**Computing Curriculum Map/ Unit Summary Overview**

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| Nursery  (Three and Four Year Olds) | Throughout the year, children will take early steps in exploring different technology all around them at home and at school. During teacher led lessons, children will use phonics and maths apps to develop fine motor skills. Children will also begin to use iPads themselves, taking selfies and they are encouraged to take photos of things they have created. They will also be able to follow rules regarding careful and safe use of technology. | | |
| Reception | Throughout the year, children will continue to take steps in exploring different technology all around them at home and at school. Children will continue to develop their fine motor skills by using different apps on iPads to achieve given goals and begin to problem solve playing different games. They will begin to familiarise themselves with beebots, giving the beebots simple directions to follow. They will be able to follow rules regarding careful and safe use of technology, and begin to understand terms such as screen time in order to support their overall wellbeing. | | |
|  | Autumn Term | Spring Term | Summer Term |
| Year 1 | Computing systems and networks – Technology around us  Develop your learners’ understanding of technology and how it can help them. They will become more familiar with the different components of a computer by developing their keyboard and mouse skills, and also start to consider how to use technology responsibly.  <https://teachcomputing.org/curriculum/key-stage-1/computing-systems-and-networks-technology-around-us> | Creating media – Digital painting  Explore the world of digital art and its exciting range of creative tools with your learners. Empower them to create their own paintings, while getting inspiration from a range of other artists. Conclude by asking them to consider their preferences when painting with, and without, the use of digital devices.  <https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-painting> | Programming – Moving a robot  This unit introduces learners to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of written algorithms.  <https://teachcomputing.org/curriculum/key-stage-1/programming-a-moving-a-robot> |
| Year 2 | Computing systems and networks – IT around us  How is information technology (IT) being used for good in our lives? With an initial focus on IT in the home, learners explore how IT benefits society in places such as shops, libraries, and hospitals. Whilst discussing the responsible use of technology, and how to make smart choices when using it.  <https://teachcomputing.org/curriculum/key-stage-1/computing-systems-and-networks-it-around-us> | Programming – code.org Course A  Technology has a language and it is called code. code.org Course A first teaches learners how to use the basic skills of code writing including dragging and dropping. It then teaches learners to write basic instructional code using visual-based code to develop problem-solving skills, encourage persistence and promote creativity. These lessons highlight key coding concepts including sequencing and loops and demonstrate how coding is a way of thinking that can be applied to other learning areas.  <https://studio.code.org/s/coursea-2021> | Creating media – Digital photography  Learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real.  <https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-photography>  Creating Media – Digital Writing (laptops)  Learners will be introduced to using laptops to create content. They will develop their understanding of the various aspects of using a computer. They will begin to familiarise themselves with how to use laptops to create and store content. They will become more familiar with using a keyboard and mouse to enter and remove text, change the look of their text, and consider the differences between using a computer to create text, and writing text on paper.  <https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-writing> |
| Year 3 | Computing systems and networks – Connecting computers  Challenge your learners to develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. Start by comparing digital and non-digital devices, before introducing them to computer networks that include network infrastructure devices like routers and switches.  <https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-connecting-computers> | Creating media – Desktop publishing  During this unit, learners will become familiar with the terms ‘text’ and ‘images’ and understand that they can be used to communicate messages. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. Learners will be introduced to the terms ‘templates’, ‘orientation’, and ‘placeholders’ and begin to understand how these can support them in making their own template for a magazine front cover. They will start to add text and images to create their own pieces of work using desktop publishing software. Learners will look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world.  <https://teachcomputing.org/curriculum/key-stage-2/creating-media-desktop-publishing> | Programming – code.org Course C  Technology has a language and it is called code. code.org Course C builds on the skills learnt in Course A but now uses word based code to develop problem-solving skills, encourage persistence and promote creativity. These lessons highlight key coding concepts including sequencing and loops and learners will create interactive games they can share.  <https://studio.code.org/s/coursec-2021>  Creating Media – Stop Frame Animation  Learners will use a range of techniques to create a stop-frame animation using iPads. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text.  <https://teachcomputing.org/curriculum/key-stage-2/creating-media-animation> |
| Year 4 | Programming – code.org Course D  Technology has a language and it is called code. code.org Course C continues the learning of key coding concepts including sequencing and loops before students develop their understanding of algorithms, nested loops, while loops, conditionals and more.  <https://studio.code.org/s/coursed-2021> | Computing systems and networks – The Internet  Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and will be given opportunities to explore the World Wide Web for themselves in order to learn about who owns content and what they can access, add, and create. Finally, they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. This unit requires devices with an internet connection. Chrome Music Lab is used in one lesson to demonstrate content which can be produced on the World Wide Web.  <https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-the-internet> | Data and information – Data logging (iPads)  In this unit, pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.  <https://teachcomputing.org/curriculum/key-stage-2/data-and-information-data-logging> |
| Year 5 | Computing systems and networks – Sharing information  In this unit, learners will develop their understanding of computer systems and how information is transferred between systems and devices. Learners will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Learners will also take part in a collaborative online project with other class members and develop their skills in working together online.  <https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-sharing-information> | Programming – UBTech Jimu Robots  This term, learners will build and program their own robots to follow instructions. To start, children will follow video and textual instructions to build their own football playing robot. Over the next few weeks, learners will use code to program their robot to follow simple instructions to achieve given tasks, such as avoiding obstacles and kicking footballs. Lastly, the students will follow instructions in dismantling their robots. | Creating Media – Slideshows (Laptops)  This unit gives learners the opportunity to develop their knowledge of Microsoft PowerPoint. It focuses on intermediate skills, beyond simple word processing, including organising a PPT, choosing a visual style, presenting information clearly, adding and editing images, adding transitions and animations, adding Hyperlinks and finding and collecting information and digital media from an online source safely.  Creating media – Video editing (iPads)  This unit gives learners the opportunity to learn how to create short videos in groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Learners are guided with step-by-step support to take their idea from conception to completion. At the teacher’s discretion, the use of green screen can be incorporated into this unit. At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video.  <https://teachcomputing.org/curriculum/key-stage-2/creating-media-video-editing> |
| Year 6 | Computing systems and networks – Communication  In this unit learners explore how data is transferred over the internet. Learners initially focus on addressing, before they move on to the makeup and structure of data packets. Learners then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet.  <https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-communication> | Data and information – Spreadsheets (Laptops)  This unit introduces the learners to spreadsheets. They will be supported in organising data into columns and rows to create their own data set. Learners will be taught the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data. Learners will be taught how to apply formulas that include a range of cells, and apply formulas to multiple cells by duplicating them. Learners will use spreadsheets to plan an event and answer questions. Finally, learners will create graphs and charts, and evaluate their results in comparison to questions asked.  <https://teachcomputing.org/curriculum/key-stage-2/data-and-information-spreadsheets> | Programming – Raspberry Pi HTML and CSS  In Year 6, learners will learn a different programming language to help in their programming journey. Learners will learn how to use HTML (Hypertext Markup Language) to create web pages to achieve specific web development goals. Learners will make an online birthday card, create webpages to tell stories and write letters and create an end of year webpage project.  <https://projects.raspberrypi.org/en/codeclub/webdev-module-1> |