

National Curriculum Computing Programmes of Study and EYFS Framework				
Nursery	Reception	Y1/2 (KS1)	Y3/4 and Y5/6 (KS2)	
Communication and Language - I understand 2-part instructions or questions. For example; 'Get your coat and wait at the door' I use a wider vocabulary which helps me to express my opinions/points of view/knowledge.	Communication and Language: - I know how to ask questions to find out more and to check I understand what has been said to me. -I learn new vocabulary, which I then can use throughout the day in different contexts. -I know how to use talk to explain how things work and why they might happen.	Pupils should be taught to: - understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to	Pupils should be taught to: - design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and outputuse logical reasoning to explain how some	
Physical Development: - I remember and understand the Nursery rules and why they are important, which allows me to follow the rules independently without needing an adult to remind me.	Physical Development: - I understand why we need rules and how I can keep safe.	predict the behaviour of simple programs. - use technology purposefully to create, organise, store, manipulate and retrieve digital content. - recognise common uses of information technology beyond school. - use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	simple algorithms work and to detect and correct errors in algorithms and programs. - 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. - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. - 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. - use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
Understanding the World: - I understand how things work by exploration.	Understanding the World: -I am developing my digital literacy skills by being able to access, understand and interact with a range of technologies.			
Expressive Art and Design: - I confidently explore the materials freely so that I can develop ideas about how to use them and what to make I draw with increasing complexity and detail, such as representing a face with a circle and including details.	Expressive Art and Design: -I am able to explore and use a range of artistic effects to express my ideas and feelings			



Dovecotes Long Term Computing Planning								
	Little Doves and Nursery	Reception	Year 1/2 Cycle A	Year 1/2 Cycle B	Y3/4 Cycle A	Y3/4 Cycle B	Y5/6 Cycle A	Y5/6 Cycle B
Autumn 1	EYFS teach th exploration and through theme	d play	Computer Systems and networks	Computer Systems and networks	Computer Systems and networks	Computer Systems and networks	Computer Systems and networks	Computer Systems and networks
Autumn 2	heavily led by the children's inter- include exposula-Pillars/ progr	ests – to ire to Code- ammable	Creating Media: Digital Writing	Creating Media: Digital Writing	Creating Media: Stop- frame animation	Creating Media: Photo editing	Creating Media: Vector Drawing	Creating Media: Video Editing
Spring 1	devices such a mice, IWB use iPads/laptops.		Programming A: Beebots/Floorbots	Programming A: Beebots/Floorbots	Programming A (Y3): Sequencing sounds	Programming B (Y3): Events and Actions in Programs	Programming A (Y5): Selection in physical computing	Programming B (Y5): Selection in Quizzes
Spring 2			Creating Media: Digital Painting	Data and Information: Block charts	Data and Information: Databases	Creating Media: Audio Editing	Data and Information: Fact file databases	Creating Media: Webpage creation
Summer 1			Data and Information: Pictograms	Creating Media: Digital Photography	Creating Media: Desktop Publishing	Data and Information: Data Logging	Creating Media: 3D Modelling	Data and Information: Spreadsheets
Summer 2			Programming B: Scratch Junior	Programming B: Scratch Junior	Programming A (Y4): Repetition in Shapes	Programming B (Y4): Repetition in games	Programming A (Y6): Variables in games	Programming B (Y6): Sensing

EYFS Knowledge

<u>Programming</u>
Children will be introduced to simple cause and effect and begin to explore early coding through a range of programmable toys.

Digital Art Children will develop mark making skills and explore simple drawing tools to create a picture linked to a theme or topic.

Digital Music Children will explore a range of soundboards and record a simple composition which can be linked to a theme or topic.



KS1 Knowledge

Programming

Children will use a range of offscreen activities, programmable toys and appropriate apps and software to understand the early beginnings of coding.

Data and Information

Children will use apps and web-based software to collect and present data in variety of ways. The children will collect data using several different and new technologies which will relate to the real world.

Creative Media

Digital Writing Children will create or retell a story using a variety of different apps. The stories will focus on traditional tales while there will be additional activities to make the stories interactive.

Audio Production Children will use a number of different apps and software to create an audiobook.

Minecraft Builds Children will use software to think about planning and designing around a particular theme or topic.

LKS2 Knowledge

Programming

Children will create simple presentations and conversations using appropriate software and apps as well as undertaking activities to understand debugging. Children will also look at using coding to incorporate mathematical concepts, particularly in shape and space.

Data and Information

The children will look at collecting data using new and advanced technologies which will relate to the real world. Children will then use this data to create, analyse and present data through databases.

Creative Media

Video Production Children will plan, create and edit a short news report based on different themes/topics. Children will learn simple editing techniques to put film together.

Digital Music Children will look to create an emotive composition using pictures or films as a stimulus. They will also look to see how music can be used in films and tv shows to create moods and atmosphere.

Digital Design Children will use a variety of apps and software to create packaging for a product. They will research and plan what their packaging will look like before designing the final product.

Digital Publishing Children will use a variety of app and software to create non-fiction publications based around a number of themes and topics.

Creative Technology Children will use innovative technologies (Minecraft) to enhance other areas of the curriculum. Children will plan, design and evaluate creations as well as engaging in Literacy Tasks

Robotics Days Pupils will use LEGO or other kits to build robots and control them using coding through a range of apps. Completing challenges and tasks throughout the day using skills they have gained.

UKS2 Knowledge

Programming

Children will look to further their understanding debugging with advanced techniques and processes by looking at how a computer game is created. They will use appropriate software to begin to create their own games.

Data and Information

Children will learn to used advanced technologies including spreadsheets to collect, analyse and present data. They will learn how data is used in everyday life and complete activities that represent this. They will use a variety of practical and new technologies in their data collection.

Creative Media

Digital Publishing Children will look at creating a variety of different publications using advanced techniques and skills. This will include simple websites, blogs and non-fiction publications as well as telling stories through digital applications.

Advanced Animation Children will plan and create an animated story using advanced techniques. They will design and make their own models and sets to use in their animation.

Digital Art Children will learn how to use a wide range of techniques and media to create advanced drawings using a range of apps. Children will look at techniques of taking photographs, simple editing, using different apps more advanced techniques such as layered photos, to create a variety of different compositions. Examples include movie poster; book covers or album artwork.

Audio Production Children will create a radio play - they will be learning skills around planning, recording and editing using pre-recorded content, before creating own show.

Digital Music Children will learn to and understand how a song can be composed. Children will then look to compose their own songs using a variety of techniques and apps/software.



Creative Technology Children will use innovative technologies (Minecraft) to enhance other areas of the curriculum. Children will plan, design and evaluate creations as well as engaging in Literacy Tasks

Robotics Days Pupils will use LEGO or other kits to build robots and control them using coding through a range of apps. Completing challenges and tasks throughout the day using skills they have gained.

KS1 and 2 Knowledge Progression				
	KS1	KS2		
Computer Science	 understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. 	 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. 		
	- create and debug simple programs.	- use sequence, selection, and repetition in programs; work with variables and various forms of input and output.		
	- use logical reasoning to predict the behaviour of simple programs.			
	- recognise common uses of information technology beyond school.	 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web. 		
		- use search technologies effectively, appreciate how results are selected and ranked.		
Information Technology	use technology purposefully to create, organise, store, manipulate and retrieve digital content.	 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. 		
Digital Literacy	use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	 know the opportunities search technologies offer for communication and collaboration. be discerning in evaluating digital content. use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact. 		



Online Safety/Behaviours Knowledge Progression				
	EYFS and KS1	KS2		
Self-image and identity	 I can recognise, online or offline, that anyone can say 'no' - 'please stop' - 'l'll tell' - 'l'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset. I can recognise that there may be people online who could make someone feel sad, embarrassed or upset. If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust and how they can help. I can explain how other people may look and act differently online and offline. I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help. 	 I can explain what is meant by the term 'identity'. I can explain how people can represent themselves in different ways online. I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why. I can explain how my online identity can be different to my offline identity. I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them. I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this. I can explain how identity online can be copied, modified or altered. I can demonstrate how to make responsible choices about having an online identity, depending on context. I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online. I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline. I can explain the importance of asking until I get the help needed. 		
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. I can give examples of when I should ask permission to do something online and explain why this is important. I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). 	 I can describe ways people who have similar likes and interests can get together online. I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with. 		



- I can explain why it is important to be considerate and kind to people online and to respect their choices.
- I can explain why things one person finds funny or sad online may not always be seen in the same way by others.
- I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country).
- I can explain who I should ask before sharing things about myself or others online.
- I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure.
- I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do.
- I can identify who can help me if something happens online without my consent.
- I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online.
- I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.

- I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried.
- I can explain how someone's feelings can be hurt by what is said or written online.
- I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos.
- I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms).
- I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours.
- I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs.
- I can give examples of technology-specific forms of communication (e.g. emojis, memes and GIFs).
- I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my / our fault.
- I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups).
- I can explain how someone can get help if they are having problems and identify when to tell a trusted adult.
- I can demonstrate how to support others (including those who are having difficulties) online.
- I can explain how sharing something online may have an impact either positively or negatively.
- I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not.



Online Reputation	 I can identify ways that I can put information on the internet. I can recognise that information can stay online and could be copied. I can describe what information I should not put online without asking a trusted adult first. I can explain how information put online about someone can last for a long time. I can describe how anyone's online information could be seen by others. I know who to talk to if something has been put online without consent or if it is incorrect. 	 I can describe how things shared privately online can have unintended consequences for others. e.g. screen-grabs. I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this. I can explain how to search for information about others online. I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal. I can explain who someone can ask if they are unsure about putting something online. I can describe how to find out information about others by searching online. I can explain ways that some of the information about anyone online could have been created, copied or shared by others. I can search for information about an individual online and summarise the information found. I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect. I can explain the ways in which anyone can develop a positive online reputation. I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity.
Online Bullying	 I can describe ways that some people can be unkind online. I can offer examples of how this can make others feel. I can describe how to behave online in ways that do not upset others and can give examples. I can explain what bullying is, how people may bully others and how bullying can make someone feel. I can explain why anyone who experiences bullying is not to blame. I can talk about how anyone experiencing bullying can get help. 	 I can describe appropriate ways to behave towards other people online and why this is important. I can give examples of how bullying behaviour could appear online and how someone can get support. I can recognise when someone is upset, hurt or angry online. I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation).



		 I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences. I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying. I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. I can identify a range of ways to report concerns and access support both in school and at home about online bullying. I can explain how to block abusive users. I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline or The Mix). I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. I can explain how someone would report online bullying in different contexts.
Managing Information Online	 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. I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching. I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke. I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened. I can use simple keywords in search engines. I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections). I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri). 	 I can demonstrate how to use key phrases in search engines to gather accurate information online. I can explain what autocomplete is and how to choose the best suggestion. I can explain how the internet can be used to sell and buy things. I can explain the difference between a 'belief', an 'opinion' and a 'fact. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories etc. I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed). I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened. I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own



- I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'.
- I can explain why some information I find online may not be real or true.
- decisions regarding content and that my decisions are respected by others.
- I can describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy (e.g. social media, image sites, video sites).
- I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online.
- I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true.
- I can explain that technology can be designed to act like or impersonate living things (e.g. bots) and describe what the benefits and the risks might be.
- I can explain what is meant by fake news e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't.
- I can explain the benefits and limitations of using different types of search technologies e.g. voice-activation search engine. I can explain how some technology can limit the information I am presented with.
- I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical'.
- I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results.
- I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence.
- I can identify ways the internet can draw us to information for different agendas, e.g. website notifications, pop-ups, targeted ads
- I can describe ways of identifying when online content has been commercially sponsored or boosted, (e.g. by commercial companies or by vloggers, content creators, influencers).
- I can explain what is meant by the term 'stereotype', how 'stereotypes' are amplified and reinforced online, and why



	 fake news). I understand the concept of persuasive design and how it can be used to influences peoples' choices. I can demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important. I can explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this. I can describe the difference between online misinformation and dis-information. I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation or disinformation). I can identify, flag and report inappropriate content.
Health, Well I can identify rules that help keep us safe and healthy in and	- I can explain why spending too much time using technology
Being and beyond the home when using technology.	can sometimes have a negative impact on anyone; I can give
Lifestyle - I can give some simple examples of these rules.	some examples of both positive and negative activities where it is easy to spend a lot of time engaged.
being and beyond the nome when using technology.	some examples of both positive and negative activities where



	 I can explain rules to keep myself safe when using technology both in and beyond the home. I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment. I can say how those rules / guides can help anyone accessing online technologies. 	 I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites). I can explain how using technology can be a distraction from other things, in both a positive and negative way. I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can suggest strategies to help with limiting this time. I can describe ways technology can affect health and wellbeing both positively (e.g. mindfulness apps) and negatively. I can describe some strategies, tips or advice to promote health and wellbeing with regards to technology. I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals. I can explain how and why some apps and games may request or take payment for additional content (e.g. in-app purchases, lootboxes) and explain the importance of seeking permission from a trusted adult before purchasing. I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this. I can recognise features of persuasive design and how they are used to keep users engaged (current and future use). I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).
Privacy and Security	 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. I can explain how passwords are used to protect information, accounts and devices. 	 I can describe simple strategies for creating and keeping passwords private. I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult.



	- I can recognise more detailed examples of information that is	- I can describe how connected devices can collect and share
	personal to someone (e.g where someone lives and goes to	anyone's information with others.
	school, family names).	- I can describe strategies for keeping personal information
	- I can explain why it is important to always ask a trusted adult	private, depending on context.
	before sharing any personal information online, belonging to	- I can explain that internet use is never fully private and is
	myself or others.	monitored, e.g. adult supervision.
	- I can explain how passwords can be used to protect information,	- I can describe how some online services may seek consent to
	accounts and devices.	store information about me; I know how to respond
	- I can explain and give examples of what is meant by 'private' and	appropriately and who I can ask if I am not sure.
	'keeping things private'.	- I know what the digital age of consent is and the impact this
	- I can describe and explain some rules for keeping personal	has on online services asking for consent.
	information private (e.g. creating and protecting passwords).	- I can explain what a strong password is and demonstrate how
	- I can explain how some people may have devices in their homes	to create one.
	connected to the internet and give examples (e.g. lights, fridges,	- I can explain how many free apps or services may read and
	toys, televisions).	share private information (e.g. friends, contacts, likes, images,
		videos, voice, messages, geolocation) with others.
		- I can explain what app permissions are and can give some
		examples.
		- I can describe effective ways people can manage passwords
		(e.g. storing them securely or saving them in the browser).
		- I can explain what to do if a password is shared, lost or stolen.
		- I can describe how and why people should keep their software
		and apps up to date, e.g. auto updates.
		- I can describe simple ways to increase privacy on apps and
		services that provide privacy settings.
		- I can describe ways in which some online content targets
		people to gain money or information illegally; I can describe
		strategies to help me identify such content (e.g. scams,
		phishing).
		- I know that online services have terms and conditions that
		govern their use.
Copyright and	- I know that work I create belongs to me.	- I can explain why copying someone else's work from the
Ownership	- I can name my work so that others know it belongs to me.	internet without permission isn't fair and can explain what
	- I can explain why work I create using technology belongs to me.	problems this might cause.
	- I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it").	- When searching on the internet for content to use, I can
	- I can save my work under a suitable title or name so that others	explain why I need to consider who owns it and whether I
	know it belongs to me (e.g. filename, name on content).	have the right to reuse it.



- I understand that work created by others does not belong to me	
even if I save a copy.	

- I can recognise that content on the internet may belong to other people.
- I can describe why other people's work belongs to them.
- I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.
- I can assess and justify when it is acceptable to use the work of others.
- I can give examples of content that is permitted to be reused and know how this content can be found online.
- I can demonstrate the use of search tools to find and access online content which can be reused by others.
- I can demonstrate how to make references to and acknowledge sources I have used from the internet.