

Computing and Online safety Progression of skills 2021-22

Year 3 Computing Objectives		
Computer Science	Information Technology	Digital Literacy
<p>In addition to objectives taught in the previous year, pupils...</p> <p>Predict what will happen for a more complex sequence of instructions which uses repetition.</p> <p>Investigate how a problem can be solved by decomposing it into smaller steps and by planning a solution.</p> <p>Make algorithms that solve problems which use sequences and repetition.</p> <p>Improve more complex algorithms by identifying mistakes (bugs) and correcting (debugging)</p>	<p>In addition to objectives taught in the previous year, pupils...</p> <p>Save and retrieve files on the school network (a shared drive like PupilShare), understanding that information can be saved in different places (an individual device, a local network or the cloud)</p> <p>Manage various devices correctly, navigating a wide range of apps and software and using individual passwords.</p> <p>Input commands using a keyboard on any device (including on a tablet) with increased fluency, using efficient shortcuts where possible i.e. Shift + 'letter' instead of Caps Lock</p> <p>Create, modify and present work using different software/apps.</p> <p>Evaluate their work and improve its effectiveness.</p> <p>Use technology to present and interpret given data, identifying simple patterns or trends.</p>	<p>In addition to our Online Safety curriculum (Education for a Connected World) and objectives taught in the previous year, pupils...</p> <p>Begin to recognise the different parts of a school network e.g. WIFI point, server</p> <p>Use an online communication system e.g. email, and understand the opportunities this offers.</p> <p>Use search operators i.e. + - to filter information in a search engine</p>

Year 3 Online Safety objectives (Taken from UKCIS Education for a Connected World)

Term 1		Term 2	Term 3	Term 4	Term 5	Term 6	
Self-Image and Identity	Privacy and security	Online Bullying	Online Reputation	Health, well-being and lifestyle	Online Relationships	Managing Online Information	Copyright and ownership
<p>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>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>I can describe how connected devices can collect and share anyone's information with others.</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>	<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>	<p>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).</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 web sites).</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 to 'know someone' online and why this might be different from knowing someone offline.</p> <p>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.</p> <p>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 how someone's feelings can be hurt by what is said or written online.</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 demonstrate how to use key phrases in search engines to gather accurate information online.</p> <p>I can explain what autocomplete is and how to choose the best suggestion.</p> <p>I can explain how the internet can be used to sell and buy things.</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, news 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>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>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>

Year 4 Computing Objectives

Computer Science	Information Technology	Digital Literacy
<p>In addition to objectives taught in the previous year, pupils...</p> <p>Plan the solution to a problem by decomposing into smaller parts e.g. with a flow diagram, storyboard or other plan</p> <p>Investigate how algorithms work and identify the purpose of the different parts of an algorithm</p> <p>Make programs which use sequences, repetition and inputs and outputs when necessary.</p> <p>Improve a program by debugging systematically</p>	<p>In addition to objectives taught in the previous year, pupils...</p> <p>Save and retrieve work independently on the school network or a Cloud system like Purple Mash, using folders to organise work</p> <p>Use a wide range of input devices fluently, such as keyboards, mice and/or touchscreens</p> <p>Create, modify and present work to accomplish specific goals using a variety of software on a range of digital devices.</p> <p>Evaluate their work and improve it, based on their own, and other people's views.</p> <p>Use technology to collect, present and interpret data, using a range of different graphs/charts.</p>	<p>In addition to our Online Safety curriculum (Education for a Connected World) and objectives taught in the previous year, pupils...</p> <p>Recognise different parts of a school or office network e.g. server, switch, router, client, WIFI point,</p> <p>Use an online collaboration system e.g. blogging, and understand the opportunities this offers.</p> <p>Use a wider range of search operators i.e. “ ” ~ define: to efficiently find information in a search engine</p>

Year 4 Online Safety objectives (Taken from UKCIS Education for a Connected World)

Term 1		Term 2	Term 3	Term 4	Term 5	Term 6	
Self-Image and Identity	Privacy and security	Online Bullying	Online Reputation	Health, well-being and lifestyle	Online Relationships	Managing Online Information	Copyright and ownership
<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>I can describe strategies for keeping personal information private, depending on context.</p> <p>I can explain that internet use is never fully private and is monitored, e.g. adult supervision.</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>I know what the digital age of consent is and the impact this has on online services asking for consent.</p>	<p>I can recognise when someone is upset, hurt or angry online.</p> <p>I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat).</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>I can describe how to find out information about others by searching online.</p> <p>I can explain ways that some of the information about anyone online could have been created, copied or shared by others.</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>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>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 probable accuracy (e.g. social media, image sites, video sites).</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>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 simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.</p>

Year 5 Computing Objectives

<u>Computer Science</u>	<u>Information Technology</u>	<u>Digital Literacy</u>
<p>In addition to objectives taught in the previous year, pupils...</p> <p>Plan efficient solutions to problems that include controlling or simulating physical systems, using decomposition to solve the problem</p> <p>Make programs using more complex algorithms, selecting when to use sequences, selection, (if, then), repetition and a range of inputs and outputs</p> <p>Investigate how algorithms work on different platforms, by comparing one block-based code language to another (e.g. Scratch with 2Code)</p> <p>Improve code by systematically testing and debugging it, with an understanding of logic and syntax bugs</p>	<p>In addition to objectives taught in the previous year, pupils...</p> <p>Understand the difference between cloud based saving and other programs, which need to be manually saved.</p> <p>Use input devices fluently, such as keyboards, mice and/or touchscreens to navigate a system, using shortcuts on a keyboard (Ctrl + B, U, I, S, P)</p> <p>Create, modify and present work with a combination of software to achieve a specific goal, using built in functions that help the user such as spellchecker, dictate, immersive reader</p> <p>Evaluate their work and improve it, understanding how various forms of media e.g. photos, video and sound, can aid this.</p> <p>Use a range of tools within computer-based software to evaluate and analyse data i.e. sort, order and group in a database</p>	<p>In addition to our Online Safety curriculum (Education for a Connected World) and objectives taught in the previous year, pupils...</p> <p>Recognise different parts of a school or office network e.g. server, switch, router, client, Wi-Fi point, and explain the purpose of each.</p> <p>Use online communication and collaboration tools for different purposes</p> <p>Use a search engine efficiently by filtering and begin to understand how results are selected and ranked</p>

Year 5 Online Safety objectives (Taken from UKCIS Education for a Connected World)

Term 1		Term 2	Term 3	Term 4	Term 5	Term 6	
Self-Image and Identity	Privacy and security	Online Bullying	Online Reputation	Health, well-being and lifestyle	Online Relationships	Managing Online Information	Copyright and ownership
<p>I can explain how identity 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>I can explain what a strong password is and demonstrate how to create one.</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>I can explain what app permissions are and can give some examples.</p>	<p>I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences.</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 explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult.</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>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 judgments about an individual and why these may be incorrect.</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 wellbeing with regards to technology.</p> <p>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.</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>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>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 aim presented with e.g. voice-activated searching giving one result.</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 evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results.</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 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>

Year 6 Computing Objectives

Computer Science	Information Technology	Digital Literacy
<p>In addition to objectives taught in the previous year, pupils...</p> <p>Plan programs to achieve a specific goal, including controlling or simulating of physical systems by decomposing and by choosing an efficient method of planning i.e. storyboarding, flow diagrams or other method, giving reasons for their choice</p> <p>Make algorithms which find solutions to problems, which use logical reasoning, sequences, selection (if, then, else), repetition, variables and a range of inputs and outputs</p> <p>Investigate different ways of evaluating algorithms for effectiveness and efficiency</p> <p>Improve algorithms, systematically testing and debugging errors with an understanding of logic and syntax bugs</p>	<p>In addition to objectives taught in the previous year, pupils...</p> <p>Use search tools within a system to find saved work.</p> <p>Use input devices fluently, such as keyboards, mice, touchscreens and voice command to enter data in a system.</p> <p>Create, modify and present content using a combination of software (including internet service) on a range of digital devices which solves problems, with a regard to audience, atmosphere and user needs.</p> <p>Evaluate and refine their work, explaining their choices and the impact it has.</p> <p>Use different functions within computer-based software to present, evaluate and efficiently analyse data i.e. tables, charts, graphs and formula in a spreadsheet.</p>	<p>In addition to our Online Safety curriculum (Education for a Connected World) and objectives taught in the previous year, pupils...</p> <p>Recognise the different services that computer networks can provide i.e. the World Wide Web</p> <p>Use a range of online communication and collaboration tools independently and explain the benefits and limitations of each</p> <p>Use a search engine efficiently by filtering and deepen their understanding of how results are selected and ranked</p>

Year 6 Online Safety objectives (Taken from UKCIS Education for a Connected World)

Term 1		Term 2	Term 3	Term 4	Term 5	Term 6	
Self-Image and Identity	Privacy and security	Online Bullying	Online Reputation	Health, well-being and lifestyle	Online Relationships	Managing Online Information	Copyright and ownership
<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>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 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>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>I know that online services have terms and conditions that govern their use.</p>	<p>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>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>I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose.</p> <p>I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this.</p> <p>I can recognise features of persuasive design and how they are used to keep users engaged (current and future use).</p> <p>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>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>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 how search engines work and how results are selected and ranked.</p> <p>I can explain how to use search technologies effectively.</p> <p>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 the use of search tools to find and access online content which can be reused by others.</p> <p>I can demonstrate how to make references to and acknowledge sources I have used from the internet.</p>

By teaching the skills and content laid out in TWHF Computing and Online Safety Curriculum Map, our pupils are taught to...

Key stage 2

- 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.

(The National Curriculum – Computing Subject content)