

Bluecoat Primary Academy Computing Progression Document 2020

**Bluecoat Primary Academy Computing Intent Statement**

In a world that is dominated by technology and social media, we aim to give our pupils the life-skills that will enable them to embrace and utilise technology in a socially responsible and safe way. At Bluecoat Primary we want our children to leave as independent computer users with a secure knowledge of how to identify reliable information and sources. Our goal is that our children will become capable technology users in the 21st century classroom by delivering accessible, yet challenging lessons for every child in our school. Through these lessons we want our children to become confident, creative and resilient users of technology who have a range of skills that they can apply to various subjects across our curriculum. We have a duty of care to our children to educate them on the importance of a healthy balance between screen time and rea life play and the ongoing affect that social media platforms can have on our mental health. Our overarching aim is that our children develop as computer literate individuals but also as responsible digital citizens within our wider and global community that can remain safe online, as well as in the real world.

**Computing Progression Document Guide**

We have designed our computing curriculum to build on a range of skills that will give our children the confidence and knowledge to be responsible and safe technology users throughout their primary journey. This will enable them to have the knowledge and skills that they need, in order to aide them, in the best possible start to their Secondary education.

In line with the other subjects taught at Bluecoat Primary, we teach computing through small steps which allow children to develop the depth of their knowledge and apply these skills to a range of situations. Where appropriate, meaningful links will be made to the class’ key question to allow a wider, in depth knowledge of this subject as well as individual subjects.

Each year group will access age appropriate material for the following units; e-safety, programming, handling data, multimedia and technology in our lives.

Below is a breakdown of some of the things covered in each unit, however, these are age dependent to ensure a progression of skills from Nursery to Year 6.

**E- Safety** – teaching how to stay safe online; *SMART rules, grooming, keeping personal data safe, social media*

**Programming** - Teaching about algorithms (instructions) and using buttons on floor robots and in coding programs to make an object move (Purple Mash and Scratch). We also look at debugging errors in code and start to predict the outcome of what will happen from reading code.

**Handling data** – We will collect data in different forms (pictures, videos, sounds) and present them using a computer. Some year groups will use a data logger to gather information for a database and create their own branching database.

**Multimedia** – Teaching how to save, open and edit files, as well as present information in different ways using various programs and platforms; powerpoint, word, etc.

**Technology in our lives** - Identify different types of technology and their benefits. Consider the differences between the internet and the physical world. Understand that people have created information that is online and look at fake news and the reliability of information.

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| Computing  Year Group: Three & Four Year Olds | | | | |
| **Personal, Social and Emotional Development**  • Increasingly follow rules, understanding why they are important. | **Understanding the World**  • Explore how things work  **Physical Development**  • Match their developing physical skills to tasks and activities in the setting |  | **Understanding the World**  • Explore how things work  **Physical Development**  • Match their developing physical skills to tasks and activities in the setting |  |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I can identify rules that help keep us safe and healthy in and beyond the home when using technology. | * I can make choices about the buttons and icons I press, touch or click on. * I can turn equipment on/off * I can operate mechanical toys * I can turn on a technical tool using a control. * I am interested in knobs and pulleys on tools. * I can press buttons or lift flaps to achieve a sound or movement or image on a toy. | * I can tell you about different kinds of information such as pictures, video, text and sound. | * I can move objects on a screen. * I can play a game on an app. * I can play age-appropriate games on a computer. * I know I can find information from computers. | * I can tell you about technology that is used at home and in school. * I am careful with technology devices. |

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| Computing  Year Group: Reception | | | | |
| **Physical Development**  • Know and talk about the different factors that support their overall health and wellbeing:  -sensible amounts of ‘screen time’ | **Physical Development**  • Develop their small motor skills so that they can use a range of tools competently, safely and confidently.  **Personal, Social and Emotional Development**  • Show resilience and perseverance in the face of a challenge. |  | **Physical Development**  • Develop their small motor skills so that they can use a range of tools competently, safely and confidently.  **Personal, Social and Emotional Development**  • Show resilience and perseverance in the face of a challenge.  **Expressive Arts and Design**  • Explore, use and refine a variety of artistic effects to express their ideas and feelings. |  |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I can tell an adult when something worrying or unexpected happens while I am using the Internet. * I can be kind to my friends. * I can talk about the amount of time I spend using a computer / tablet / game device. * I can identify rules that help keep us safe and healthy in and beyond the home when using technology. | * I can make a floor robot move. * I can make choices about the buttons and icons I press, touch or click on. * I can use an age-appropriate app. | * I can tell you about different kinds of information such as pictures, video, text and sound. | * I can move objects on a screen. * I can create shapes and text on a screen. * I can use technology to show my learning. * I can use a laptop to find information. * I can use a range of everyday technology. * I can use an ipad to take photographs of my learning/special event * I can use an ipad to record a video of my learning/special event | * I can tell you about technology that is used at home and in school. * I am careful with technology devices. |

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| Computing  Year Group: ELG | | | | |
| **Personal, Social and Emotional Development**  ***Managing Self***  • Explain the reasons for rules, know right from wrong and try to behave accordingly. | **Personal, Social and Emotional Development**  ***Managing Self***  • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. |  | **Personal, Social and Emotional Development**  ***Managing Self***  • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.  **Expressive Arts and Design**  ***Creating with Materials***  • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. |  |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I can tell an adult when something worrying or unexpected happens while I am using the Internet. * I can be kind to my friends. * I can talk about the amount of time I spend using a computer / tablet / game device. * I am careful with technology devices. * I can identify rules that help keep us safe and healthy in and beyond the home when using technology. | * I can make a floor robot move. * I can make choices about the buttons and icons I press, touch or click on. * I can use an app to complete a simple programme. * I can use an age-appropriate app. | * I can tell you about different kinds of information such as pictures, video, text and sound. | * I can move objects on a screen. * I can create shapes and text on a screen. * I can use technology to show my learning. * I can use a laptop to find information. * I can use a range of everyday technology. * I can use an ipad to take photographs of my learning/special event * I can use an ipad to record a video of my learning/special event | * I can tell you about technology that is used at home and in school. * I am careful with technology devices. |

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| Computing  Year Group: 1 | | | | |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I can keep my password private. * I can tell you what personal information is. * I can tell an adult when I see something unexpected or worrying online. * I can talk about why it’s important to be kind and polite. * I can recognise an age appropriate website. * I can agree and follow sensible e-Safety rules. | * I can give instructions to my friend and follow their instructions to move around. * I can describe what happens when I press buttons on a robot. * I can press the buttons in the correct order to make my robot do what I want. * I can describe what actions I will need to do to make something happen and begin to use the word algorithm. * I can begin to predict what will happen for a short sequence of instructions. * I can begin to use software/apps to create movement and patterns on a screen. * I can use the word debug when I correct mistakes when I program. | * I can talk about the different ways in which information can be shown. * I can use technology to collect information, including photos, video and sound. * I can sort different kinds of information and present it to others. * I can add information to a pictograph and talk to you about what I have found out. | * I can be creative with different technology tools. * I can use technology to create and present my ideas. * I can use the keyboard or a word bank on my device to enter text. * I can save information in a special place and retrieve it again. | * I can recognise the ways we use technology in our classroom. * I can recognise ways that technology is used in my home and community. * I can use links to websites to find information. * I can begin to identify some of the benefits of using technology. |

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| Computing  Year Group: 2 | | | | |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I can explain why I need to keep my password and personal information private. * I can describe the things that happen online that I must tell an adult about. * I can talk about why I should go online for a short amount of time. * I can talk about why it is important to be kind and polite online and in real life. * I know that not everyone is who they say they are on the Internet. | * I can give instructions to my friend (using forward, backward and turn) and physically follow their instructions. * I can tell you the order I need to do things to make something happen and talk about this as an algorithm. * I can program a robot or software to do a particular task. * I can look at my friend’s program and tell you what will happen. * I can use programming software to make objects move. * I can watch a program execute and spot where it goes wrong so that I can debug it. | * I talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder. * I can make and save a chart or graph using the data I collect. * I can talk about the data that is shown in my chart or graph. * I am starting to understand a branching database. * I can tell you what kind of information I could use to help me investigate a question. | * I can use technology to organise and present my ideas in different ways. * I can use the keyboard on my device to add, delete and space text for others to read. * I can tell you about an online tool that will help me to share my ideas with other people. * I can save and open files on the device I use. | * I can tell you why I use technology in the classroom. * I can tell you why I use technology in my home and community. * I am starting to understand that other people have created the information I use. * I can identify benefits of using technology including finding information, creating and communicating. * I can talk about the differences between the Internet and things in the physical world. |

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| Computing  Year Group: 3 | | | | |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I can talk about what makes a secure password and why they are important. * I can protect my personal information when I do different things online. * I can use the safety features of websites as well as reporting concerns to an adult. * I can recognise websites and games appropriate for my age. * I can make good choices about how long I spend online. * I ask an adult before downloading files and games from the Internet. * I can post positive comments online. | * I can break an open-ended problem up into smaller parts. * I can put programming commands into a sequence to achieve a specific outcome. * I keep testing my program and can recognise when I need to debug it. * I can use repeat commands. * I can describe the algorithm I will need for a simple task. * I can detect a problem in an algorithm which could result in unsuccessful programming. | * I can talk about the different ways data can be organised. * I can search a ready-made database to answer questions. * I can collect data to help me answer a question. * I can add to a database. * I can make a branching database. * I can use a data logger to monitor changes and can talk about the information collected. | * I can create different effects with different technology tools. * I can combine a mixture of text, graphics and sound to share my ideas and learning. * I can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker. * I can evaluate my work and improve its effectiveness. * I can use an appropriate tool to share my work online. | * I can save and retrieve work on the Internet, the school network or my own device. * I can talk about the parts of a computer. * I can tell you ways to communicate with others online. * I can describe the World Wide Web as the part of the Internet that contains websites. * I can use search tools to find and use an appropriate website. * I think about whether I can use images that I find online in my own work. |

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| Computing  Year Group: 4 | | | | |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I choose a secure password when I am using a website. * I can talk about the ways I can protect myself and my friends from harm online. * I use the safety features of websites as well as reporting concerns to an adult. * I know that anything I post online can be seen by others. * I choose websites and games that are appropriate for my age. * I can help my friends make good choices about the time they spend online. * I can talk about why I need to ask a trusted adult before downloading files and games from the Internet. * I comment positively and respectfully online. | * I can use logical thinking to solve an open-ended problem by breaking it up into smaller parts. * I can use an efficient procedure to simplify a program. * I can use a sensor to detect a change which can select an action within my program. * I know that I need to keep testing my program while I am putting it together. * I can use a variety of tools to create a program. * I can recognise an error in a program and debug it. * I recognise that an algorithm will help me to sequence more complex programs. * I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology. | * I can organise data in different ways. * I can collect data and identify where it could be inaccurate. * I can plan, create and search a database to answer questions. * I can choose the best way to present data to my friends. * I can use a data logger to record and share my readings with my friends. | * I can use photos, video and sound to create an atmosphere when presenting to different audiences. * I am confident to explore new media to extend what I can achieve. * I can change the appearance of text to increase its effectiveness. * I can create, modify and present documents for a particular purpose. * I can use a keyboard confidently and make use of a spellchecker to write and review my work. * I can use an appropriate tool to share my work and collaborate online. * I can give constructive feedback to my friends to help them improve their work and refine my own work. | * I can tell you whether a resource I am using is on the Internet, the school network or my own device. * I can identify key words to use when searching safely on the World Wide Web. * I think about the reliability of information I read on the World Wide Web. * I can tell you how to check who owns photos, text and clipart. * I can create a hyperlink to a resource on the World Wide Web. |

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| Computing  Year Group: 5 | | | | |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I protect my password and other personal information. * I can explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult. * I know that anything I post online can be seen, used and may affect others. * I can talk about the dangers of spending too long online or playing a game. * I can explain the importance of communicating kindly and respectfully. * I can discuss the importance of choosing an age-appropriate website or game. * I can explain why I need to protect my computer or device from harm. * I know which resources on the Internet I can download and use. | * I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. * I can refine a procedure using repeat commands to improve a program. * I can use a variable to increase programming possibilities. * I can change an input to a program to achieve a different output. * I can use ‘if’ and ‘then’ commands to select an action. * I can talk about how a computer model can provide information about a physical system. * I can use logical reasoning to detect and debug mistakes in a program. * I use logical thinking, imagination and creativity to extend a program. | * I can use a spreadsheet and database to collect and record data. * I can choose an appropriate tool to help me collect data. * I can present data in an appropriate way. * I can search a database using different operators to refine my search. * I can talk about mistakes in data and suggest how it could be checked. | * I can use text, photo, sound and video editing tools to refine my work. * I can use the skills I have already developed to create content using unfamiliar technology. * I can select, use and combine the appropriate technology tools to create effects that will have an impact on others. * I can select an appropriate online or offline tool to create and share ideas. * I can review and improve my own work and support others to improve their work. | * I can describe different parts of the Internet. * I can use different online communication tools for different purposes. * I can use a search engine to find appropriate information and check its reliability. * I can recognise and evaluate different types of information I find on the World Wide Web. * I can describe the different parts of a webpage. * I can find out who the information on a webpage belongs to. |

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| Computing  Year Group: 6 | | | | |
| **e-Safety** | **Programming** | **Handling Data** | **Multimedia** | **Technology in our Lives** |
| * I protect my password and other personal information. * I can explain the consequences of sharing too much about myself online. * I support my friends to protect themselves and make good choices online, including reporting concerns to an adult. * I can explain the consequences of spending too much time online or on a game. * I can explain the consequences to myself and others of not communicating kindly and respectfully. * I protect my computer or device from harm on the Internet. | * I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. * I can explain and program each of the steps in my algorithm. * I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. * I can recognise when I need to use a variable to achieve a required output. * I can use a variable and operators to stop a program. * I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen. * I can use logical reasoning to detect and correct errors in algorithms and programs. | * I can plan the process needed to investigate the world around me. * I can select the most effective tool to collect data for my investigation. * I can check the data I collect for accuracy and plausibility. * I can interpret the data I collect. * I can present the data I collect in an appropriate way. * I use the skills I have developed to interrogate a database. | * I can talk about audience, atmosphere and structure when planning a particular outcome. * I can confidently identify the potential of unfamiliar technology to increase my creativity. * I can combine a range of media, recognising the contribution of each to achieve a particular outcome. * I can tell you why I select a particular online tool for a specific purpose. * I can be digitally discerning when evaluating the effectiveness of my own work and the work of others. | * I can tell you the Internet services I need to use for different purposes. * I can describe how information is transported on the Internet. * I can select an appropriate tool to communicate and collaborate online. * I can talk about the way search results are selected and ranked. * I can check the reliability of a website. * I can tell you about copyright and acknowledge the sources of information that I find online. |