

SDFS Computing/ NC 2014/ July 2022/ C D NCCE Curriculum 2022 (Elim)

EYFS-Introduce beebots, laptops, ipads, use simple programming games on the IWB

Year 1

<p><u>Algorithms and Programs</u> Can they create a simple series of instructions – left and right? Can they record their routes? Do they understand forwards, backwards, up and down? Can they put two instructions together to control a programmable toy? Can they begin to plan and test a Bee bot journey? <u>Programming</u> 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 the 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.</p>	<p><u>Data Retrieving and Organising</u> Can they capture images with a camera? Can they print out a photograph from a camera with help? Can they record a sound and play it back? Can they enter information into a template to make a graph? Can they talk about the results shown on a graph? <u>Handling Data</u> 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.</p>	<p><u>Communicating</u> Do they recognise what an email address looks like? Have they joined in sending a class email? Can they use the @ key and type an email address? Can they word process ideas using a keyboard? Can they use the spacebar, back space, enter, shift and arrow keys? Can they print out a page from the internet? <u>Multimedia</u> I can be creative with different technology tools. I can use technology to create and present my ideas. I can use the keyboard or word bank on my device to enter text. I can save information in a special place and retrieve it again.</p>
<p><u>Exceeding</u> Can they record pupils' voices as a voiceover? Can they use a teacher prepared photo story to create a slide show of photos?</p>		
<p><u>E safety</u> <u>Skills and Knowledge</u> Can they understand the different methods of communication (e.g. email, online forums etc)? Do they know you should only open email from a known source? Do they know the difference between email and communication systems such as blogs and wikis? Do they know that websites sometimes include pop ups that take them away from the main site? Do they know that bookmarking is a way to find safe sites again quickly? Can they begin to evaluate websites and know that everything on the internet is not true? Do they know that it is not always possible to copy some text and pictures from the internet? Do they know that personal information should not be shared online? Do they know they must tell a trusted adult immediately if anyone tries to meet them via the internet? 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 is important to be kind and polite. I can recognise an age appropriate website. I can agree and follow sensible e-safety rules.</p>	<p><u>Skills</u> Can they follow the school's safer internet rules? Can they use the search engines agreed by the school? Can they act if they find something inappropriate online or something they are unsure of (including identifying people who can help; minimising screen; online reporting using school system etc)? Can they use the internet for learning and communicating with others, making choices when navigating through sites? Can they send and receive email as a class? Can they recognise advertising on websites and learn to ignore it? Can they use a password to access the secure network? <u>Technology in Our Lives</u> 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.</p>	
<p><u>[Tim Berners-Lee]</u> Understand and apply principles and concepts of computer science; analyse and solve computer problems; evaluate and apply information technology; competent, confident, responsible, and creative users of information technology; use information technology safely and respectfully. Algorithms & Programs; Data Retrieving & Organising; Communicating; E safety.</p>		

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Year 2

<p><u>Algorithms and Programs</u> Can they predict the outcomes of a set of instructions? Can they use right angle turns? Can they use the repeat commands? Can they test and amend a set of instructions? Can they write a simple program and test it? Can they predict what the outcome of a simple program will be? Programming I can give instructions to my friend (using forward, backward and turns) 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.</p>	<p><u>Data Retrieving and Organising</u> Can they find information on a website? Can they click links in a website? Can they print a web page to use as a resource? Can they experiment with text, pictures and animation to make a simple slide show? Can they use the shape tools to draw? Handling Data I talk about the different ways I use technology to collect information, including a camera or sound recorder. I can make and save a chart or graph using the information I collect. I can talk about the data that is shown in my graph or chart. 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.</p>	<p><u>Communicating</u> Can they send and reply to messages sent by a safe email partner (within school)? Can they word process a piece of text? Can they insert/delete a word using the mouse and arrow keys? Can they highlight text to change its format (B, U, I)? Multimedia 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.</p>
<p><u>Exceeding</u> Can they create a presentation in a small group and record the narration? Can they record sounds into software and play back? Can they insert pre-recorded sounds into a presentation? Can they capture still and moving images?</p>		
<p><u>E safety</u> Skills and Knowledge Can they understand the different methods of communication (e.g. email, online forums etc)? Do they know you should only open email from a known source? Do they know the difference between email and communication systems such as blogs and wikis? Do they know that websites sometimes include pop ups that take them away from the main site? Do they know that bookmarking is a way to find safe sites again quickly? Can they begin to evaluate websites and know that everything on the internet is not true? Do they know that it is not always possible to copy some text and pictures from the internet? Do they know that personal information should not be shared online? Do they know they must tell a trusted adult immediately if anyone tries to meet them via the internet? 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 not everyone is who they say they are on the Internet.</p>	<p><u>Skills</u> Can they follow the school's safer internet rules? Can they use the search engines agreed by the school? Can they act if they find something inappropriate online or something they are unsure of (including identifying people who can help; minimising screen; online reporting using school system etc)? Can they use the internet for learning and communicating with others, making choices when navigating through sites? Can they send and receive email as a class? Can they recognise advertising on websites and learn to ignore it? Can they use a password to access the secure network? Technology in Our Lives 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.</p>	
<p>[Tim Berners-Lee] Understand and apply principles and concepts of computer science; analyse and solve computer problems; evaluate and apply information technology; competent, confident, responsible, and creative users of information technology; use information technology safely and respectfully. Algorithms & Programs; Data Retrieving & Organising; Communicating; E safety.</p>		

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Year 3

<p><u>Algorithms and Programs</u> Can they experiment with variables to control models? Can they use 90 degree and 45 degree turns? Can they give an on-screen robot directional instructions? Can they draw a square, rectangle and other regular shapes on screen, using commands? Can they write more complex programs? Programming •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.</p>	<p><u>Data Retrieving and Organising</u> Can they review images on a camera and delete unwanted images? Have they experienced downloading images from a camera into files on the computer? Can they use photo editing software to crop photos and add effects? Can they manipulate sound when using simple recording story boarding? Handling Data •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.</p>	<p><u>Communicating</u> Can they reply to a sent email? Can they use the email address book? Can they open and send an attachment? Technology in Our Lives •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.</p>
<p><u>Using the Internet</u> Can they find relevant information by browsing a menu. Can they search for an image, then copy and paste it into a document? Can they use 'Save picture as' to save an image to the computer? Can they copy and paste text into a document? Do they begin to use note making skills to decide what text to copy? E-Safety •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.</p>	<p><u>Databases</u> Can they input data into a prepared database? Can they sort and search a database to answer simple questions? Can they use a branching database?</p>	<p><u>Presentation</u> Can they create a presentation that moves from slide to slide and is aimed at a specific audience? Can they combine text, images and sounds and show awareness of audience? Do they know how to manipulate text, underline text, centre text, change font and size and save text to a folder? Multimedia •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.</p>
<p><u>Exceeding</u> Can they search by keyword using a child friendly search engine? Can they bookmark a page in to your favourites? Can they contribute to a class blog? Can they use repeat command in logo to create a pattern?</p>		
<p><u>Knowledge and Understanding</u> Do they understand the need for rules to keep them safe when exchanging learning and ideas online? Can they recognise that information on the internet may not be accurate or reliable and may be used for bias, manipulation or persuasion? Do they understand that the internet contains fact, fiction and opinion and begin to distinguish between them? Can they use strategies to verify information, e.g. cross-checking? Do they understand the need for caution when using an internet search for images and what to do if they find an unsuitable image? Do they understand that copyright exists on most digital images, video and recorded music? Do they understand the need to keep personal information and passwords private? Do they understand that if they make personal information available online it may be seen and used by others? Do they know how to respond if asked for personal information or feel unsafe about content of a message? Can they recognise that cyber bullying is unacceptable and will be sanctioned in line with the school's policy? Do they know how to report an incident of cyber bullying?</p>	<p><u>Skills</u> Do they follow the school's safer internet rules? Do they recognise the difference between the work of others which has been copied (plagiarism) and re-structuring and re-presenting materials in ways which are unique and new? Can they begin to identify when emails should not be opened and when an attachment may not be safe? Can they explain how to use email safely? Can they use different search engines?</p>	

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<p>Do they know the difference between online communication tools used in school and those used at home? Do they understand the need to develop an alias for some public online use? Do they understand that the outcome of internet searches at home may be different than at school?</p>	
<p>Understand and apply principles and concepts of computer science; analyse and solve computer problems; evaluate and apply information technology; competent, confident, responsible, and creative users of information technology; use information technology safely and respectfully. Algorithms & Programs; Data Retrieving & Organising; Communicating; Using the Internet; Databases; Presentations; E-safety.</p>	

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Year 4

<p><u>Algorithms and Programs</u> Can they use repeat instructions to draw regular shapes on screen, using commands? Can they experiment with variables to control models? Can they make turns specifying the degrees? Can they give an on-screen robot specific directional instructions that takes them from x to y? Can they make accurate predictions about the outcome of a program they have written?</p> <p><u>Programming</u></p> <ul style="list-style-type: none"> •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. 	<p><u>Data Retrieving and Organising</u> Can they capture images using webcams, screen capture, scanning, visualise and internet? Can they choose images and download into a file? Can they download images from the camera into files on the computer? Can they copy graphics from a range of sources and paste into a desktop publishing program?</p> <p><u>Handling Data</u></p> <ul style="list-style-type: none"> •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. 	<p><u>Communicating</u> Do they appreciate the benefits of ICT to send messages and to communicate? Can they use the automatic spell checker to edit spellings?</p> <p><u>Technology in Our Lives</u></p> <ul style="list-style-type: none"> •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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<p><u>Using the Internet</u> Can they use a search engine to find a specific website? Can they use note-taking skills to decide which text to copy and paste into a document? Can they use tabbed browsing to open two or more web pages at the same time? Can they open a link to a new window? Can they open a document (PDF) and view it? Can they open a document (PDF) and view it?</p> <p><u>E-Safety</u> 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.</p>	<p><u>Databases</u> Can they input data into a prepared database? Can they sort and search a database to answer simple questions? Do they recognise what a spread sheet is? Can they use the terms 'cells', 'rows' and 'columns'? Can they enter data, highlight it and make bar charts?</p>	<p><u>Presentation</u> Can they create a lengthy presentation that moves from slide to slide and is aimed at a specific audience? Can they insert sound recordings into a multi-media presentation? Do they know how to manipulate text, underline text, centre text, change font and size and save text to a folder?</p> <p><u>Multimedia</u> ·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.</p>
<p><u>Exceeding</u> Can they use photo editing software to crop photo graphs and add effects? Can they copy and paste the graph/bar chart and use it in a WP document? Can they use animation in their presentation?</p>		
<p><u>Knowledge and Understanding</u> Do they understand the need for rules to keep them safe when exchanging learning and ideas online? Can they recognise that information on the internet may not be accurate or reliable and may be used for bias, manipulation or persuasion? Do they understand that the internet contains fact, fiction and opinion and begin to distinguish between them? Can they use strategies to verify information, e.g. cross-checking? Do they understand the need for caution when using an internet search for images and what to do if they find an unsuitable image? Do they understand that copyright exists on most digital images, video and recorded music? Do they understand the need to keep personal information and passwords private? Do they understand that if they make personal information available online it may be seen and used by others? Do they know how to respond if asked for personal information or feel unsafe about content of a message? Can they recognise that cyber bullying is unacceptable and will be sanctioned in line with the school's policy? Do they know how to report an incident of cyber bullying? Do they know the difference between online communication tools used in school and those used at home? Do they understand the need to develop an alias for some public online use? Do they understand that the outcome of internet searches at home may be different than at school?</p>		<p><u>Skills</u> Do they follow the school's safer internet rules? Do they recognise the difference between the work of others which has been copied (plagiarism) and re-structuring and re-presenting materials in ways which are unique and new? Can they begin to identify when emails should not be opened and when an attachment may not be safe? Can they explain how to use email safely? Can they use different search engines?</p>

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