Dunchurch Boughton C of E Infant Academy and Nursery
Computing and Technology curriculum progression

Intent

At Dunchurch Boughton C of E Infant Academy and Nursery, we aim to prepare our learners for their future by giving them the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. Knowledge and understanding of ICT is of increasing importance for children's future both at home and for employment. Our Computing curriculum focuses on a progression of skills in digital literacy, computer science, information technology and online safety to ensure that children become competent in safely using, as well as understanding, technology. These strands are revisited repeatedly through a range of themes during children's time in school to ensure the learning is embedded and skills are successfully developed. Our intention is that Computing also supports children's creativity and cross curricular learning to engage children and enrich their experiences in school.

Implementation

Our whole curriculum is shaped by our school vision which aims to enable all children, regardless of background, ability, additional needs, to flourish to become the very best version of themselves they can possibly be. We teach the National Curriculum through the Purple Mash scheme of work, which is supported by a clear skills and knowledge progression. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children.

To ensure a broad range of skills and understanding, Computing is taught across digital literacy, computer science and information technology. As part of information technology, children learn to use and express themselves and develop their ideas through ICT for example writing and presenting as well as exploring art and design using multimedia. Within digital literacy, children develop practical skills in the safe use of ICT and the ability to apply these skills to solving relevant, worthwhile problems for example understanding safe use of internet, networks and email. In computer science we teach children to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. We also ensure that we teach a progressive sequence of Computing vocabulary to support children in their understanding. At Dunchurch infants, we give children access to a wide range of good quality resources and provide cross-curricular opportunities for children to apply their computing knowledge and skills. Online safety is taught as a stand alone lesson most terms and where not taught it is recapped throughout the computing teaching, as well as referred to throughout the learning wherever relevant. Online safety procedures are communicated with all staff and parents.

This document sits alongside the Purple Mash scheme of work and our E-Safety progression document that details how we teach the children to stay safe when using digital technology.

Impact

The implementation of this curriculum ensures that when children leave the school they are competent and safe users of ICT in an age appropriate way, with an understanding of how technology works. They will have developed skills to express themselves and be creative in using digital media and be equipped to apply their skills in Computing to different challenges going forward.

Aims

Throughout curriculum children will:

- learn how to understand and apply the basic coding principles of computer science, preparing them for their next stage of education
- analyse simple problems in computational terms appropriate for the age of the children e.g. directing a programmable toy or code a character to move around a maze
- become competent, confident users of information and communication technology, appropriate for the age of the children
- understand how to keep themselves safe online
- apply British Values whilst using digital equipment
- have the opportunity to explore and respond to key issues such as digital communication, cyberbullying, online safety, security, plagiarism and social media

Areas taught throughout the year groups include:

Uses of technology	**Algorithms and programming**	**Communicating / presenting**	**Data retrieval and organisation**	**E-Safety**

	Nursery Rising 3s	**Nursery Pre-School**	**Reception**	**Year 1**	**Year 2**
Information Technology	Accesses touch screen technology and other technological devices in continuous provision, beginning to understand that they	Handles touchscreen technology and other technological devices in continuous provision with care.	Handles touchscreen technology and other technological devices with care and growing competence.	Use a mouse / trackpad / touch screen to move the cursor around and select items.	

	should be handled with care.				
	Begin to use technology in role play for a purpose e.g. imitating using a mobile phone/tablet.	Continue to use technology in role play for a purpose e.g. imitating using a mobile phone/tablet.	Uses technology appropriately through role play e.g. using the electronic pads to make a shopping list, taking a photo or using the recordable microphones when acting in role on the stage.	Start and shut down a computer or electronic device, although some prompts may be needed.	Start and shut down a computer or electronic device..
	Can operate simple equipment such as a talking tin lid or recordable microphone.	Continues to operate a range of simple technological equipment such as torches, CD players, story phones and simple electronic toys.	To access and use simple activities using touch technology with increasing control.	Type name using a keyboard.	Type name, starting with a capital letter, using a keyboard.
	Experiments with touchscreen technology, making marks.	Assigns meaning to marks that they make using touch screen technology.	Uses touch screen technology to draw, write and paint.	Type simple sentences using a keyboard.	Type simple sentences using a keyboard, using the correct punctuation for Year 2.
				To enter information into a template to create a pictogram.	Create different graphs using digital technology.
				Use a paint program to create a piece of art or a picture for a purpose, making use of different sized brushes and paint effects.	Use a paint program to create a piece of art or a picture for a purpose, making use of different sized brushes and paint effects with increasing control.

		Understand that work created on devices can be printed, and print work assisted by an adult.	Send work to print with the support of an adult.	Send work to print independently.
			With the support of an adult, save and retrieve items of work into the correct class folder.	Save and retrieve items of work into the correct class folder.
		Understand that technology can be used for a range of different purposes at both home and school.	Recognise common uses of technology, both within and beyond school.	Recognise many common uses of technology, both within and beyond school. State how they are useful for their particular purpose.
Computer Science and Digital Literacy			To understand that computers and technology can be used to represent and model situations using algorithms.	Explain what an algorithm is.
			To begin to understand that programs need precise and unambiguous instructions.	To understand that programs need precise and unambiguous instructions.
			To understand that algorithms can go wrong and can be debugged.	
			Formulate clear instructions for both	Formulate clear instructions for both

				paper and technological exercises, beginning to understand that they need to be precise and unambiguous. Test these out and start to understand that debugging may be necessary.	paper and technological exercises, understanding they need to be precise and unambiguous. Test these out and debug as necessary.
	Use toys such as remote control cars in continuous provision to begin to experiment with programming toys.	Continue to use toys such as remote control cars in continuous provision to begin to experiment with programming toys.	Explore BeeBots, pressing buttons to move forwards, backwards and side to side.	To continue to explore BeeBots, combining sequences of instructions to follow a pattern or create a shape.	Combine sequences of instructions to follow a pattern or create a shape using a Blue Bot and laptop / iPad, debugging when mistakes are made.
			Use the materials in continuous provision to build a course for BeeBots and start to attempt to program it to move around the course.	To begin to develop computational thinking by following instructions given to move around a course using Beebots and other computer programs (linked to maths positional language – see maths grid).	Develop computational thinking by following instructions given to move around a course using Blue Bots and other computer programs, debugging when mistakes have been made.
				Create a series of instructions for others to follow using Beebots or online programs (linked to maths positional language – see maths grid).	Create a series of instructions for others to follow using Blue Bots or online programs (linked to maths positional language – see maths grid).

		Using programmable construction kits, follow a series of instructions to program a moving object with the support of an adult.	Using programmable construction kits, follow a series of instructions to program a moving object.
		Using programmable construction kits, create a series of instructions to program a moving object with the support of an adult.	Using programmable construction kits, create a series of instructions to program a moving object.
		Using Scratch Jnr, design own character, follow a series of instructions to create a moving object and create own algorithms with the support of an adult.	Using Scratch Jnr, design own character, follow a series of instructions to create a moving object and create own algorithms.
		Using programs throughout the unit of work, begin to predict what might happen if the algorithm is altered and test this with the support of an adult.	Using programs throughout the unit of work, what might happen if the algorithm is altered, and then test this.
Online Safety	Children are taught about online safety through the EYFS acronym of TAG Tell A Grownup	Children are taught about online safety through the KS1 acronym of TAG Tell Ask Go	

			Knows that the internet can be used to find things out and participate in finding out answers to questions within an adult guided group.	Understand that not everything found on the internet is true.	Begin to apply knowledge that not everything found on the internet is true by evaluating spoof websites provided by the teacher.
				Compose an email as a class and discuss the need to be kind.	Understand that you should be as kind in emails / messages sent as you should be when talking to someone face to face.
				Begin to understand that not everything found on the internet is safe and begin to understand that you should not open anything in a message or email sent from an unknown user.	Understand that not everything found on the internet is safe and understand that you should not open anything in a message or email sent from an unknown user.
	Participate in discussions with an adult to begin to understand that there is some information about you like your name and address that you should never share with others.	Start to understand that there is some information about you like your name and address that you should never share with others.	Understand that there is some information about you like your name and address that you should never share with others.	Understand that personal information should be kept private, including passwords.	Continue to understand that personal information should be kept private, including passwords.
				Begin to understand that there are unknown	Understand that there are unknown people on

				people on the internet and this impacts the way that devices should be used.	the internet and sometimes people can pretend to be someone else. Understand that this impacts the way that devices should be used.
				Understand that if an unknown person contacts them on a device they should speak to an adult straight away.	Understand that if an unknown person contacts them on a device they should speak to an adult straight away.
	Adults to discuss with children that if they find inappropriate content on a device, or something that makes them feel worried, they should immediately tell an adult.	Adults to discuss with children that if they find inappropriate content on a device, or something that makes them feel worried, they should immediately tell an adult.	Adults to discuss with children that if they find inappropriate content on a device, or something that makes them feel worried, they should immediately tell an adult.	Know that if they find anything inappropriate when using a device they should immediately tell an adult and minimise the screen if this is possible.	Know that if they find anything inappropriate when using a device they should immediately tell an adult and minimise the screen if this is possible.
	Participate in discussions regarding being kind to each other when using devices.	Participate in discussions regarding being kind to each other when using devices.	Begin to understand that bullying can take place over digital devices which is called cyberbullying, and it must never be tolerated.	Begin to understand that bullying behaviour can take place over devices and this is termed cyberbullying, and understand that cyberbullying must never be tolerated.	Understand that bullying behaviour can take place over devices and this is termed cyberbullying, and understand that cyberbullying must never be tolerated.