

EYFS: Computing systems and networks

Technology Objectives	What this looks like	Resources
Explore technology in school, the home and wider world	<ul style="list-style-type: none"> • Discuss technology in the home, school and wider world • Use technology in role-play situations and in creative play • Investigate technology in the classrooms: computers, ipads, cd players, etc – how do you turn them on, change volume, take a photo...? • Explore technology at school – take photographs of technology (computers, copiers, telephones, screens, walkie talkies...) and create a slideshow as group or class. Can pupils remember what the photos are of and what technology is used for? • Look at basic parts of a computer, and create labels 	<p>Other resources: videos, images of technology at home and wider world, defunct technology to use in role-play, camera to take photos of technology in school</p>
To use a keyboard to type To create rules for using technology responsibly	<ul style="list-style-type: none"> • Large lower case keyboard available in class • Rules displayed in the classroom 	<ul style="list-style-type: none"> • Large lower case keyboard available in class
Use a shortcut to open a website or select an appropriate app	<ul style="list-style-type: none"> • Use a website shortcut on computer / laptop to open different sites • Explore different selected websites and apps via shortcuts placed on desktop or in program set 	<p>Online: age-appropriate websites linked to topics</p>
Use buttons on a webpage to explore the website	<ul style="list-style-type: none"> • Use buttons to navigate a website to find chosen game or activity, • Explore a given website by using buttons and menus • Model using web pages to find things out • Supervise children choosing appropriate images for a specific purpose 	<p>Online: age-appropriate websites linked to topics</p> <p>E-safety note: At this stage children's use of the internet needs to be carefully guided by adults. The computer screen must always be viewable by an adult when a child is online. It is not reasonable to allow children unsupervised access to search engines, including searching for images.</p>

<p>Know who to go to if they need help when on internet</p>	<ul style="list-style-type: none"> • Discuss that adult should be present if using internet • Discuss who to go to if they need help when using internet 	<p>Online: Digiduck's big decision: http://www.childnet.com/resources/digiducks-big-decision, Child Focus E-safety: https://www.youtube.com/watch?v=d5kW4pI_VQw</p>
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<p>Reception Objectives Technology around us To identify technology To identify a computer and its main parts To use a mouse pad in different ways To use a keyboard to type To use the keyboard to edit text To create rules for using technology responsibly</p>	<p>What adults could do:</p> <ul style="list-style-type: none"> • Ensure the children know what to do if they see something they don't like on screen – tell an adult • Ensure the computer monitor is visible by an adult when children are on the internet <p>What adults could provide:</p> <ul style="list-style-type: none"> • Links to appropriate websites / resources for the children to explore • Folders of images for the children to select appropriate images from • Technology for children to use in role-play and creative play (see Creating Media) <p>E-safety note: At this stage children's use of the internet needs to be carefully guided by adults. The computer screen must always be viewable by an adult when a child is online. It is not reasonable to allow children unsupervised access to search engines, including searching for images. Education for a Connected World framework</p>	<p>Key vocabulary: technology mouse touchpad keyboard monitor touchscreen app shortcut tap / double tap click / double click open close button website internet safe</p>
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Creating Media

Objectives	What this looks like	Resources
Communication		
Develop mouse control on different devices: <ul style="list-style-type: none"> Use mouse to draw a simple picture Use mouse to select a simple tool Use mouse to open software 	<ul style="list-style-type: none"> Use appropriate software to develop mouse control including click-and-drag and drag-and-drop. Children should have experience of controlling a range of devices – external mouse, touchpad on laptop, tablet device <ul style="list-style-type: none"> Link mouse movement to moving the cursor on screen Single click with mouse Double click with mouse Click and drag Open software applications – use mouse to navigate to appropriate icons 	Software: Word, Paint 3D Online: Class Dojo, ABCya, Happy clicks, Owlle Boo
Use a paint program to make marks, using simple tools, to communicate their ideas	<ul style="list-style-type: none"> Use appropriate software to being to draw pictures on screen using simple tools such as pen, line, fill 	Software: Paint 3D Online: Class Dojo, ABC ya
Begin to use a keyboard to produce text on screen, and develop familiarity with letters, numbers, backspace, arrow keys and space bar <ul style="list-style-type: none"> Use keyboard to type their name Match upper case and lower case letters 	<ul style="list-style-type: none"> Notice the effect on screen of using a keyboard Use a keyboard in role play Type simple words including their name <p>(Explore changing text font, size, style and colour)</p>	Software: Word Online: Class Doo, ABC ya
Sound and images		
Listen to stories, music on digital devices	<ul style="list-style-type: none"> Listen to music on CD player / computer Listen to stories CD player / computer / digital device Watch animations on computer / digital device 	Online: suitable websites for music / stories Other resources: CDs of stories / music / poetry
Use camera or mobile device to collect photographs	<ul style="list-style-type: none"> Discuss how cameras are used at home and school Use a digital camera with adult support to take photos of their work / friends 	Other resources: digital cameras, mobile devices

	<ul style="list-style-type: none"> • Begin to use digital camera with increasing independence following appropriate guidelines to take photographs • Know that care is needed when using equipment • Tour the school photographing ICT equipment • Use a camera to take moving images with support • Share photographs on large screen with support • Ask children to sequence a set of photographs to tell a story 	
Use sound recorder or mobile device to record sounds	<ul style="list-style-type: none"> • Match images to sounds (sound lotto) • Show the children how to use a recording device to talk • Use a recording device to record music • Use a recording device to record longer pieces of information / poem / story, within software application or on external device 	<p>Software: 2create a story, Photo Story</p> <p>Other resources: Talking tins, Easi-speak microphones, external microphone, digital devices , Android tablets)</p>

EYFS Coding

Objectives	What this might look like	Resources
Use a variety of electronic toys in play situations (dance mats, remote control toys) using basic directional language	<ul style="list-style-type: none"> Experiment with different electronic toys and how to control them Be encouraged to use directional language when using appropriate devices 	Hardware: Electronic toys and devices, e.g. dance mats, traffic lights, scanner, bar code readers, cash tills, metal detectors, remote control toys
Respond to simple cause and effect devices (e.g. push a button to hear a sound)	<ul style="list-style-type: none"> Experiment with buttons on toys to see what the buttons do – make sounds etc. Explore buttons on CD player – volume, stop, play etc. Explore an on-screen story book – icons for turning page, listening to audio, watching animation 	Hardware: Electronic toys and devices, e.g. dance mats, traffic lights, scanner, bar code readers, cash tills, metal detectors, sound recorders, light sensors, thermometers, remote control toys, CD player, tablets, scan QR codes Software / Apps: Simple City, on-screen story book
Explore toys that simulate control devices e.g. traffic lights, scanner, microwave, cash tills	<ul style="list-style-type: none"> Experiment with different electronic devices and toys and use them appropriately in role-play situations Use defunct ICT in role-play situations to simulate control devices 	Hardware: Electronic toys and devices, e.g. traffic lights, scanner, bar code readers, cash tills, metal detectors, sound recorders, light sensors, thermometers.
Explore a simple adventure program or simulation / role play software	<ul style="list-style-type: none"> Explore role play software Put clothes on teddy bear and compare with dressing a teddy bear on screen Choose appropriate role play toys in the course of their play 	Software / Apps: Simple City, role-play simulations
Explore the commands needed to control a range of electronic toys	<ul style="list-style-type: none"> Test out the different buttons on electronic toys to work out what they achieve through trial and error Refine process and being to use commands and buttons appropriately to achieve a specific goal 	Hardware: Electronic toys and devices, e.g. dance mats, traffic lights, scanner, bar code readers, cash tills, metal detectors, sound recorders, light sensors, thermometers, digital cameras
Be aware of everyday devices that sense data e.g. bar codes, metal detectors, sound recorders, light sensors, automatic doors, thermometers, library card	<ul style="list-style-type: none"> On walks through the school or on trips outside the school notice and discuss everyday devices that sense data Use relevant devices (or toys that simulate the devices) appropriately, e.g. metal detectors, sound recorders, thermometers 	Hardware: Electronic toys and devices, e.g. bar code readers, metal detectors, sound recorders, light sensors, thermometers.
Be aware that people and computers follow instructions	<ul style="list-style-type: none"> Play 'Simon Says' Identify some of the steps needed to perform a simple task, e.g. brushing teeth, getting dressed 	Other: Sets of instructions / instruction cards, photos that tell a story

	<ul style="list-style-type: none"> • 'Program' each other to follow a route • Come up with a set of instructions to navigate a simple obstacle course (algorithm) • Sequence a set of photos to recount a story or journey 	<p>Barefoot Computing resources for computational thinking: https://www.barefootcomputing.org/earlyyears</p>
<p>Program a simple floor robot to carry out a short sequence of steps</p>	<ul style="list-style-type: none"> • Tinker (explore) with programmable toys • Use trial and error to explore what the buttons do, how far the floor robot will move etc • Move the floor robot giving one command at a time • Use command cards to record the buttons that have been pressed – the instructions given to the floor robot • Build up to sequence of a few commands to move floor robot to specific location e.g. to a friend in the circle or to a specific square on a mat • Explore simple software / apps that allow on-screen coding 	<p>Hardware: Floor robot (if alternatives are available, you may want to use a different floor robot than the one used in year 1)</p> <p>Other: Command cards for the floor robot (simple cards with one button from robot per card), grid square mat linked to cross-curricular theme (children could create their own)</p> <p>Software / Apps: Bee-Bot app, jit5 turtle, Busy Things apps (online in Y1 early coding)</p>

<p>Moving a robot To explain what a given command will do To act out a given word To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem</p> <p>Introduction to animation To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program</p>	<p>What adults could do:</p> <ul style="list-style-type: none"> • Model appropriate use of control technology • Talk about use of control technology and devices • Encourage parents to use ICT with their children / talk about the use of ICT at home and in the local environment – collect information on children’s computing and ICT experiences at home via questionnaire • Discuss the differences between real life situations and those represented in a computer game – what are the similarities and differences • Ask children, when exploring a simulation, what would happen if...? <p>What adults could provide:</p> <ul style="list-style-type: none"> • A range of control devices for use in role play and activities • Opportunities for children to make ‘ICT control devices’ e.g. bar code scanners, metal detectors • Opportunities for the children to see control devices in use in society through walks around the school / trips 	<p>Key vocabulary: control instructions forward backward turn, right, left start, stop robot program command algorithm debug</p>
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Online Safety Key Area	NURSERY	RECEPTION
Self-image and identity	I can say no to somebody if they are making me sad	I can recognise, online or offline, that anyone can say 'no' - 'please stop' - 'I'll tell' - 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.
Online relationships	I can recognise some ways in which the internet can be used to communicate.	I can give examples of how I (might) use technology to communicate with people I know
Online reputation		I can identify ways that I can put information on the internet.
Online bullying	I can talk about being kind and unkind	I can describe ways that some people can be unkind online. I can offer examples of how this can make others feel
Managing online information	I can play with digital devices	I can talk about how to use the internet as a way of finding information online. I can identify devices I could use to access information on the internet.
Health, well-being and lifestyle	I know about keeping safe and being healthy	I can identify rules that help keep us safe and healthy in and beyond the home when using technology I can give some simple examples of these rules
Privacy and security	I can tell you about myself	I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). I can describe who would be trustworthy to share this information with; I can explain why they are trusted.
Copyright and ownership	I know that work I create belongs to me.	I can name my work so that others know it belongs to me.