



# OUR COTEN END COMPUTING CURRICULUM



## INTENT

At Coten End, Computing is a subject we are passionate about. We are acutely aware that our children will soon be entering a world in which technology will be at the centre. We aim to ensure our pupils are competent in using a wide range of technology and software as well as ensuring they have a secure understanding of the issues surrounding Online Safety. We hope our children leave Coten End with skills of digital literacy at a level suitable for the future workplace and as active, safe participants in a digital world.

## National Curriculum

### Key Stage 1

- 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 material on the internet or other online technologies – **See Online Safety Progression.**

### Key Stage 2

- 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 – **See Online Safety Progression.**

## COMPUTING: OVERVIEW AND END POINTS

<b>EYFS Curriculum (statutory framework- Personal, Social and Emotional Development)</b>	<p>Children’s Personal, Social and Emotional Development (PSED) is crucial for children to lead healthy and happy lives, and is fundamental to their cognitive development. Underpinning their personal development are the important attachments that shape their social world. Strong, warm and supportive relationships with adults enable children to learn how to understand their own feelings and those of others. Children should be supported to manage emotions, develop positive sense of self, set themselves simple goals, have confidence in their own abilities, to persist and wait for what they want and direct attention as necessary. Through adult modelling and guidance, they will learn how to look after their bodies, including healthy eating, and manage personal needs independently. Through supported interaction with other children, they learn how to make good friendships, co-operate and resolve conflict peaceably. These attributes will provide a secure platform from which children can achieve at school and later in life.</p>			
<b>EYFS Curriculum (statutory framework- Expressing Arts and Design)</b>	<p>The development of children’s artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.</p>			
<b>Learning Theme</b>	<b>Computer Science</b>	<b>ICT</b>	<b>Digital Literacy</b>	<b>Vocabulary</b>
<b>Space Explorers</b>	<p style="text-align: center;"><b>Creating Media</b> Digital Art</p> <p>To explore methods of creating digital art.</p> <p>To explore and play with a wide range of media and materials.</p>		<p style="text-align: center;"><b>Health, Well-being and Lifestyle</b></p> <p>I can identify rules that help keep us safe and healthy in and beyond the home when using technology.</p> <p>I can give some simple examples of these rules.</p> <p style="text-align: center;"><b>Copyright and Ownership</b></p> <p>I know that work I create belongs to me.</p> <p>I can name my work so that others know it belongs to me.</p>	<p>digital art media</p>
<b>The Garden Adventure</b>	<p style="text-align: center;"><b>Computing Systems &amp; Networks</b> Exploring Hardware</p> <p>To recognise that a range of technology is used in places such as homes and schools</p>		<p style="text-align: center;"><b>Online Relationships</b></p> <p>I can recognise some ways in which the internet can be used to communicate.</p> <p>I can give examples of how I (might) use technology to communicate with people I know.</p>	<p>capture photo</p>

	<p>To learn how to operate an iPad and use it to take photographs</p> <p>To explore and play with a wide range of media and materials.</p>		<p><b>Privacy and Security</b></p> <p>I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location).</p> <p>I can describe who would be trustworthy to share this information with; I can explain why they are trusted.</p> <p><b>Online Reputation</b></p> <p>I can identify ways that I can put information on the internet.</p>	
<b>Habitat Safari</b>		<p><b>Programming</b> Pre-Code</p> <p>To understand the meaning of directional arrows</p> <p>To set themselves simple goals.</p>	<p><b>Online Bullying</b></p> <p>I can describe ways that some people can be unkind online.</p> <p>I can offer examples of how this can make others feel.</p> <p><b>Self-Image and Identity</b></p> <p>I can recognise, online and 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.</p>	code
<b>Dino Detectives</b>		<p><b>Programming</b> BeeBots</p> <p>To understand the meaning of directional arrows and to follow a simple sequence of instructions</p> <p>To experiment with programming a BeeBot and learn how to give it simple commands.</p>	<p><b>Managing Online Information</b></p> <p>I can talk about how to use the internet as a way of finding information online.</p> <p>I can identify devices I could use to access the information on the internet.</p>	program instructions

At the end of Year R, a great computer user can:

- ✓ log onto a Chromebook and use a mouse
- ✓ program devices using algorithms and debug devices
- ✓ can use tools on digital software
- ✓ can represent data using spreadsheets and pictograms

## Year 1 Computing Curriculum

Learning Theme	Computer Science	ICT	Digital Literacy	Vocabulary
<p><b>Incredible You</b></p>	<p><b>Computing Systems &amp; Networks</b> Using a Computer (EYFS Unit)</p> <p>To learn what a keyboard is and how to locate relevant keys</p> <p>To learn how to log in and out and understand why we need to do this</p> <p>To learn what a mouse is and to develop basic mouse skills such as moving and clicking</p> <p>To learn what a mouse is and to develop basic mouse skills such as dragging and dropping</p>		<p><b>Health, Wellbeing and Lifestyle</b> I can explain rules to keep us safe when we are using technology both in and <b>beyond the home</b></p> <p><b>Privacy and Security</b> I can recognise more detailed examples of information that is personal to someone (e.g. where someone lives and goes to school, family names)</p> <p>I can explain that passwords are used to protect information, accounts and devices</p> <p>I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.</p> <p><b>Managing Online Information</b> I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened.</p>	<p>keyboard backspace enter shift spacebar username password curser</p>
<p><b>Explorers of the Wild</b></p>	<p><b>Computing Systems &amp; Networks</b> Improve Mouse Skills</p> <p>To log in to a computer and access a website</p> <p>To develop mouse skills</p> <p>To use mouse skills to draw and edit shapes</p> <p>To draw a scene from a story using digital tools</p> <p>To create a self-portrait using digital techniques</p>		<p><b>Self-Image and Identity</b> 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.</p> <p><b>Copyright and Ownership</b> I can say why it belongs to me (e.g. "I designed it" or "I filmed it").</p> <p>I understand that work created by others does not belong to me even if I save a copy.</p> <p>I can explain why work I create using technology belongs to me.</p>	<p>website software tools shortcut</p>

			I can save my work under a suitable title/name so that others know it belongs to me (e.g. filename, name on content)	
<b>Wombat Stew</b>		<p><b>Programming</b> Code-a-pillars BeeBots</p> <p>To learn that an algorithm is a set of instructions to carry out a task in a specific order</p> <p>To experiment with programming a Codapillar and to learn how to give it simple commands</p> <p>To experiment with programming a BeeBot and to learn how to give it simple commands</p> <p>To learn to debug instructions</p> <p>To use logical reasoning to predict the behaviour of simple programs</p>	<p><b>Online Bullying</b> I can describe how to behave online in ways that do not upset others and can give examples.</p> <p><b>Online Relationships</b> I can give examples of when I should ask permission to do something online and explain why this is important.</p> <p><b>Self-Image and Identity</b> I can recognise that there may be people online who could make someone feel sad, embarrassed or upset.</p> <p><b>Managing Online Information</b> I can give simple examples of how to find information using digital technologies e.g. search engines, voice activated searching.</p>	algorithm coding program debug
<b>Through the Deep Dark Wood</b>	<p><b>Creating Media</b> Digital Imagery</p> <p>To understand and create a sequence of pictures</p> <p>To take clear photos</p> <p>To edit photos</p> <p>To search for and import images</p> <p>To create a photo collage</p>		<p><b>Online Reputation</b> I can describe what information I should not put online without asking a trusted adult first.</p> <p>I can recognise that information can stay online and could be copied.</p>	storyboard photograph capture
<b>Land Ahoy</b>	<p><b>Skills Showcase</b> Rocket to the Moon</p> <p>To recognise that digital content can be represented in many forms</p> <p>To design a rocket using a graphic editing programme</p>		<p><b>Online Relationships</b> I can use the internet with adult support to communicate with people I know (e.g. video call apps or services).</p> <p><b>Managing Online Information</b></p>	algorithm cell row heading data spreadsheet

	To sequence a set of instructions To record data		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.	
<b>Get, Set, Grow</b>		<b>Data Handling</b> Introduction to Data  To represent data in different ways  To use technology to represent data in different ways  To collect and record data  To sort data  To enter data into a branching database	<b>Online Relationships</b> 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.  <b>Health, Wellbeing and Lifestyle</b> I can explain rules to keep us safe when we are using technology both <b>in</b> and beyond <b>the home</b>	data tally pictogram bar chart branching database

At the end of Year 1, a great computer user can:

- ✓ log onto a Chromebook and use a mouse
- ✓ program devices using algorithms and debug devices
- ✓ can use tools on digital software
- ✓ can represent data using spreadsheets and pictograms

## Year 2 Computing Curriculum

Learning Theme	Computer Science	ICT	Digital Literacy	Vocabulary
<b>Awesome Africa</b>	<b>Computing Systems &amp; Networks</b> What is a Computer?  To recognise the parts of a computer  To recognise how technology is controlled  To recognise technology  To create a design for an invention  To understand the role of computers		<b>Health, Wellbeing and Lifestyle</b> 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.  <b>Privacy and Security</b> I can explain and give examples of what is meant by 'private' and 'keeping things private'.  <b>Online Reputation</b>	screen keyboard mouse input output

			<p>I can explain how information put online about someone can last a long time.</p> <p>I can describe how anyone's online information could be seen by others.</p> <p>I know who to talk to if something has been put online without consent or if its incorrect.</p> <p>I can identify who can help me if something happens online without my consent.</p>	
<b>Flames and Fireworks</b>		<p><b>Programming</b> BeeBots</p> <p>To learn that an algorithm is a set of instructions to carry out a task in a specific order</p> <p>To experiment with programming a BeeBot and to learn how to give it simple commands</p> <p>To learn to debug instructions</p> <p>To use logical reasoning to predict the behaviour of simple programs</p>	<p><b>Online Bullying</b></p> <p>I can explain what bullying is, how people may bully others and how bullying can make someone feel.</p> <p>I can explain why anyone who experiences bullying is not to blame.</p> <p>I can talk about how anyone experiencing bullying can</p>	<p>algorithm code program debug</p>
<b>How to Train Your Dragon</b>	<p><b>Creating Media</b> Stop Motion</p> <p>To understand what stop motion animation is</p> <p>To plan my stop motion video, thinking about how I want the characters to move</p> <p>To create a stop motion animation</p> <p>To evaluate my stop motion animation</p>		<p><b>Privacy and Security</b></p> <p>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>I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexia, Google, Siri).</p> <p><b>Online Relationships</b></p> <p>I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.</p>	<p>animation frame storyboard</p>

<p><b>Blue Planet</b></p>		<p><b>Programming</b> Algorithms and Debugging</p> <p>To decompose a game to predict the algorithms that are used</p> <p>To understand that computers can use algorithms to make predictions (machine learning)</p> <p>To plan algorithms that will solve problems</p> <p>To understand what abstraction is</p> <p>To understand what debugging is</p>	<p><b>Online Relationships</b></p> <p>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).</p> <p>I can explain who I should ask before sharing things about myself or others online.</p> <p>I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I'm not sure.</p> <p>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.</p> <p>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.</p>	<p>abstraction algorithm code program debug predict decomposition</p>
<p><b>Fantastic Mr Fox</b></p>	<p><b>Computing Systems &amp; Networks</b> Word Processing</p> <p>To begin to learn to touch type</p> <p>To understand how to use a word processor</p> <p>To understand how to add images to a text document</p> <p>To create a digital piece of writing</p>		<p><b>Privacy and Security</b></p> <p>I can explain how passwords can be used to protect information, accounts and devices.</p> <p>I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords).</p> <p><b>Online Relationships</b></p> <p>I can recognise that content on the internet may belong to other people.</p> <p>I can describe why other people's work belongs to them.</p> <p><b>Managing Online Information</b></p> <p>I can use simple keywords in search engines.</p>	<p>keys type insert image</p>



			I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons, links, tabs, sections).	
<b>Castle Quest</b>		<p><b>Programming</b> Scratch Jnr</p> <p>To explore a new application</p> <p>To create an animation</p> <p>To use characters as buttons</p> <p>To follow an algorithm</p> <p>To plan and use code to create an algorithm</p>	<p><b>Self-Image and Identity</b></p> <p>I can explain how other people may look and act differently online and offline.</p> <p>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><b>Managing Online Information</b></p> <p>I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'.</p> <p>I can explain why some information I find online may not be real or true.</p>	<p>algorithm</p> <p>code</p> <p>program</p> <p>animation</p> <p>loop</p>

At the end of Year 2, a great computer user can:

- ✓ recognise the different parts of a computer
- ✓ program devices using algorithms and debug devices
- ✓ create a simple animation
- ✓ decompose games to find out their algorithm
- ✓ can touch type with increasing accuracy

### Year 3 Computing Curriculum

Learning Theme	Computer Science	ICT	Digital Literacy	Vocabulary
<b>Tribal Tales</b>		<p><b>Computing Systems &amp; Networks</b> Networks and the Internet</p> <p>To understand what a network is and understand our school network</p> <p>To understand how information moves around a network and begin to recognise real world networks</p> <p>To understand how the internet works and explain a website's journey</p>	<p><b>Online Relationships</b></p> <p>I can describe ways people who have similar likes and interests can get together online.</p> <p>I can explain what it means 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.</p>	<p>network</p> <p>network map</p> <p>network switch</p> <p>router</p> <p>server</p> <p>wireless access point (WAP)</p>

		<p>To explore the <b>role of routers</b></p> <p>To understand the <b>role of packets</b></p>	<p><b>Privacy and Security</b> I can describe how connected devices can collect and share anyone's information with others.</p> <p><b>Online Relationships</b> I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried.</p> <p>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.</p> <p>I can explain how someone's feelings can be hurt by what is said or written online.</p>	
<b>The Firework Maker's Daughter</b>		<p><b>Programming</b> Scratch</p> <p>To explore a <b>programming application</b></p> <p>To use <b>repetition (a loop)</b> in a program</p> <p>To <b>program an animation</b></p> <p>To <b>program a story</b></p> <p>To <b>program a game</b></p>	<p><b>Self-Image and Identity</b> I can explain what is meant by the term 'identity'.</p> <p>I can explain how people can represent themselves in different ways online.</p> <p>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.</p>	<p>algorithm</p> <p>block</p> <p>code</p> <p>debug</p> <p>decomposition</p> <p>loop</p> <p>program</p> <p>script</p>
<b>Fossil Hunters</b>		<p><b>Computing Systems &amp; Networks</b> Emailing</p> <p>To understand how we <b>communicate with technology</b></p> <p>To understand what <b>emails are and how to send one</b></p> <p>To know how to create an email <b>with an attachment</b></p>	<p><b>Privacy and Security</b> I can describe simple strategies for creating and keeping passwords private.</p> <p>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.</p> <p><b>Online Bullying</b></p>	<p>attachment</p> <p>compose</p> <p>carbon copy (CC)</p> <p>blind carbon copy (BCC)</p> <p>digital citizen</p>

		<p>To understand the importance of being kind online</p> <p>To recognise when an email is not genuine</p>	<p>I can describe appropriate ways to behave towards other people online and why this is important.</p> <p>I can give examples of how bullying behaviour could appear online and how someone can get support.</p>	
<b>Viva Espana</b>	<p><b>Creating Media</b> Podcasts</p> <p>To identify the features of podcasts</p> <p>To use search technologies effectively to locate information</p> <p>To use software to plan ideas</p> <p>To create a podcast</p>		<p><b>Managing Online Information</b></p> <p>I can demonstrate how to use key phrases in search engines to gather accurate information online.</p> <p>I can explain what <b>autocomplete</b> is and how to choose the best suggestion.</p> <p>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.</p> <p><b>Copyright and Ownership</b></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.</p>	podcast script
<b>Tomb Raiders</b>	<p><b>Creating Media</b> Video Trailers</p> <p>To plan a book trailer</p> <p>To take photos or videos to tell a story</p> <p>To edit photos or videos.</p> <p>To create a book trailer</p> <p>To evaluate video editing</p>		<p><b>Online Reputation</b></p> <p>I can explain how to search for information about others online.</p> <p>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.</p> <p>I can explain who someone can ask if they are unsure about putting something online.</p>	abstraction storyboard crop
<b>Tomb Raiders (2)</b>		<p><b>Data Handling</b> Comparison Card Databases</p> <p>To understand the terminology around databases</p>	<p><b>Health, Well-being and Lifestyle</b></p> <p>I can explain how the internet can be used to sell and buy things.</p> <p>I can explain why spending too much times using technology can sometimes</p>	cell chart database field filter

		<p>To compare paper and computerised databases</p> <p>To sort, filter and interpret data</p> <p>To represent data in different ways</p> <p>To sort data for a purpose</p>	<p>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).</p> <p>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 websites).</p> <p>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, new stories etc.</p> <p>I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed).</p>	<p>record spreadsheet</p>
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At the end of Year 3, a great computer user can:

- ✓ understand what a computer network is
- ✓ create loops in a computer program
- ✓ send a simple email with a subject
- ✓ create and edit digital work using software
- ✓ enter data into a spreadsheet and sort, filter and interpret this data

### Year 4 Computing Curriculum

Learning Theme	Computer Science	ICT	Digital Literacy	Vocabulary
<b>Groovy Greeks</b>		<p><b>Computing Systems &amp; Networks</b> Website Design</p> <p>To explore the features of Google Sites</p>	<p style="text-align: center;">Online Reputation</p> <p>I can explain that internet use is never fully private and is monitored e.g. adult supervision.</p> <p style="text-align: center;">Privacy and Security</p>	<p>homepage</p> <p>hyperlink</p> <p>navigation</p> <p>publish</p> <p>webpage</p> <p>website</p>

		<p>To plan content for a collaborative webpage</p> <p>To create a webpage as part of a collaborative class website</p> <p>To plan and create a website</p> <p>To create and evaluate a website</p>	<p>I can describe strategies for keeping personal information private, depending on context.</p> <p><b>Online Reputation</b></p> <p>I can describe how to find out information about others by searching online.</p> <p>I explain ways that some of the information about anyone online could have been created, copied or shared by others.</p> <p><b>Copyright and Ownership</b></p> <p>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.</p> <p>I can give some examples of content which I must not use without permission from the owner e.g. videos, music, images.</p>	
<p><b>The Big Freeze</b></p>		<p><b>Programming</b> Further Coding with Scratch</p> <p>To recall the key features of Scratch</p> <p>To understand how a Scratch game works by using decomposition to identify key features</p> <p>To understand what a variable is and how to make one</p> <p>To understand how to make a variable in Scratch</p> <p>To use knowledge of how variables work to create a quiz</p>	<p><b>Privacy and Security</b></p> <p>I know what the digital age of consent is and the impact this has on online services asking for consent.</p> <p>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.</p> <p><b>Health, Well-Being and Lifestyle</b></p> <p>I can explain how using technology can be a distraction from other things, in both a positive and negative way.</p> <p>I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can suggest strategies to help with limiting this time.</p> <p><b>Online Bullying</b></p>	<p>algorithm block code loop decomposition variable program script conditional</p>

			I can recognise when someone is upset, hurt or angry online.	
<b>The Variety of Life</b>	<p><b>Creating Media</b> Blogs</p> <p>To identify the purpose of writing a blog and locate its features.</p> <p>To use software to plan the theme and content for a blog.</p> <p>To understand how to write a blog.</p> <p>To create a blog.</p>		<p><b>Managing Online Information</b></p> <p>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.</p> <p>I can describe how to search for information within a wide group of technologies and make a judgement about the probably accuracy (e.g. social media, image sites, video sites).</p> <p><b>Online Bullying</b></p> <p>I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation).</p>	<p>blog</p> <p>heading</p> <p>shortcuts</p> <p>font</p>
<b>The Invention of Hugo Cabret</b>		<p><b>Computer Systems &amp; Networks</b> HTML</p> <p>To understand and identify examples of HTML tags</p> <p>To change HTML code for a specific purpose</p> <p>To change the HTML and CSS to alter the appearance of an object on the web</p> <p>To understand and explore more complex components of a webpage</p> <p>To alter key elements on a webpage including text and images</p>	<p><b>Self-Image and Identity</b></p> <p>I can explain how my online identity can be different to my offline identity.</p> <p>I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them.</p> <p>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>code</p> <p>css</p> <p>html</p> <p>tags</p> <p>remixing</p>
<b>Celts and Conquerors</b>		<p><b>Programming</b> Computational Thinking</p> <p>To understand that computational thinking is made up of four key strands</p>	<p><b>Online Bullying</b></p> <p>I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat).</p> <p><b>Online Relationships</b></p>	<p>abstraction</p> <p>algorithm</p> <p>code</p> <p>computational thinking</p> <p>decomposition</p>

		<p>To understand what decomposition is and how to apply it to solve problems</p> <p>To understand what pattern recognition and abstraction mean</p> <p>To understand how to create an algorithm and what it can be used for</p> <p>To combine computational thinking skills to solve a problem</p>	<p>I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms).</p> <p>I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours.</p> <p>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>input output variable</p>
<p><b>Celts and Conquerors (2)</b></p>	<p><b>Data Handling</b> Investigating the Weather</p> <p>To log data taken from online sources within a spreadsheet</p> <p>To design a weather station</p> <p>To design an automated machine to respond to sensor data</p> <p>To understand how weather forecasts are made</p> <p>To use video to present a weather forecast</p>		<p><b>Managing Online Information</b></p> <p>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.</p> <p>I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true.</p> <p>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.</p> <p>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.</p>	<p>data spreadsheet</p>

At the end of Year 4, a great computer user can:

- ✓ create a simple webpage as part of a website
- ✓ use variables within code
- ✓ create a simple blog post
- ✓ alter HTML code for a specific purpose
- ✓ use decomposition to solve problems
- ✓ log data in a spreadsheet

## Year 5 Computing Curriculum

Learning Theme	Computer Science	ICT	Digital Literacy	Vocabulary
<p><b>Marvelous Mayans</b></p>	<p><b>Computing Systems &amp; Networks</b> Search Engines</p> <p>To understand what a search engine is and how to use it</p> <p>To be aware that not everything online is true</p> <p>To search effectively</p> <p>To create an informative poster</p> <p>To understand how search engines work</p>		<p><b>Privacy and Security</b> I can explain what a strong password is and demonstrate how to create one.</p> <p><b>Online Reputation</b> I can search for information about an individual online and summarise the information found.</p> <p>I can describe ways that information about anyone online can be used by others to make judgements about an individual and why these may be incorrect.</p> <p>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 search giving one result).</p> <p>I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results.</p>	<p>address bar copyright public domain index</p>
<p><b>Magical Muggles</b></p>	<p><b>Creating Media</b> Documentaries</p> <p>To understand what a documentary video is</p> <p>To plan my documentary video</p> <p>To create a documentary video</p> <p>To edit a documentary video</p>		<p><b>Self-Image and Identity</b> I can explain how identify online can be copied, modified or altered.</p> <p>I can demonstrate how to make responsible choices about having an online identity, depending on context.</p> <p><b>Online Bullying</b> I can recognise online bullying can be different to bullying in the physical</p>	<p>storyboard</p>



			<p>world and can describe some of those differences.</p> <p>I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult.</p> <p>I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying.</p> <p>I can identify a range of ways to report concerns and access support both in school and at home about online bullying.</p> <p>I can explain how to block abusive users.</p> <p>I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline or The Mix).</p>	
<p><b>The Truth is Out There</b></p>		<p><b>Data Handling</b> Mars Rover 1</p> <p>To identify how and why data is collected from space</p> <p>To read and calculate numbers using binary code</p> <p>To identify the computer architecture of the Mars Rovers</p> <p>To use simple operations to calculate bit patterns</p> <p>To represent binary as text</p>	<p><b>Managing Online Information</b></p> <p>I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical'.</p> <p>I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence.</p> <p>I can identify ways the internet can draw us to information for different agendas, e.g. website notifications, pop-ups, targeted ads.</p> <p>I can describe ways of identify when online contents has been commercially sponsored or boosted (e.g. by commercial companies or by vloggers, content creators, influencers)</p>	<p>8-bit binary code CPU (central processing unit) data transmission</p>

			<p>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.</p> <p>I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful.</p> <p>I can explain what is meant by a 'hoax'. I can explain why someone would need to think carefully before they share.</p>	
<b>The Explorer</b>		<p><b>Programming</b> Programming Music</p> <p>To tinker with Scratch music elements</p> <p>To create a program that plays themed music</p> <p>To plan a soundtrack program</p> <p>To program a soundtrack</p> <p>To program music for a specific purpose</p>	<p><b>Health, Well-Being and Lifestyle</b></p> <p>I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively.</p> <p>I can describe some strategies, tips or advice to promote health and well-being with regards to technology.</p> <p>I can 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.</p> <p>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.</p>	<p>debug</p> <p>repeat</p> <p>decompose</p> <p>code</p> <p>loop</p> <p>output</p> <p>program</p>
<b>Traders and Raiders</b>		<p><b>Creating Media</b> Stop Motion Animation</p> <p>To understand what animation is</p> <p>To understand what stop motion animation is</p>	<p><b>Privacy and Security</b></p> <p>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.</p>	<p>animation</p> <p>decomposition</p>

		<p>To plan my stop motion video, thinking about the characters I want to use</p> <p>To create a stop motion animation</p> <p>To edit and assess my stop motion animation</p>	<p>I can explain what app permissions are and can give some examples.</p> <p><b>Copyright and Ownership</b> I can assess and justify when it is acceptable to use the work of others.</p> <p>I can give examples of content that is permitted to be reused and know how this content can be found online.</p>	
<p><b>Traders and Raiders (2)</b></p>		<p><b>Skills Showcase</b> Mars Rover 2</p> <p>To understand how bit patterns represent images as pixels</p> <p>To explain how the data for digital images can be compressed</p> <p>To identify and explain the 'fetch, decode, execute' cycle</p> <p>To create a safe online profile and tinker with 3D design software</p> <p>To modify the design of a 3D object using CAD software</p>	<p><b>Online Relationships</b> I can give examples of technology-specific forms of communication (e.g. emojis, memes and GIFs).</p> <p>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.</p> <p>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).</p> <p>I can explain how someone can get help if they are having problems and identify when to tell a trusted adult.</p> <p>I can demonstrate how to support others (including those who are having difficulties) online.</p>	<p>CAD decode execute fetch compression pixels</p>

At the end of Year 5, a great computer user can:

- ✓ understand how a search engine works
- ✓ create and edit a documentary video
- ✓ identify simple binary code
- ✓ create programs which play music
- ✓ create a stop animation program
- ✓ use CAD software to modify designs

## Year 6 Computing Curriculum

Learning Theme	Computer Science	ICT	Digital Literacy	Vocabulary
<p><b>Toil and Trouble</b></p>	<p style="text-align: center;"><b>Creating Media</b> Digital Art</p> <p>To explore image manipulation</p> <p>To explore image manipulation tools</p> <p>To use software to create content that demonstrates image manipulation</p>		<p style="text-align: center;"><b>Privacy and Security</b></p> <p>I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser).</p> <p>I can explain what to do if a password is shared, lost or stolen.</p> <p>I know that online services have terms and conditions that govern their use.</p> <p style="text-align: center;"><b>Self-Image and Identity</b></p> <p>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.</p> <p>I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline.</p> <p>I can explain the importance of asking until I get the help needed.</p> <p style="text-align: center;"><b>Health, Well-Being and Lifestyle</b></p> <p>I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose.</p>	<p>manipulation layers image</p>
<p><b>Darwin's Discoveries</b></p>	<p style="text-align: center;"><b>Data Handling</b> Database Formulas</p> <p>To use technology to support the collection and evaluation of data</p>		<p style="text-align: center;"><b>Health, Well-Being and Lifestyle</b></p> <p>I recognise and can discuss the pressures that technology can place on someone and how/when they could manage this.</p>	<p>data cell formula chart</p>

	<p>To appreciate how results are selected and ranked</p> <p>To use software to create charts to represent data</p> <p>To explore how technology can improve organisation of data</p>		<p><b>Managing Online Information</b> I can explain how search engines work and how results are selected and ranked.</p> <p>I can explain how to use search technologies effectively.</p> <p><b>Online Relationships</b> I can explain how sharing something online may have an impact either positively or negatively.</p> <p>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.</p>	
<p><b>Battle of Britain</b></p>	<p><b>Creating Media</b> History of Computers</p> <p>To tinker with sound</p> <p>To record, edit and add sound effects to a radio play</p> <p>To understand how computers have changed and the impact this has had on the modern world</p> <p>To research one of the computers that changed the world and present information about it to the class</p> <p>To design a computer of the future</p>		<p><b>Health, Well-Being and Lifestyle</b> I can recognise features of persuasive design and how they are used to keep users engaged (current and future use).</p> <p><b>Online Bullying</b> I can describe how to capture bullying content as evidence (e.g. screen-grab, URL, profile) to share with others who can help me.</p> <p>I can explain how someone would report online bullying in different contexts.</p> <p><b>Privacy and Security</b> 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).</p> <p><b>Copyright and Ownership</b> I can demonstrate the use of search tools to find and access online content which can be reused by others.</p>	<p>overlay radio play sound effects bytes (kilo, mega, giga, tera) copyright</p>

			<p>I can demonstrate how to make references to and acknowledge sources I have used from the internet.</p> <p><b>Health, Well-Being and Lifestyle</b> 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).</p>	
<p><b>Battle of Britain (2)</b></p>		<p><b>Data Handling</b> Big Data 1</p> <p>To identify how barcodes and QR codes work</p> <p>To know how infrared waves transmit data</p> <p>To recognise how RFID is used</p> <p>To input and analyse real-world data</p> <p>To analyse and evaluate data</p>	<p><b>Managing Online Information</b> I can describe how some online information can be opinion and can offer examples.</p> <p>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.</p> <p>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).</p> <p>I understand the concept of persuasive design and how it can be used to influence peoples' choices.</p> <p>I can demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important.</p> <p>I can explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this.</p>	<p>barcode/qr code data infrared transmission radio frequency identification (RFID) radio waves</p>

			<p>I can describe the different between online misinformation and disinformation.</p> <p>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).</p> <p>I can identify, flag and report inappropriate</p>	
<b>Kensuke's Kingdom</b>		<p><b>Programming</b> Intro to Python</p> <p>To tinker with a new piece of software</p> <p>To understand nested loops</p> <p>To understand basic Python commands</p> <p>To use loops when programming</p> <p>To understand the use of random numbers</p>	<p><b>Online Relationships</b></p> <p>I can describe how things shared privately online can have unintended consequences for others (e.g. screen-grabs).</p> <p>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>I can explain the ways in which anyone can develop a positive online reputation.</p> <p>I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity.</p>	<p>nested loops command code import input</p>
<b>Lights, Camera, Action</b>	<p><b>Skills Showcase</b> Advertising (link to Junior Apprentice)</p>		<p><b>Privacy and Security</b></p> <p>I can describe how and why people should keep their software and apps up to date, e.g. auto updates.</p> <p>I can describe simple ways to increase privacy on apps and services that provide privacy settings.</p> <p><b>Reactive Lessons for Mobile Phone Use</b></p>	

At the end of Year 6, a great computer user can:

- ✓ manipulate an image
- ✓ use software to represent data
- ✓ use sound effects to produce a radio play
- ✓ understand basic coding commands
- ✓ design and advertise a product on a website
- ✓ analyse and evaluate data