Y3 Computing

TERM 1A		TERM 1B		TERM 2A		TERM 2B		TERM 3A		TERM 3B	
Microbits: Introduction(x6) https://microbit.org/teach/lessons/first-lessons-with-makecode-and-the-microbit/		Microbits: Nature Art (x4) https://microbit.org/teach/lessons/nature-art-unit-of-work/		Thinkuknow – Chatting Term: Digital trails. Putting a stop to online meanness (Safer Internet Day during Feb)		Blog		Computing systems and networks – Connecting computers https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-connecting-computers (Need free login to access)		Stop Frame animation	
Key knowledge To understand that computers need instructions in a sequence, also known as algorithms, and that these are written as programs in code, a language the computer can understand. To know how sequences and loops (repetition) can be used to make animations and control programs. To know how logic ('if…then' instructions - start of selection) and sensors combine to make a simple control system. To know how to evaluate (and debug) what you have made.	**Key skills** To be able to gain practical skills for creating, testing and transferring code to micro:bits. To be able to gain practical experience and understanding of inputs, outputs, and variables in real-world contexts. To be able to combine skills and knowledge gained through the previous lessons to create computer simulations of real-world games of chance.	**Key knowledge** To understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.	**Key skills** To be able to use information and communication technology responsibly, competently, confidently and creatively. To be able to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. To be able to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.	**Key knowledge** To know there are often times when sharing can be a nice thing to do, such as sharing toys with a brother or sister or sharing school equipment with classmates. However even though 'sharing' can be good, it is not always a good idea to share a picture – especially if you haven't asked permission first. To know being an 'upstander' is choosing not to join in. To know to ask trusted adults to help if we have a problem online. To know digital footprint is a record of what you do online, including the sites you visit and the things you share. To know permanent is something that lasts forever. To know private information is information about you that can be used to identify who you are, trail a path or track that someone can follow. To know meanness can be making fun of how someone looks, spreading lies about someone or saying rude things to them.	**Key skills** To be able to identify and approach adults who can help. To be able to recognise common uses of information technology beyond school. To be able to use technology safely and respectfully, keeping personal information private. To identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. To be able to identify signs of manipulative behaviour and respond safely to it. To be able to understand the difference between online and offline friendships and the importance of being kind online. To be able to understand the importance of identifying and seeking help from a trusted adult when they need it and how to do this. To be able to use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Key knowledge** To know J2e5 can be used to create text and images which we can publish to share with others. To know work can be saved on J2e so that we can retrieve it at a later time. To know to save our work we must click on the save symbol. To know some people enjoy interacting with others on blogs — these are online journals where stories or subjects can be shared with readers over weeks, months or years. To know once you post something online, you can't always take it back. To know not to post comments, photos or videos that may cause embarrassment, and never post comments that may upset people or cause offence. To know digital devices can design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	**Key skills** To be able to be discerning in evaluating digital content. To be able to select, use and combine a variety of software (including internet services) on a range of. To be able to use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour.	**Key knowledge** To know the key difference between digital and non-digital devices is that a digital device is capable of some processing, i.e. it has functions beyond being either on or off. To know devices can have one input that leads to several outputs (e.g. starting a video leads to outputs from the screen and the speaker) and that many inputs can lead to one output (e.g. using a mouse and a keyboard to produce a document). To know a school network includes a server, wireless access points, network switch, router and output devices such as a printer or copier.	**Key skills** To be able to sequence, select and repeat programs; work with variables and various forms of input and output. To be able to understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration. To be able to select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	**Key knowledge** To know stop motion is a way of creating animations that make it look like still objects are moving. To know stop motion requires using a camera that can take single photos. To know it works by taking one photo (frame), moving the object a little bit, and then taking another photo. To know to repeat this step until your object has made all the movements you want it to. To know that every second of the film requires 12 photographs.	**Key skills** To be able to select, use and combine a variety of software (including internet services) on a range of digital devices. To be able to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
Enquiry/question/outcome/activity/genre of unit/text Where can we see physical computing around us?		**Enquiry/question/outcome/activity/genre of unit/text** How can I use logical reasoning to predict the output of programs?		**Enquiry/question/outcome/activity/genre of unit/text** Why is it important to seek permission before sharing images and videos online? What information is OK to have in your digital footprint?		**Enquiry/question/outcome/activity/genre of unit/text** How can I successfully and safely share ideas on a blog?		**Enquiry/question/outcome/activity/genre of unit/text** What are digital devices and do they connect to devices in a network?		**Enquiry/question/outcome/activity/genre of unit/text** How can I use a sequence of frames to create a stop-frame animation?	

	Key vocabulary (tier 2)	Key vocabulary (tier 3)	Key vocabulary (tier 2)	Key vocabulary (tier 3)	Key vocabulary (tier 2)	Key vocabulary (tier 3)	Key vocabulary (tier 2)	Key vocabulary (tier 3)	Key vocabulary (tier 2)	Key vocabulary (tier 3)	Key vocabulary (tier 2)	Key vocabulary (tier 3)
	debug if…then input output physical computing sequence	control if… then logic loops repetition sensor	algorithm debugging physical computing instructions programmable sequence sprite	abstraction program	adults ask follow help identify information meanness permission rude share track trail trust upset	assumption content identity image online permanent selfie	audience post retrieve save share	blog blogger digital content online publish	copier device on/off outcome printer switch	data input network output router	animation camera frame photo	background foreground storyboard subject