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Taken from Cambridgeshire Progression in Computing Capability: Technology in the Early Years in Technology and Computing

Reception	Computer Science: Understanding Technology	Computer Science: Programming	Information technology	Digital Literacy
Early Learning Goals	**ELG 13 People and communities:** children talk about past and present events in their own lives and in the lives of family members. They know that other children don't always enjoy the same things, and are sensitive to this. They know about similarities and differences between themselves and others, and among families, communities and traditions. **ELG 15 Technology:** children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	**ELG 02 Understanding:** children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events. **ELG 04 Moving and handling:** children show good control and co-ordination in large and small movements. They move confidently in a range of ways, safely negotiating space.	**ELG 16 Exploring and using media and materials:** children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. **ELG 17 Being imaginative:** children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories. *NB: Aspects of almost all of the other ELGs could be enhanced or evidenced though the use of technology e.g. ELGs 01, 02, 09 and 10 would all benefit from the use of eBooks and recording devices.*	**ELG 06 Self-confidence and self-awareness:** children are confident to try new activities, and say why they like some activities more than others. They are confident to speak in a familiar group, will talk about their ideas, and will choose the resources they need for their chosen activities. They say when they do or don't need help. **ELG 07 Managing feelings and behaviour:** children talk about how they and others show feelings, talk about their own and others' behaviour, and its consequences, and know that some behaviour is unacceptable. They work as part of a group or class, and understand and follow the rules. They adjust their behaviour to different situations, and take changes of routine in their stride.
Examples of activities	*Examples of appropriate resources include:* ▪ Role play toys (e.g. hoovers, microwaves, tills, old mobile phones, washing machines etc.) ▪ 'Real' technology in their home and school (e.g. photocopiers, automatic doors, mobile technology – tablets and phones, hand dryer) ▪ Primary and secondary sources of information about technology in different cultures and in the past (e.g. BBC Bitesize: How Computers have changed, or What are the parts of a computer?) 	*Examples of appropriate resources include:* • *Precoding penguins* ▪ Simple control toys: Beebot, Bluebot, remote control vehicles…  ▪ On screen simulations such as Beebot, Trucks from Duck Duck Moose or Toca Boca (digital toys and games for kids) and simple problem solving activities.   	*Examples of appropriate resources include:* ▪ Online, interactive stories and rhymes ▪ Screens, IWBs or tablets with mark making software and apps. ▪ Equipment or apps for recording voice ▪ Digital cameras or tablets to record still and moving images ▪ Programs / apps such as Sock Puppets, Puppet Pals and Drawing Pad on tablets or as Photostory, Smart Notebook or a selection of age appropriate software such as that produced by 2Simple. ▪ Websites which encourage early exploration of age appropriate content such as CBeebies. 	*Examples of appropriate resources include:* ▪ An age appropriate online learning environment to model and practise safe use of communication tools ▪ age appropriate resources such as Jessie and Friends ▪ stories such as Digiduck (a story of friendship and responsibility online) and Smartie the Penguin ▪ using child friendly search engines such as Kidrex, Kiddle or Swiggle Visit www.theictservice.org.uk/primary-computing for more links to useful e-safety resources.  

The main resource used for the content of our Computing teaching is 'Teach Computing' and our Digital Literacy is planned using Project Evolve.

Year 1	Computer Science: Understanding Technology	Computer Science: Programming	Information technology	Digital Literacy
Autumn A: Computer Science: Technology around us	*Objectives* • *Pupils recognise and can give examples of common uses of **information technology** they encounter in their daily routine.* Activities – Children will become more familiar with the different components of a computer by developing their			Objectives- **Health, well-being and lifestyle** **I can use simple rules to stay safe online** EfaCW 1H1 - I can explain rules to keep myself safe when using technology both in and beyond the home. **Copyright and ownership**

	keyboard and mouse skills, and also start to consider how to use technology responsibly. Teach computing plans - Computing systems and networks – Technology around us Esafety objectives – project evolve planning			**I can explain my work belongs to me** EfaCW 1C1 - I can explain why work I create using technology belongs to me 1C2 - I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it'') 1C3 - I can save my work under a suitable title / name so that others know it belongs to me (e.g. filename, name on content). 1C4 - I understand that work created by others does not belong to me even if I save a copy.
Autumn B: Digital Literacy: Online Safety				1I2 - 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. 1I3 - 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 flag anything upsetting** 1P2 - I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). 1P3 - I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others. 1R2 - I can describe what information I should not put online without asking a trusted adult first. **I can recognise my private information** 1R1 - I can recognise that information can stay online and could be copied. **I know how to stay safe online** 1S1 - I can recognise that there may be people online who could make me feel sad, embarrassed or upset. 1S2 - 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 flag anything upsetting** 1F1 - I can give examples of when I should ask permission to do something online and explain why this is important. 1F2 - I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). 1F3 - I can explain why it is important to be considerate and kind to people online and to respect their choices. 1B1 - I can describe how to behave online in ways that do not upset others and can give examples. **I know how to be kind online** 1I1 - I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching). **I can search for information** 1P1 - I can explain that passwords are used to protect information, accounts and devices. **I can protect my devices**

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				Planning – Project Evolve using knowledge maps and computing at school
Spring A: Computer Science: Moving a robot		Objectives - • Pupils create, **debug** and implement instruction (simple **algorithms**) as **programs** on a range of digital devices. • Pupils understand that **digital devices** follow precise and unambiguous instructions. • Pupils understand that digital devices **simulate** real situations. Activities - This unit introduces learners to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of algorithms. Teach computing unit – moving a robot		
Spring B: Information Technology: Photo Editing and Green Screen Technology			Objectives - • Pupils increasingly use a range of technology to enquire with purpose, accessing and creating **digital content** such as still and moving images, video, audio and text. • With appropriate levels of support, pupils are able to retrieve, store and manipulate information. • They can present and communicate their learning to others in a variety of ways • With support, pupils are beginning to access and retrieve **online content**, making appropriate choices to achieve specific goals. Activities – Learning to take photos using a device, taking photos on a green screen and adding a background using doink with support. Cropping and applying filters in the ipad photos app Real or fake – identifying that some images are not real and how they were created.	Objectives – • I can use the internet to find things out. • I can use simple keywords in search engines Online safety session 026 EfaCW Activity – use a safe search on safari (ipads) to find a suitable photo for the background of their green screen image • To identify that some images are not real (fake)
Summer A: Computer Science: Scratch Junior - animation		Objectives- • Pupils create, **debug** and implement instruction (simple **algorithms**) as **programs** on a range of digital devices. • Pupils understand that **digital devices** follow precise and unambiguous instructions.		

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		• Pupils understand that digital devices **simulate** real situations. Activities Children will be introduced to Scratch Jr. and create and debug simple algorithms Teach computing – intro to animation		
Summer B: Information Technology Paint			Objectives- • Pupils increasingly use a range of technology to create **digital content** such as still images • They can present and communicate their learning to others in a variety of ways. Activities - Children use Paint program to paint with different colours and brushes, create shapes, fill areas, undo and redo and add text.	

Year 2	Computer Science: Understanding Technology	Computer Science: Programming	Information technology	Digital Literacy
Autumn A: Computer Science IT around us	Objectives Pupils recognise common uses of **information technology** beyond school, including those which they don't frequently encounter in their daily routine Activities Children begin to understand how information technology works in the world around them – role play how technology is used in a bank and bar codes work in shops. Teach computing and code it unplugged role play plans			Objectvies – Health, well-being, and lifestyle EfaCW 2H1 - 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. 2H2 - I can say how those rules / guides can help anyone accessing online technologies. 2F4 - 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 explain simple rules for being online** EfaCW – Privacy and Security 2P4 - I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions) **I can explain devices in my home can be connected to the internet.**
Autumn B: Digital Literacy Online Safety				2S1 - I can explain how other people may look and act differently online and offline. 2S2 - 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 know people may act differently online** 2R1 - I can explain how information put online about someone can last for a long time.

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				2R3 - I know who to talk to if something has been put online without consent or if it is incorrect 2P2 - I can explain and give examples of what is meant by 'private' and 'keeping things private 2F2 - I can explain who I should ask before sharing things about myself or others online. **I know some information should not be shared** 2B1 - I can explain what bullying is, how people may bully others and how bullying can make someone feel. 2B2 - I can explain why anyone who experiences bullying is not to blame. 2B3 - I can talk about how anyone experiencing bullying can get help. **I understand the impact of bullying** 2F1 - 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). 2F3 - 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. 2F6 - 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. 2F7 - I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online. **I can use the internet to communicate** 2I4 - I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'. 2I5 - I can explain why some information I find online may not be real or true. **I know there is a difference between real and imaginary** 2R2 - I can describe how anyone's online information could be seen by others. 2P3 - I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords). 2P1 - I can explain how passwords can be used to protect information, accounts and devices. 2F5 - I can identify who can help me if something happens online without my consent. **I know how to keep my information safe** 2C1 - I can recognise that content on the internet may belong to other people. 2C2 - I can describe why other people's work belongs to them **I can explain copywrite and fair use** Project evolve and computing at school planning
Spring A: Computer Science Robot algorithms		Objectives - • Pupils understand that computers are not intelligent but can appear to be when following **algorithms**. They can share examples of this.		

		• Pupils understand that **algorithms** are implemented as **programs** on **digital devices.** • Pupils create and **debug programs** to achieve specific goals. • Pupils use the **principles of logical reasoning** to plan and predict the behaviour of simple **programs**. • Pupils solve real and imaginary problems on and off screen. Activity - This unit develops learners' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Learners will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them. Teach computing plans		
Spring B: Information Technology Presenting information - Word			Objectives - • Pupils increasingly use a range of technology to enquire with purpose, accessing and creating **digital content** such as still and moving images, video, audio and text. • With appropriate levels of support, pupils collect **data** which they are able to retrieve, store and manipulate. • They can present and communicate their learning to others in a variety of ways. • With support, pupils are beginning to access and retrieve **online content**, making appropriate choices to achieve specific goals. Children will learn how to type using a keyboard in Microsoft Word and the basics of manipulating text including return to move to a new line, shift to add a capital letter and the tools for bold, italic and underline	
Summer A: Computer Science Scratch Junior – Introduction to quizzes		Objectives - • Pupils understand that computers are not intelligent but can appear to be when following **algorithms**. They can share examples of this. • Pupils understand that **algorithms** are implemented as **programs** on **digital devices.** • Pupils create and **debug programs** to achieve specific goals. • Pupils use the **principles of logical reasoning** to plan and predict the behaviour of simple **programs**. • Pupils solve real and imaginary problems on and off screen. Activities Children will use Scratch Jr to create a simple quiz game – Teach computing plans		

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Summer B: Information Technology Stop Motion Animation			Objectives- • Pupils increasingly use a range of technology to enquire with purpose, accessing and creating **digital content** such as still and moving images, video, audio and text. • They can present and communicate their learning to others in a variety of ways. Activities – Children learn about how animation is created and create their own stop motion animation	

Year 3	Computer Science: Understanding Technology	Computer Science: Programming	Information technology	Digital Literacy
Autumn A: Computer Science Computing systems and networks – Connecting computers	Objectives – • Pupils understand that **computers** (in various forms) generally accept **inputs** and produce **outputs** and can give examples of this. • Pupils develop a basic understanding of how computers can be linked to form a **local network** such as those found in schools. Activities- Children will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. Start by comparing digital and non-digital devices, before introducing them to computer networks that include network infrastructure devices like routers and switches. Teach computing plans Code-it unplugged network activity			3F1 - I can describe ways people who have similar likes and interests can get together online. 3F2 - I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. 3F6 - 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. 3R1 - I can explain how to search for information about others online. **I can describe ways people communicate online**
Autumn B: Digital Literacy Online safety				3S1 - I can explain what is meant by the term 'identity'. 3S2 - I can explain how people can represent themselves in different ways online. 3S3 - 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 my identity** 3P2 - 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. 3F3 - 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. 3F5 - I can explain how someone's feelings can be hurt by what is said or written online.

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				3R2 - 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 know why I should be careful who I trust** 3R3 - I can explain who someone can ask if they are unsure about putting something online. 3B1 - I can describe appropriate ways to behave towards other people online and why this is important. 3B2 - I can give examples of how bullying behaviour could appear online and how someone can get support. **I can explain what bullying is** 3I4 - 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. 3I5 - 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 judge a 'belief', an 'opinion' or a 'fact'** 3F2 - I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. 3F3 - 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 online life and real life.** 3H1 - I can explain why spending too much time using technology can sometimes have a negative impact on anyone, e.g. mood, sleep, body, relationships; 3H2 - I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged (e.g. doing homework, games, films, videos). **I understand the balance needed with using devices** 3F4 - I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried. 3H2 - 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 why passwords are important** Project evolve and computing at school planning
Spring A: Computer Science Coding – Sequencing in Scratch		Objectives – • Pupils create **programs** to accomplish specific goals: - exploring and understanding the impact of changing instructions. - using **sequence** - **decomposing** problems both on and off screen - using the **principles of logical reasoning** in order to resolve problems.		

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		Activities - Sequences Teach computing – Sequencing Sounds – children are introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences.		
Spring B: Information Technology: Branching Databases			• With appropriate levels of support, pupils collect **data** (e.g. research facts) which they are able to retrieve, store and manipulate. • They can present and communicate their learning to others in a variety of ways. • use technology safely, respectfully and responsibly Children will develop their understanding of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Learners will create physical and on-screen branching databases. To conclude the unit, they will create an identification tool using a branching database, which they will test by using it. They will also consider real-world applications for branching databases. Teach computing plans	3P3 - I can describe how connected devices can collect and share anyone's information with others. 3P1 - I can describe simple strategies for creating and keeping passwords private. **I can describe how information can be collected by devices** (starter activities – Project evolve)
Summer A: Computer Science Coding – Events and Actions		Objectives – • Pupils create **programs** to accomplish specific goals: - exploring and understanding the impact of changing instructions. - using **sequence** - **decomposing** problems both on and off screen - using the **principles of logical reasoning** in order to resolve problems. Activities Children explore the links between events and actions, whilst consolidating prior learning relating to sequencing. They will begin by moving a sprite in four directions (up, down, left and right). Then explore movement within the context of a maze, using design to choose an appropriately sized sprite. Teach Computing Plan		
Summer B: Information Technology Presentation Skills - publisher			Objectives – • Pupils are confident and creative users of technology. They are beginning to make informed choices about the appropriateness of **digital content** they access and create • Children present in**formation**, showing a greater awareness of purpose and audience. Activities –	EfaCW 3I1 - I can demonstrate how to use key phrases in search engines to gather accurate information online. 3I2 - I can explain what autocomplete is and how to choose the best suggestion. 3I3 - I can explain how the internet can be used to sell and buy things. 3I6 - 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.

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			Children will use the internet to search for information for their presentation They will learn the skills needed to create presentations - they will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. Learners will be introduced to the terms 'templates', 'orientation', and 'placeholders' and begin to understand how these can support them in making their own template for a poster Teach computing plans edited to use Microsoft Publisher	**I can explain using key phrases to search** EfaCW 3C1 - I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause. **I can explain ownership of work**

Year 4	Computer Science: Understanding Technology	Computer Science: Programming	Information technology	Digital Literacy
Autumn A: Computer Science Computing systems and networks – The Internet	Objectives covered- • Pupils understand the internet is a network of networks • Pupils understand the role of **web browsers** when viewing **web pages** and can explain how individual web pages can be found (*e.g. by clicking on a favourite link, search result or by typing in a URL*). • Pupils know that there is a difference between the **Internet** and the **World Wide Web** and understand that the web is just one of the services offered by the Internet (as well as, e.g. **email** and **VoIP services** such as Skype) Activities - Children will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet and other services offered by the internet. They will be given opportunities to explore the World Wide Web for themselves in order to learn about who owns content and what they can access, add, and create. Finally, they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. Teach computing plans			Objectives covered Copywrite EfaCW 4C1 - When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. 4C2 - I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images. **I consider copywrite when searching online** Managing Online Information EfaCW I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others 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 what fake news is and analyse information to make an judgment about whether it is accurate**
Autumn B: Digital Literacy Online Safety				**Self image and identity** 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.

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Spring A: Computer Science Coding Logo/Scratch		Objectives – • 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 output	• Pupils are confident and creative users of technology.	4I5 - 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. 4I2 - 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 explain artificial intelligence

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		• Use logical reasoning to explain how some simple algorithms work, and to detect and correct errors in algorithms and programs • Pupils begin to explore and notice the similarities and differences between **programming languages** and use this knowledge to help them create and **debug programs** efficiently • 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 Activities- Children will learn how to use loops for repetition in logo and scratch (teach computing plans)		Session 046 of online safety planning
Spring B: Information Technology Publishing work – Photo editing		Objectives: • I can use photo editing software to crop and rotate an image • I can experiment with colour effects • I can add to the composition by cloning • I can use a range of tools • I can combine images for a purpose • I can evaluate how changes can improve an image Children will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices		**Privacy and security** I can describe strategies for keeping personal information private, depending on context. I can explain that internet use is never fully private and is monitored, e.g. adult supervision. I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure. I know what the digital age of consent is and the impact this has on online services asking for consent.
Summer A: Computer Science Coding – Introduction to Microbits – Microbits as dataloggers		Objectives – • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output • 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 Activities- Children will consider how and why data is collected over time. They will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. They will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals.	• are responsible, competent, confident and creative users of information and communication technology	

		Children will spend time using a computer to review and analyse data.		
Summer B: Information Technology Publishing work – Word			Objectives - • Pupils are confident and creative users of technology. They are beginning to make informed choices about the appropriateness of **digital content** they access and create • Pupils present **information**, showing a greater awareness of purpose and audience. • Pupils become more discerning in their choice of **search technology** to accomplish specific goals. They understand the need for efficiency when conducting searches, choosing keywords carefully. Activities - Children will use search technology efficiently to research content which they will learn to present using: Word – children will develop their skills typing with 2 hands, learn about formatting images and organising content into an effective layout as well as the most common keyboard shortcuts	

Year 5	Computer Science: Understanding Technology	Computer Science: Programming	Information technology	Digital Literacy
Autumn A: Computer Science Computing systems and networks – Sharing information	Objectives – • Children develop their understanding of computer systems and how information is transferred between systems and devices • They appreciate how **search results** are ranked, including an understanding of the role of 'relevance' and 'importance' in finding and presenting results. Activities -. Teach computing plans – Learners develop their understanding of computer systems and how information is transferred between systems and devices. Learners consider small-scale systems as well as large-scale systems. They explain the input, output, and process aspects of a variety of different real-world systems. Learners discover how information is found on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines.		Pupils are discerning in **evaluating digital content**. They use **search technologies** effectively to respond to enquiries and support their learning.	I can explain how search engines work and how results are selected and ranked.

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Autumn B: Digital Literacy Online Safety			.	**Self image and identity** I can explain how identity online can be copied, modified or altered I can demonstrate responsible choices about my online identity, depending on context. **Online Relationships** 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 make positive contributions and be part of online communities. I can describe some of the communities in which I am involved and describe how I collaborate with others positively. **Online Bullying** I can recognise when someone is upset, hurt or angry online. I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone. I can explain how to block abusive users. I can explain how I would report online bullying on the apps and platforms that I use. I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. **Childline**). **Health wellbeing and lifestyle** I can describe ways technology can affect healthy sleep and can describe some of the issues. I can describe some strategies, tips or advice to promote healthy sleep with regards to technology. **Privacy and Security** I can create and use strong and secure passwords. I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, **geolocation**) with others. I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing. Objectives and activities taken from knowledge maps Project Evolve and computing at school Planning
Spring A: Computer Science Coding - Crumbles		Objectives - • 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 output	Objectives - • Pupils are confident, capable and creative users of technology. They create **programs** and **systems** thinking carefully about aesthetics, functionality and impact on the user.	5R1 - I can search for information about an individual online and summarise the information found. 5R2 - 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. 5I1 - I can explain the benefits and limitations of using different types of search technologies e.g. voice-activation search engine. 5I2 - I can explain how some technology can limit the information I aim presented

		• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • 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 In this unit, children will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program it to control components (including output devices — LEDs and motors). Learners will be introduced to conditions as a means of controlling the flow of actions in a program. Learners will make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the 'if...then...' structure) and write algorithms and programs that utilise this concept. To conclude the unit, learners will design and make a working model of a fairground carousel that will demonstrate their understanding of how the microcontroller and its components are connected, and how selection can be used to control the operation of the model. Throughout this unit, learners will apply the stages of programming design		with e.g. voice-activated searching giving one result. Session 0511 online safety
Spring B: Information Technology Tinkercad			Objectives – • Pupils are confident, capable and creative users of technology, selecting and making effective use of **digital resources** and **devices** for purpose and effect. They create **digital content**, thinking carefully about aesthetics, functionality and impact on the user. Activities Children extend their drawing skills to create 3D models based on using Tinkercad Make. Children will learn how to create simple and complex 3D models. They will be able to add detail and manipulate 3D models using a variety of tools.	5I2 - I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical'. 5I3 - 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 why some information online may not be true Session 059 online safety
Summer A: Computer Science Coding Scratch - quizzes		Objectives - • Pupils create, **deconstruct** and refine **programs** to accomplish specific goals. They can: - improve efficiency - use conditional **selection** - use variables - use loops	Objectives • Pupils are confident, capable and creative users of technology. They create **programs** and **systems** thinking carefully about aesthetics, functionality and impact on the user.	5P2 - I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. 5P3 - I can explain what app permissions are and can give some examples

		• Pupils use **logical reasoning** to explain how some **algorithms** work and to detect and correct errors in **programs**. • They independently employ strategies to solve problems. Activities - Children are introduced to selection before they create their own maths quiz Code-it maths quiz		5H4 - 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 explain how apps share my information Session 057 of online safety plans
Summer B: Information Technology Podcast			Objectives - • Pupils are confident, capable and creative users of technology, selecting and making effective use of **digital resources** and **devices** for purpose and effect. They create **digital content** thinking carefully about aesthetics, functionality and impact on the user. • They as **information** for a variety of audiences and purposes. • Pupils are discerning in **evaluating digital content**. They use **search technologies** effectively to respond to enquiries and support their learning. Activities - Introduce sound recording on audacity, including layering sound and using import and export	5C1 - I can assess and justify when it is acceptable to use the work of others. 5C2 - I can give examples of content that is permitted to be reused and know how this content can be found online. I can explain when to use references Session 058 online safety plans

Year 6	Computer Science: Understanding Technology	Computer Science: Programming	Information technology	Digital Literacy
Autumn A: Computer Science Understanding Technology	Objectives – • Pupils begin to understand how **data** travels across **networks** in **packets** and how these can be broken up and reconstructed. • 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 • 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			Objectives • I can describe and assess the benefits and the potential risks of sharing information online. • 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

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	Activities - In this unit learners explore how data is transferred over the internet. Learners initially focus on addressing, before they move on to the makeup and structure of data packets. Learners then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet Teach computing plans			
Autumn B: Digital Literacy Online Safety				**Self image and Identity** I can describe ways in which media can shape ideas about gender. I can identify messages about gender roles and make judgements based on them. I can challenge and explain why it is important to reject inappropriate messages about gender online. I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline. I can explain why I should keep asking until I get the help I need. **Online Relationships** I can show I understand my responsibilities for the well-being of others in my online social group. I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming). I can demonstrate how I would support others (including those who are having difficulties) online. can demonstrate ways of reporting problems online for both myself and my friends. **Online Reputation** I can explain how I am developing an online reputation which will allow other people to form an opinion of me I can describe some simple ways that help build a positive online reputation **Online Bullying** 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 identify a range of ways to report concerns both in school and at home about online bullying. **Health, wellbeing and lifestyle** I can assess and action different strategies to limit the impact of technology on my health (e.g. **night-shift mode**, regular breaks, correct posture, sleep, diet and exercise). I can describe common systems that regulate age-related content (e.g. **PEGI**, **BBFC**, parental warnings) and describe their purpose. I can explain the importance of self-regulating my use of technology; I can demonstrate the strategies I use to do this (e.g. monitoring my time online, avoiding accidents). **Privacy and Security**

				I use different passwords for a range of online services. I know what to do if my password is lost or stolen. I can describe effective strategies for managing those passwords (e.g. **password managers**, acronyms, stories). I can explain what app permissions are and can give some examples from the technology or services I use. 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**). Objectives and activities taken from knowledge maps Project Evolve and Computing at School planning
Spring A: Computer Science Coding – Scratch game		Objectives • 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 output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • 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 This unit explores the concept of variables in programming through games in Scratch. First, learners find out what variables are and relate them to real-world examples of values that can be set and changed. Then they use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, learners experiment with variables in an existing project, then modify them, before they create their own project. In Lesson 4, learners focus on design. Finally, in Lesson 6, learners apply their knowledge of variables and design to improve their games in Scratch. Teach computing plans		
Spring B: Information Technology Spreadsheets – handling data			Objectives • They identify, collect and analyse different types of **data** (e.g. Numerical, words, images, video etc.) which they manipulate and re-present as **information** for a variety of audiences and purposes. • Children are given an understanding of spreadsheets and how they can be used.	

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			Children will learn skills in formatting and entering specific formulas.	
Summer A: Computer Science Coding – Micro:bits		Objectives • 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 output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • 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 Activities Children will bring together elements of all the four programming constructs: sequence from Year 3, repetition from Year 4, selection from Year 5, and variables (introduced in Year 6 – Spring A. It offers pupils the opportunity to use all of these constructs in a different, but still familiar environment, while also utilising the micro:bit. Pupils will take on three new projects in Lessons 2, 3, and 4, with each lesson adding more depth.		
Summer B: Information Technology Film Making			Objectives - • Pupils are confident, capable and creative users of technology, selecting and making effective use of **digital resources** and **devices** for purpose and effect. They create **digital content**, thinking carefully about aesthetics, functionality and impact on the user. • Pupils are discerning in **evaluating digital content**. They use **search technologies** effectively to respond to enquiries and support their learning. Activities - How are green screens used in movies? Plan and film their own movie sequence, researching content and backgrounds to create own film. Using doink green screen to merge clips with different backgrounds and then iMovie to edit.	**Managing Online Information** I can use search technologies effectively I can demonstrate the strategies I would apply to be discerning in evaluating digital content. I can describe how some online information can be opinion and can offer examples. I can explain how and why some people may present 'opinions' as 'facts'. I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online (e.g. advertising and 'ad targeting'). I can demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important. I can identify, flag and report inappropriate content. **Copywrite and Ownership** 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. Project Evolve