



**NUTLEY CE PRIMARY SCHOOL  
COMPUTING PROGRESSION GRID**

Children are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Children build on this knowledge to create programs, systems and a range of content. We aim for our children to become digitally literate so they are able to begin their secondary education with confidence. Computing includes three strands; Information technology, Computer Science and Digital Literacy.

All children have access to G-Suite Google Classroom – an online learning platform. This enables children to learn remotely, as well as cover aspects of the computing curriculum in school.

At Nutley CE Primary, we also aim to teach our children to balance the benefits offered by technology with a critical awareness of their own and other's online behaviour and develop effective strategies for staying safe and making a positive contribution online. Topics covered are: self-image and identity, online relationships, online reputation, online bullying, and managing online information. We teach online safety throughout the year and celebrate Safer Internet Day.

**National Curriculum statements - Key stage 1**

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 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.

**National Curriculum statements - Key stage 2**

Pupils should be taught to:

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- 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
- 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.

**Online Safety**

EYFS	Key Stage One	Lower Key Stage Two	Upper Key Stage Two
<b>Self-image and Identity</b>			
I can recognise, online or offline, that anyone can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset	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	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	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

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	<p>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.</p>	<p>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.</p>	<p>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.</p>
<b>Online Relationships</b>			
<p>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</p>	<p>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 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.</p>	<p>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 someone may change their mind about trusting anyone with something if they feel nervous,</p>	<p>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</p>

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	<p>(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.</p>	<p>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.</p>	<p>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. 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.</p>
<p><b>Online Reputation</b></p>			
<p>I can identify ways that I can put information on the internet.</p>	<p>I can recognise that information can stay online and could be copied. I can describe what information I should</p>	<p>I can explain how to search for information about others online. I can give examples of what anyone</p>	<p>I can search for information about an individual online and summarise the information found. I can describe ways</p>

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	<p>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.</p>	<p>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.</p>	<p>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.</p>
<p><b>Online Bullying</b></p>			
<p>I can describe ways that some people can be unkind online. I can offer examples of how this can make others feel.</p>	<p>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.</p>	<p>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</p>	<p>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</p>

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		others, their feelings and how it may affect how others feel about them (their reputation).	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.
<b>Managing Online Information</b>			
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	I can demonstrate how to use key phrases in search engines to gather accurate information online. I can explain how search engines work and how results are selected and ranked. I can explain how to use search technologies effectively. 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'; why the popularity of an opinion or the personalities of those promoting it	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 e.g. voice-activated searching giving one result. 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

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	<p>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 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.</p>	<p>does not necessarily make it true, fair or perhaps even legal. I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online (e.g. advertising and 'ad targeting' and targeting for fake news). I understand the concept of persuasive design and how it can be used to influence peoples' choices. 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 e.g. voice-activated searching giving one result. 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</p>	<p>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 accepting 'stereotypes' may influence how people think about others. I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful. I can explain what is meant by a 'hoax'. I can explain why someone would need to think carefully before they share. I can explain how search engines work and how results are</p>
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		<p>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 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</p>	<p>selected and ranked. I can explain how to use search technologies effectively. 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'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online (e.g. advertising and 'ad targeting' and targeting for 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</p>
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		<p>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 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</p>	<p>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.</p>
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		stories or alter photographs and put them online to pretend something is true when it isn't.	
Health, Well-being and Lifestyle			
I can identify rules that help keep us safe and healthy in and beyond the home when using technology. I can give some simple examples of these rules.	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 spending too much time using technology can sometimes have a negative impact on anyone, e.g. mood, sleep, body, relationships; 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 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	I can describe ways technology can affect health and well-being 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

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		amount of time they use technology e.g. I can suggest strategies to help with limiting this time.	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).
<b>Privacy and Security</b>			
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 that passwords are used to protect information, accounts and devices. I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others. I can explain how passwords can be used to protect information, accounts and devices. I can explain and give examples of what	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 describe how connected devices can collect and share anyone's information with others. I can describe strategies for keeping personal information private, depending on context. I can explain	I can explain what a strong password is and demonstrate how to create one. 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. 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

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	<p>is meant by 'private' and 'keeping things private'. I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords). 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).</p>	<p>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.</p>	<p>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.</p>
<p><b>Copyright and Ownership</b></p>			
<p>I know that work I create belongs to me. I can name my work so that others know it belongs to me.</p>	<p>I can explain why work I create using technology belongs to me. I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it'). I can save my work under a suitable title / name so that others know it belongs to me (e.g. filename, name on content). 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.</p>	<p>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. 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. I can give some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.</p>	<p>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.</p>

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<b>COMPUTING STUDIES</b>			
EYFS	Key Stage One	Lower Key Stage Two	Upper Key Stage Two
<p><b>Three and Four-Year-Olds:</b> <i>Personal, Social and Emotional Development</i></p> <ul style="list-style-type: none"> <li>• Remember rules without needing an adult to remind them.</li> </ul> <p><i>Physical Development</i></p> <ul style="list-style-type: none"> <li>• Match their developing physical skills to tasks and activities in the setting.</li> </ul> <p>Understanding the World</p> <ul style="list-style-type: none"> <li>• Explore how things work.</li> </ul> <p><b>Reception:</b> <i>Personal, Social and Emotional Development</i></p> <ul style="list-style-type: none"> <li>• Show resilience and perseverance in the face of a challenge.</li> </ul>	<p>Create a sequence of programmed steps for a programmable toy (eg. BeeBot, Roamer, Big Trak). Understand vocabulary: program, sequence, directions.</p> <p>Create record a video clip using a digital video recording device. Transfer a video file from a recording device to network storage with adult supervision. Play back their video clip from network storage.</p> <p>Use digital text editing to write their own short story. Use painting or graphics software to create their own illustrations. Combine text and images into a single presentation.</p>	<p>Create a sequence of images that link together to create a looping animation. To create an animated .gif file for use on Google Classroom. To use programming tools to switch between animation frames or sequences of frames at a controlled speed. Trigger different sequences of animation using buttons on a keyboard.</p> <p>Make use of a programming platform to write their own algorithms. Learn the function of decision IF, THEN and ELSE, logical operations AND, OR and the comparators GREATER THAN, LESS THAN and</p>	<p>Create an interactive game using a suitable programming platform. Create and edit algorithms and sequences of commands. Make use of variables to store numeric values and Boolean flags. Use appropriate software to support their game design through creating graphics and sound effects that can be imported to the game platform. Create a front end and instructions pages for the game.</p> <p>Recognise the difference between visual and scripted programming languages. Use Python as an example of a scripted language to create a “Hello World” program.</p>

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<ul style="list-style-type: none"> <li>• Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.</li> </ul> <p><i>Physical Development</i></p> <ul style="list-style-type: none"> <li>• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</li> </ul> <p><i>Expressive Arts and Design</i></p> <ul style="list-style-type: none"> <li>• Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> </ul> <p><b>ELG</b></p> <p><i>Personal, Social and Emotional Development</i></p> <p><i>Managing Self</i></p> <ul style="list-style-type: none"> <li>• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.</li> </ul>	<p>Launch a web browser and know where to go to perform an image search.</p> <p>Devise and enter appropriate search terms for a safe web image search.</p> <p>Know how to react if they see inappropriate content.</p> <p>Know how to use the RIGHT-CLICK context menu to save an image.</p> <p>Know about the major types of image format on the web and their differences.</p> <p>Know how to use the snipping tool to capture screen shots, and how to handle the results.</p> <p>Know how to use PRT-SCR or ALT+PRT-SCR to capture a screen shot, and how to PASTE the results for use.</p> <p>Combine images and sound recording into a multimedia presentation.</p> <p>Record and playback sound using a digital device.</p>	<p>EQUAL TO, in the context of programming.</p> <p>Find errors in code and correct them.</p> <p>Create text files for piece of writing and save their content on network storage.</p> <p>Use desktop publishing software to lay out their text for presentation or display.</p> <p>Use digital sound recording and editing tools.</p> <p>Identify elements of a computer system and know the difference between a monitor, system unit and hard drive.</p> <p>Understand how computer systems can connect to each other in a network, either by cable connection or through WiFi.</p> <p>Know that different computer systems communicate through using agreed Protocols, and that the Hypertext Transfer Protocol allows</p>	<p>Experiment with variables, comments and mathematical operators in scripted code.</p> <p>Use input statement to capture user interaction.</p> <p>Use conditional statements and comparison operators.</p> <p>Create polygons using LOGO commands.</p> <p>Create polygons and patterns through using repeated commands or loops.</p> <p>Define procedures to produce complex shapes made from repeated use of simpler procedures.</p> <p>Pass parameters to procedures to allow rapid alteration of how polygons and patterns appear.</p> <p>Make comparisons between different versions of LOGO, find common features and major differences.</p> <p>Create a graphic design using vector art.</p>
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<ul style="list-style-type: none"> <li>• Explain the reasons for rules, know right from wrong and try to behave accordingly. <i>Expressive Arts and Design</i> <i>Creating with Materials</i></li> <li>• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> </ul>	<p>Store digital audio recordings on network storage and then listen to them playback.</p> <p>Understand the difference between Plain Text and Rich Text. Produce text suitable for use in a card, using appropriate formatting. Produce an image printed at the correct dimensions for use in a card. Saved and opened text and image files on network storage.</p> <p>Use LOGO type commands to control floor / screen turtles. Create a sequence of computer commands to control a screen turtle accurately. To read and make predictions about the effect of a sequence of commands.</p> <p>To understand that an algorithm is a sequence of commands to solve a problem.</p>	<p>the World Wide Web to exist over the connected Internet.</p> <p>To have used Google Classroom for communications in a variety of contexts. Understand the elements of an email message; address, subject, message body and signature. Understand the importance of thoughtful email composition; how the tone of a message can be altered by poor writing. Recognise email attachments, and to understand the security implication of opening an email attachment Recognise hyperlinks in email messages, and know how to spot spoofed links. Know how and when to use Reply, Forward, CC and BCC. To know how to keep an inbox tidy.</p> <p>Use a database to find out about the results of surveys and collected data.</p>	<p>Produce a poster or flier that includes their own graphic design and freeform text. Record and edit short multi-track audio clips, combining speech and background music. Create a short video or animation that combines their graphic designs and soundtrack.</p> <p>Write and publish journal or diary entries online. Understand e-safety in the context of blogging. Be aware of good web etiquette in the context of commenting and affirming blog posts. Process digital images, reformatting and reducing them to a suitable resolution for posting online.</p> <p>Manipulate objects in virtual 3D space Create their own virtual representations of 3D objects.</p> <p>View and manipulate digital maps</p>
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**Believe and Achieve**

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	<p>Create their own algorithms to accurately complete simple tasks. Explain the effect of algorithms. Identify where sequences of commands are used by people; for example -getting dressed, crossing the road, making a sandwich. Identify where sequences of commands are used by digital systems in the world around us. For example; traffic lights, washing machines, vending machines.</p> <p>Identify the parts of digital cameras. Capture digital images. EXPORT images from a digital imaging device, and save image files on network file storage. Use simple image retouching techniques such as Crop, Distort or Colour Correction to edit their images – try Pixlr Express or similar. Use a digital photograph they have captured to support another piece of classroom work.</p>	<p>Enter information into a prepared database. Export an image or information from a database for use in another presentation. Use filter and sort tools to organisation information in a database. Understand that personal data should be handled with discretion.</p> <p>Create software to suit a designed purpose. Use Loops, Decisions and Variables in algorithms. Design suitable graphics and artwork for a themed game. Design an educational game including elements of user interaction.</p> <p>Know the difference between Output and Input devices. Understand that computers can control output devices by turning them on or off.</p>	<p>Create custom maps using digital sources. Create trails or treasure hunts using an understanding of geolocation Understand the differences between Raster and Vector mapping.</p> <p>Use a variety of computing tools to support and augment a project. Use publishing skills to create publicity for an event. Choose and evaluate the effectiveness of computing tools to support progress towards a project.</p> <p>Play examples of adventure games and comment on different design styles. Create an interactive adventure game using computing skills. Build a web of linked indexed pages to form an adventure web.</p> <p>Know how to enter series of numbers into a spreadsheet.</p>
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	<p>Create internet search terms for specific topics, using key words. Enter search terms into a search engine and interpret results. Know how to search with caution, and be aware of internet safety when searching.</p> <p>Compare results from different search engines and choose the best results for the situation.</p> <p>Save material from search results in other work; text and images.</p> <p>To have seen the school Google Classroom message system in action and used it to communicate with another class or member of staff.</p> <p>Learn and identify the elements of an email message including address, subject, message body and signature. Know how to compose a polite email message.</p> <p>Recognise email attachments, and to consider the security implication of opening an email attachment – particularly unknown file types.</p>	<p>Create control systems allowing a computer to control outputs such as lights, motors and buzzers following a programmed sequence.</p> <p>Make use of inputs to sense switches being pressed, or to detect light or sound inputs.</p> <p>Create repeating sequences of sounds using digital equipment.</p> <p>Create a programmed sequence of sounds.</p> <p>Record, edit and play back audio recordings.</p> <p>Know the basic HTML tags; bold, underline, italic, Heading1, Heading2, paragraph, line break, comments.</p> <p>Know how to link to another web page using the anchor tag.</p> <p>Embed links to images in HTML code.</p> <p>To understand that web browsers render HTML code in different ways and what the viewer sees may appear different to the creator.</p>	<p>Know how to copy and transform a series of numbers from a column into a row and vice-versa.</p> <p>Use formulae tools in spreadsheets.</p> <p>Use string handling in formulae and concatenate the content of cells into a longer string output.</p> <p>Understand how to stay safe online in a variety of contexts.</p> <p>Know how to use good web etiquette in web forums and on blogs</p> <p>Produce promotional material about e-safety, both online and as printed resources.</p> <p>Demonstrate proficient use of desktop publishing skills.</p> <p>Demonstrate skilled use of digital photography and photo editing.</p> <p>Combine software and hardware to solve a real life problem.</p> <p>Break up a problem into smaller steps.</p> <p>Make use of variables to store information.</p>
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	<p>Recognise hyperlinks in email messages, and know how to spot spoofed links.</p> <p>Conduct surveys and share the results using digital means.</p> <p>Create pictograms, from survey data.</p> <p>Interpret information from pictograms and consider the plausibility of results.</p> <p>Export a chart and import it into a presentation.</p>	<p>Know that although tools are available to create web pages without coding HTML, these are often imperfect and require the user to edit the HTML to achieve the best results.</p> <p>Work collaboratively to create online work.</p> <p>Use knowledge of HTML and Wiki to create online content.</p> <p>Consider web etiquette in context of collaborative writing.</p> <p>Use digital data loggers to take measurements over a period of time.</p> <p>Record data in spreadsheets.</p> <p>Use spreadsheets to assist in data analysis and presentation.</p> <p>Create and present a weather forecast.</p>	<p>Demonstrate the use of decisions and loops in programming.</p> <p>Use logical thinking to identify and solve problems.</p>
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<b>Computing Cycle A – (2021-2022)</b>			
<b>Autumn Term 1</b>			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
Children have access to a computer during free flow learning with carefully chosen learning activities, such as: 2Simple, Top Marks games, ICT games, Teach Your Monster To Read.	Unit 2.3 – Basic Digital Photography Unit	Animation Programming - Pupils use programming skills to create a sequence of image frames that produce an animation.	Unit 5.2: Coding – pupils learn about a more advanced programming language: Python.
<b>Autumn Term 2</b>			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
Children have access to a computer during free flow learning with carefully chosen learning activities, such as: 2Simple, Top Marks games, ICT games, Teach Your Monster To Read. Computer games, also remote control cars to compare toys from now to toys in the olden days.	Unit 1.4 – Finding images using the web.	Debug it! Pupils use their understanding of programming sequences to edit algorithms in a variety of situations.(SCRATCH)	Unit 5.5: Blogging – Pupils write and publish online through the learning platform
<b>Spring Term 1</b>			

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<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
Children have access to a computer during free flow learning with carefully chosen learning activities, such as: 2Simple, Top Marks games, ICT games, Teach Your Monster To Read. Also habitats themed learning from websites such as National Geographic Kids.	Unit 1.2 – My Video	Weather Data - Pupils use data logging equipment for measuring and recording data, presenting this using spreadsheets.	Unit 5.4: Advertising -pupils use their skills with digital media to produce advertising for a product or event. Skills: Researching. Graphic design. Video recording. Video editing.
Spring Term 2			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
Children have access to a computer during free flow learning with carefully chosen learning activities, such as: 2Simple, Top Marks games, ICT games, Teach Your Monster To Read.	Unit 1.6 – Graphics for a purpose.	Communicating - Pupils practise the techniques and features of email and other digital communication systems	Unit 5.1: Interactive Games – pupils use programming tools to design and create a more advanced interactive game.
Summer Term 1			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
Children have access to a computer during free flow learning with carefully chosen learning activities, such as: 2Simple, Top Marks games, ICT games, Teach Your Monster To Read.	Unit 2.2 – Testing algorithms.	Network Engineers - Pupils explore how a computer network is formed; how workstations and servers interact to share and store files.	Unit 5.3: Geometric Art – pupils use LOGO programming to create geometric art by passing parameters to procedural planning

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Children also have the opportunity to play with beebots.			
<b>Summer Term 2</b>			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
Children have access to a computer during free flow learning with carefully chosen learning activities, such as: 2Simple, TopMarks games, ICT games, Teach Your Monster To Read.	Unit 2.4 – Researching a topic.	Survey and analysis - Pupils use databases to organise, present and sort information.	Unit 5.6: Virtual Space – pupils use 3D modelling tools to create virtual worlds and objects

<b>Computing Cycle B (2022-2023)</b>			
<b>Autumn Term 1</b>			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
			Unit 6.1: Geotrails – pupils use digital mapping, navigation and location finding to create trails, routes or treasure hunts
<b>Autumn Term 2</b>			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
			Unit 6.2: Fundraising – pupils use digital technology to plan, organise and produce a fundraising event in school
<b>Spring Term 1</b>			

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<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
			Create a prototype of an interactive toy using Scratch / Unit 6.3: Adventure Game – pupils use computing skills to create an adventure game
Spring Term 2			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
			Unit 6.4 Modelling Data: using spreadsheets to explore mathematical models
Summer Term 1			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
			Unit 6.5: eSafety website – pupils use their knowledge of e-safety to produce material to promote e-safety around the school
Summer Term 2			
<b>EYFS</b>	<b>Key Stage One</b>	<b>Lower Key Stage Two</b>	<b>Upper Key Stage Two</b>
			Unit 6.6: Programme – pupils use their digital publishing skills to produce a programme for the end of year production

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