a programme for a particular purpose.</li> </ul> | <ul style="list-style-type: none"> <li>• Name a range of sensors in physical systems.</li> <li>• Predict what will happen in a program or algorithm when the input changes.</li> <li>• Use two-way selection i.e. if... then...else...</li> <li>• Recognise variables in a program .</li> <li>• Create programs including 'repeat until' loops.</li> <li>• Create and use simple variables, e.g. to keep score.</li> <li>• Create an algorithm for a physical system (with sensor).</li> </ul> | <ul style="list-style-type: none"> <li>• Identify variables within an existing programme</li> <li>• Experiment with values in programmes.</li> <li>• Update programmes with variables</li> <li>• Design code that includes variables.</li> <li>• Use conditional statements in algorithms.</li> <li>• Design a project that uses inputs and outputs on a controllable device.</li> <li>• Evaluate the effectiveness and efficiency of their algorithm while they continually test the programming of that algorithm.</li> <li>• Use logical reasoning to detect and correct errors in algorithms and programs.</li> </ul> |
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| Data and information |                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Group objects using properties.</li> <li>• Describe objects using labels.</li> <li>• Record and present the information found.</li> </ul>                                                                                                                      | <ul style="list-style-type: none"> <li>• To enter data onto a computer.</li> <li>• Explain information on a pictogram</li> <li>• Modify pictograms (E.G. adding title, labels or items)</li> <li>• Create pictograms from a set of data.</li> <li>• Collect data using an appropriate method (E.G. tally)</li> </ul>                                                                                  | <ul style="list-style-type: none"> <li>• Read a branching database to identify objects.</li> <li>• Create questions with yes/no answers.</li> <li>• Create a branching database.</li> </ul>                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• Organise data in different ways.</li> <li>• Collect data and identify where it could be inaccurate.</li> <li>• Plan, create and search a database to answer questions.</li> <li>• Choose the best way to present data to my friends.</li> <li>• Use a data logger to record and share readings with others.</li> </ul>                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Use a spreadsheet and database to collect and record data.</li> <li>• Choose an appropriate tool to help collect data.</li> <li>• Present data in an appropriate way.</li> <li>• Search a database using different operators to refine their search.</li> <li>• Talk about mistakes in data and suggest how it could be checked.</li> </ul>                                                                                  | <ul style="list-style-type: none"> <li>• Recognise a spreadsheet and how it can be used.</li> <li>• Use simple formulae within a spreadsheet.</li> <li>• Use functions to create new data.</li> <li>• Choose suitable ways to present the data.</li> </ul>                                                                                                                                      |
| Creating media       | <ul style="list-style-type: none"> <li>• Write using a digital device (E.G on Busy Things)</li> <li>• Draw using a digital device.</li> <li>• To take photos using a digital device</li> </ul> | <ul style="list-style-type: none"> <li>• Create media using freehand tools (pen tool)</li> <li>• Use line and shape tools to create media</li> <li>• Use the keyboard to add, delete and space text for others to read.</li> <li>• Save information in a special place and retrieve it again</li> </ul> | <ul style="list-style-type: none"> <li>• Save and open files on the device they use.</li> <li>• Capture images using technology.</li> <li>• Make choices when taking a photograph (light, zoom)</li> <li>• Improve a photograph by retaking it.</li> <li>• Experiment with musical patterns and sounds on a computer. (E.G change the tempo)</li> <li>• Compose a rhythm using a computer.</li> </ul> | <ul style="list-style-type: none"> <li>• Combine text and images in different ways to convey information.</li> <li>• Recognise that fonts and effects can be added for different purposes.</li> <li>• Resize and rotate images.</li> <li>• Choose appropriate page settings and understand that different layouts suit different purposes.</li> <li>• Plan my content before creating it.</li> <li>• Review completed project.</li> </ul> | <ul style="list-style-type: none"> <li>• Identify the features of a good piece of digital content and use these to plan their own.</li> <li>• Record sound using a device.</li> <li>• Edit recorded sound (E.G. layering, deleting audio)</li> <li>• Give constructive feedback to their friends to help them improve and refine each other's work.</li> <li>• Understand that images can be altered using technology.</li> <li>• Edit images in a variety of ways (E.G. cloning, adding filters, cropping)</li> <li>• Understand that content is copyrighted and where to find copyright free content.</li> </ul> | <ul style="list-style-type: none"> <li>• Compose a video by planning and recording it.</li> <li>• Use software to combine their video including using editing tools to refine their work.</li> <li>• Select, use and combine the appropriate technology tools to create effects that will have an impact on others.</li> <li>• Use different drawing tools to create images.</li> <li>• Create images by duplicating, modifying and repositioning objects.</li> </ul> | <ul style="list-style-type: none"> <li>• Consider steps of the design process to produce digital content.</li> <li>• Select and combine a range of tools and media to create digital content.</li> <li>• Use hyperlinks to link to other pages or websites.</li> <li>• Understand that computers can be used to create 3D objects.</li> <li>• Combine objects to create a 3D object.</li> </ul> |

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| Computer systems and networks | <ul style="list-style-type: none"> <li>• Know how to turn on electronic devices.</li> <li>• Know that they need to log on to certain devices.</li> <li>• Recognise a keyboard and mouse as how they control the computer.</li> </ul> | <ul style="list-style-type: none"> <li>• Recognise and name a range of digital devices</li> <li>• Log on to the school computer independently</li> <li>• Be able to identify and use the main parts of a computer (E.G keyboard and mouse)</li> </ul> | <ul style="list-style-type: none"> <li>• Identify uses of Information technology inside and outside of school/</li> <li>• Describe the uses of information technology inside and outside of school</li> </ul> | <ul style="list-style-type: none"> <li>• Identify inputs and output devices.</li> <li>• Understand how inputs are processed to produce an output</li> <li>• Recognise that school computers are connected (a network)</li> <li>• Explain how networks are used to share information</li> </ul> | <ul style="list-style-type: none"> <li>• To recognise the World Wide Web (WWW) is part of the internet.</li> <li>• Explain different types of media / content that can be shared on the WWW.</li> <li>• Evaluate the reliability of content on the WWW</li> <li>• Understand how to access and be safe on the internet</li> </ul> | <ul style="list-style-type: none"> <li>• Identify what a search engine is.</li> <li>• Use search engines to find information.</li> <li>• Understand that different search terms can produce different results.</li> <li>• Evaluate the results of search terms.</li> </ul> | <ul style="list-style-type: none"> <li>• Recognise how data is transferred across the internet.</li> <li>• Recognise the benefits of sharing information online.</li> <li>• Be able to decide what information should be and should not be shared online.</li> <li>• Collaborate online with peers on a project.</li> </ul> |
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