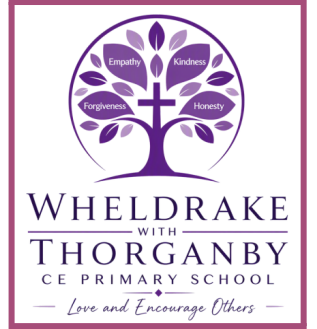


Wheldrake with Thorganby CE Primary School Progression of Skills and Knowledge in Computing



Love and encourage each other.

At Wheldrake, our vision is to nurture a community where we love and encourage each other as we would ourselves, leading to a safe and inspiring environment where every person can thrive academically, socially, and spiritually. This is rooted theologically in the teachings of Jesus and first Christian leaders in the New Testament:

‘Love your neighbour as yourselves.’ Matthew 22:39 ‘Let us encourage one another.’ Hebrews 10:25

Year 1	Computer Science			Information Technology	Digital Literacy		
National Curriculum Statement	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	
Outcome	Children understand that an algorithm is a set of ordered instructions that is used to solve a problem or achieve an objective. When they code, they understand that they are using an algorithm and turning it into something that the computer can interpret. Unit Coverage Creating & Following Instructions Coding	Children can create simple instructions for someone to follow, building up to creating a simple program that a computer can follow by arranging code blocks. They will recognise simple errors in a program such as the way an object is moving and attempt to debug in a purposeful way. Unit Coverage Creating & Following Instructions Coding	When looking at simple programs, children use logical reasoning based upon their understanding of the desired algorithm and their knowledge of code blocks to predict outcomes. They focus on objects and their actions and the events that initiate these actions. Unit Coverage Coding	Children can name, save and retrieve their work and follow simple instructions to access online resources. They create and combine digital content such as images, sound and text with a purpose. Unit Coverage Introduction to PM Creative Computing Data Explorers Animated Stories Making Beats	Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can comment on the specific purpose of technology examples they encounter. Unit Coverage Technology Around Us	See 2BeSafe for breakdown Unit Coverage Technology Around Us	
Year 1 - 2BeSafe Breakdown							
National Curriculum Statement relating to Computing: 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.							
2BeSafe Themes							
Copyright and Ownership	Health, Wellbeing and Lifestyle	Managing Online Information	Online Bullying	Online Relationships	Online Reputation	Privacy and Security	Self-Image and Identity
Children begin to explain why their creations belong to them, for example “I designed it” or “I	Children begin to explain the rules that help them stay safe when using technology, both at home and in other places.	Children are introduced to simple ways of finding information using digital tools like search engines or voice assistants. They learn that the internet contains	Children learn how to behave online in positive ways that do not upset others. They practise giving examples of kind and respectful behaviour.	Children learn that they should ask permission before doing things online and understand why this is important. They practise	Children start to understand that information shared online can stay there and be copied by others. They learn that	Children are introduced to the idea of passwords and how they help protect information, accounts, and devices. They learn	Children start to recognise that, just like in real life, there may be people online who could upset or embarrass them. They

filmed it.” They learn how to save their work with a clear name so it is recognised as theirs. They also understand that work created by other people does not belong to them, even if they save a copy.		all kinds of content — things they like, things they don’t like, and things that may be real or make-believe. They also practise asking a trusted adult for help if they see something that upsets or		communicating with people they know, with adult support, and begin to explore why it matters to be kind, considerate, and respectful to others online - even if people don’t always find the same things funny or upsetting.	some information should not be shared without checking with a trusted adult first.	to recognise more detailed personal information, such as where they live or go to school, and are taught that they should always ask a trusted adult before sharing any of this online.	learn when and how to tell a trusted adult if something worries them and understand that adults can help keep them safe.
Year 2	Computer Science			Information Technology	Digital Literacy		
National Curriculum Statement	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.	
Outcome	Children can create a computer program from an algorithm they have made, turning each step into code. They recognise that outputs from an on-screen program or physical device are directly attributed to the instructions they have coded. Unit Coverage Route Explorers Coding	Children can create programs that include more than one object type. They can alter attributes of objects purposefully and predict and observe the effect. They vary the flow of sequences through the use of timer commands. They can program buttons to initiate events in programs. They know that unexpected errors in their programs are due to the code they have created. They attempt to debug using logical reasoning, interpreting each line of code in sequence. Unit Coverage Route Explorers Coding	Children can identify the parts of a program that respond to specific events and initiate specific actions. Using a design plan or simple written algorithm, they can compare this against how a program is executing when in play mode. Unit Coverage Route Explorers Coding	Children know how to access digital content they have created or have been assigned . They use a range of software to create digital content and manipulate it with purpose. For example, creating spreadsheets to organise data, merging digital artifacts from different sources into a file. They know how to save and edit work. Unit Coverage Creating Pictures Spreadsheets Questioning Presenting Ideas Making Music	Children identify a range of devices that connect to the internet and explain that the internet is used to access websites and find information. They can carry out simple keyword searches to find specific information. Unit Coverage The Internet	See 2BeSafe for breakdown Unit Coverage The Internet 2Be Safe	
Year 2 - 2BeSafe Breakdown National Curriculum Statement relating to Computing: 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.							

2BeSafe Themes							
Copyright and Ownership	Health, Wellbeing and Lifestyle	Managing Online Information	Online Bullying	Online Relationships	Online Reputation	Privacy and Security	Self-Image and Identity
Children learn that content found online often belongs to other people. They begin to explain why it is important to respect that ownership.	Children learn that technology is used in many different environments, such as at home or in public places. They discuss simple guidance to keep themselves and others safe when using devices in these settings.	Children begin using simple keywords in search engines and practise navigating web pages using links, tabs, and buttons. They learn that voice assistants (like Alexa or Siri) are not real people. They also discuss the difference between “real” and “made up” information and learn that not everything they find online is true	Children are introduced to the concept of bullying. They learn what bullying is, how it can happen online, and how it can affect people’s feelings. Importantly, they are taught that anyone being bullied is not to blame and that help is always available	Children start to understand that people may use technology to communicate with strangers, and why this can be risky. They learn about asking permission before sharing information, how to say “no” or “I’m not sure,” and why it’s important to respect other people’s choices. They are encouraged to always ask a trusted adult before agreeing to anything online and to seek help if something happens without their consent.	Children find out that once information is online, it can last a long time and be seen by others. They are encouraged to ask for help if something is shared without consent or if the information is wrong.	Children develop their understanding of passwords and learn rules for keeping personal information private. They talk about what it means for something to be “private,” practise creating and protecting passwords, and learn that many devices in the home are connected to the internet, such as toys, TVs, or even fridges	Children begin to notice that people may look or behave differently online than they do in person. They talk about situations online that might feel worrying or upsetting and learn clear steps they can take to ask for help
Year 3	Computer Science				Information Technology		Digital Literacy
National Curriculum Statement	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 concern about cont
Outcome	Children’s ability to plan algorithms is increasingly detailed including identifying the logical steps towards a solution with stages of decomposition of the overall task. e.g. planning the route of turtle. Their familiarity with coding structures such as sequences and timers allows them to	Children can design and code simple sequential programs, using timers to create delay effects. They can use a repeating program structure as an efficient alternative to a sequence e.g. when drawing simple shapes with a turtle object. Unit Coverage	Children use logical reasoning and their understanding of algorithms to read and create simple flowcharts for planned or existing programs. They use these to support their efforts at debugging logically. They are beginning to consider how the nesting of code affects the program flow.	Children know the ways people can communicate with each other (digital and non-digital). They explore the use of emails and know how they can be exchanged. They are able to read, compose and send their own emails. Unit Coverage	See 2BeSafe Breakdown	Children can identify suitable software for a given task from the suite of Purple Mash Tools. For example, choosing 2Calculate to make a spreadsheet, 2Email to send messages online or 2Question for branching databases. They can create simple databases, spreadsheets to perform calculations and present information.	See 2BeSafe Breakdown Unit Coverage Email

	'read' a program. Unit Coverage Route Planners Coding micro:bits	Route Planners Coding micro:bits	Unit Coverage Route Planners Coding micro:bits	Email		Unit Coverage Email Branching Databases Spreadsheets Presentations Touch Typing	
Year 3 - 2BeSafe Breakdown National Curriculum Statement relating to Computing: Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.							
2BeSafe Themes							
Copyright and Ownership	Health, Wellbeing and Lifestyle	Managing Online Information	Online Bullying	Online Relationships	Online Reputation	Privacy and Security	Self-Image and Identity
Children explore why copying someone else's work from the internet without permission is unfair and can cause problems.	Children explore the idea that spending too much time using technology can sometimes affect health, mood, sleep, or relationships. They learn to recognise both positive and negative online activities that can take up lots of time. They also discuss why some online content has age restrictions and why it is important to follow them, including what to do if they feel pressured to access something inappropriate	Children practise using key phrases in search engines and learn about features like autocomplete. They discover how the internet can be used to buy and sell things, and they begin to understand the difference between beliefs, opinions, and facts. They also talk about how to get help if they see something upsetting online	Children discuss why it is important to behave appropriately towards others online. They look at different ways bullying behaviour may appear online and identify how someone can seek support if it happens.	Children explore how people with similar interests can meet online and think about the difference between "knowing" someone online and knowing them in real life. They learn that trusting someone online is not the same as liking them, and that it is okay to change their mind if they feel unsure. They also discuss the importance of permission when sharing things online, just as they would when sharing offline.	Children learn how to search for information about people online and think about what is safe or not safe to share about themselves. They understand the importance of being careful with personal details and know to ask for guidance if they are unsure.	Children practise simple strategies for creating and keeping passwords secure. They discuss why information should only be shared with people they know and trust, and that if they feel unsure or pressured, they should always tell an adult. They also begin to understand how connected devices can collect and share personal information.	Children are introduced to the idea of identity. They explore how people can show themselves in different ways online, such as through gaming characters, avatars, or social media profiles, and think about why someone might do this.
Year 4	Computer Science				Information Technology		Digital Literacy
National Curriculum Statements	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 concern about content and contact.
Outcome	Children can independently design, code, test, and debug a simple program. Their	Children understand how to structure a program to use selection through the	Children can read multi-step programs and accurately predict outcomes. They show	Children develop their understanding of search engines and how they are used to	See 2BeSafe Breakdown Unit Coverage Effective Searching	Children can effectively use a greater range of software tools and select tools for a purpose. For example,	See 2BeSafe Breakdown Unit Coverage Effective Searching

	ability to decompose a task into smaller parts in order to code or interpret programs allows them greater understanding of how to achieve desired effects with code. They begin to consider efficiency when structuring code. Unit Coverage Logo Coding micro:bits	use of if and if/else statements. Their understanding of program structures enables them to code more complex algorithms that use sequencing, selection and repeat. They can explain the function of a variable and create number variables to keep track of things in a program such as scoring. Unit Coverage Logo Coding micro:bits	more logical approaches to debugging, recognising how different parts of the code interact. Unit Coverage Logo Coding micro:bits	find relevant information. They obtain focused results from a search query using clear keywords and refined searching techniques such as quotation marks. Unit Coverage Effective Searching Unpacking Hardware	AI	audio books using 2Cast, digital animations using 2Animate or Musical compositions using a range of music tools. They can combine digital products such as inserting music they have composed into an animation they create. Unit Coverage Animation Sound Stories Composing Beats Unpacking Hardware AI	
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Year 4 - 2BeSafe Breakdown

National Curriculum Statement relating to Computing: Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

2BeSafe Themes

Copyright and Ownership	Health, Wellbeing and Lifestyle	Managing Online Information	Online Bullying	Online Relationships	Online Reputation	Privacy and Security	Privacy and Security
Children learn to think carefully about who owns content they find online, such as music, images, or videos, and whether they have the right to use it. They are introduced to simple examples of things they must not reuse without permission.	Children begin to recognise how technology can sometimes distract them from other activities. They talk about situations where it may be helpful to limit screen time and discuss simple strategies to manage this.	Children learn to judge whether online information is accurate and why it’s important to make their own decisions. They explore different online spaces such as social media, video sites, or image platforms, and think about how advertising and popups encourage people to buy things. They also learn about fake news, how technology can imitate people (like bots), and why lots of people sharing the same opinion doesn’t necessarily make it true.	Children begin to recognise when others are upset, hurt, or angry online. They learn that bullying can happen through different types of media such as images, videos, texts, or chats. They also explore how what they post can affect others’ feelings and how it might impact their own reputation.	Children learn strategies for enjoying online social environments safely, such as gaming or livestreaming. They practise recognising respectful and unhealthy behaviour, and they reflect on how content that seems unimportant to one person may hold real meaning or feelings for others.	Children continue to explore how information about people can be found online. They learn that information may have been created, copied, or shared by others, and not always by the person themselves.	Children explore different strategies for keeping personal information private in a range of situations. They learn that internet use is never fully private and may be monitored. They also begin to understand how online services may ask for consent to collect or store information, what the “digital age of consent” means, and when to ask an adult for help.	Children reflect on how their online identity might be different from their offline identity. They learn about positive online interactions and how being kind and respectful shapes how others see them. They also begin to understand that people online can pretend to be someone else - even a friend - and discuss possible reasons why.

Year 5	Computer Science				Information Technology		Digital Literacy
National Curriculum Statement	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 concern about content and contact.
Outcome	Children can consider a range of program structures when turning tasks into algorithms. They understand what simulating a physical system means and write programs that decompose these systems and model parts through code. They understand how they are using levels of abstraction and decomposition. Unit Coverage Coding micro:bits External Devices	Children include sequence, selection and repetition in programs. They recognise when the use of a function will improve the efficiency and readability of their code and can create and use functions in coding. They understand how both string and number variables can utilise the system memory to hold information used by the program. Unit Coverage Coding External Devices	Children have increased understanding and familiarity with a variety of coding structures that allows them to 'read' code at a high level and focus logically on the parts they need to debug when something doesn't execute as designed. They use a mixture of logical reasoning and trial and testing to identify and fix bugs. Unit Coverage Coding micro:bits External Devices	See Year 4 for previous outcome and Year 6 for progressive outcome.	See 2BeSafe Breakdown	Children refine their ability to select and use a growing range of software for a purpose. They create and use a range of digital products including databases, spreadsheets and word processing software. They use software to collect data, manipulate, interrogate and produce information based on a specification (query). Unit Coverage Quizzing Databases/Spreadsheets Word Processing Concept Maps Game Creator	See 2BeSafe Breakdown

Year 5 - 2BeSafe Breakdown

National Curriculum Statement(s) relating to Computing: Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

2BeSafe Themes

Copyright and Ownership	Health, Wellbeing and Lifestyle	Managing Online Information	Online Bullying	Online Relationships	Online Reputation	Privacy and Security	Self-Image and Identity
Children begin to assess when it is acceptable to use someone else's work and when it is not. They also learn how to find content that is allowed to be reused, such as	Children develop a deeper understanding of how tech can affect health and wellbeing, both positively (such as through fitness or mindfulness apps) and negatively. They learn practical tips for healthy	Children explore the benefits and limitations of different search technologies, such as voice search. They begin to understand what it means to be sceptical and how to decide whether content is trustworthy. They learn	Children deepen their understanding by exploring how online bullying can be different from bullying in real life. They think about how joking or "banter" can sometimes be experienced as hurtful or	Children explore more forms of online communication, such as emojis, memes, and GIFs. They learn that while online communities can be positive, there are also people who may want to	Children develop the skills to search for information about individuals online and summarise what they find. They also learn that online information can be used by others to form judgements	Children learn what makes a strong password and how to create one. They begin to understand that many free apps and services can collect and share private information, such as	Children learn that online identities can be copied, changed, or altered. They start to think about the choices they make when creating their own online identity and how to do this responsibly,

resources labelled for sharing.	technology use, explore benefits and risks of online health information, and understand the importance of checking things with trusted adults or professionals. They also learn about in-app purchases, loot boxes, and why they should always ask permission before spending money online.	about adverts, targeted content, and sponsorship, and how stereotypes can be spread online. They also explore how hoaxes and fake news can influence people's feelings and behaviour, and why it's important to think carefully before sharing.	bullying. They learn strategies for getting help, including how to report bullying, block abusive users, and access helplines such as Childline or The Mix.	cause harm, and this is never the child's fault. They consider how to collaborate positively online, how to support others, and when it is important to seek help from a trusted adult.	about a person - and why those judgements may not always be fair or correct.	contacts, photos, or location. They are also introduced to app permissions and what they mean.	depending on the situation.
Year 6	Computer Science				Information Technology		Digital Literacy
National Curriculum Statements	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 concern about content and contact.
Outcome	Children understand the advantage of coding from program design documentation and do this at a deeper level of abstraction enabling them to produce accurate algorithms to code. They follow flowcharts to design and debug programs. Children use decomposition & abstraction more confidently to simplify and break down tasks. Unit Coverage Coding Python	Children have both coding structure understanding and knowledge of a greater range of coding components that enable them to make use of variables, user inputs, cloning and hotspots to add complexity and user interactivity to their programs. They are able to translate skills and understanding gained through the use of block coding programs to text-based coding in Python. Unit Coverage Coding Python	Children default to a logical approach when debugging. They begin debugging at the program design and algorithm stage of tasks so their coding becomes more effective with less reliance on a try and test approach at the early stages of coding a program. They can then use a step-by-step approach to step through parts of code. Unit Coverage Coding Python	Children can explain the function of networks and the difference between a LAN and a WAN with relevant examples. They understand the difference between the internet and the World Wide Web and can name some services as examples of each. Unit Coverage Networks	See 2BeSafe Breakdown	Children's use of a range of digital tools demonstrates their transferrable skills between tools both within Purple Mash and to industry standard software. They use tools with a greater level of sophistication. For example, including their own digital artefacts within their blogs, graphs within written pieces and application of data analysis. Unit Coverage Graphing Blogging Data Detectives Spreadsheets 3D Modelling	See 2BeSafe Breakdown

Year 6 - 2BeSafe Breakdown							
National Curriculum Statement(s) relating to Computing: Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.							
2BeSafe Themes							
Copyright and Ownership	Health, Wellbeing and Lifestyle	Managing Online Information	Online Bullying	Online Relationships	Online Reputation	Privacy and Security	Self-Image and Identity
Children practise using search tools to find content that can be reused by others. They also learn how to give credit by referencing and acknowledging the sources they have used from the internet	Children learn about systems that regulate age-related content (such as PEGI ratings for games or BBFC ratings for films) and why these are important. They explore how technology can create pressures, including persuasive designs that keep people online for longer. They also learn strategies to protect their health, such as taking breaks, using night-shift mode, sitting correctly, and balancing screen time with sleep, diet, and exercise.	Children learn in more depth how search engines work and how results are ranked. They practise evaluating information for reliability and learn how opinions may sometimes be presented as facts. They discuss persuasion, manipulation, and targeted advertising, and how persuasive design can influence people’s choices. They also explore the difference between misinformation and disinformation, why repeated information may still be untrue.	Children learn practical strategies to deal with online bullying, such as how to capture evidence (screenshots, URLs, profiles) and share it with trusted adults. They also explore how to report bullying in different online contexts.	Children think critically about the impact of sharing online, both positive and negative. They learn the importance of respecting boundaries when sharing about others and understand that even private sharing (such as screenshots) can have unintended consequences. They also discuss the risks of taking or sharing inappropriate or embarrassing images and learn how to get help if they or someone else feels worried.	Children explore how to build and protect a positive online reputation. They discuss strategies for safeguarding their digital identity, including the use of privacy settings and understanding different levels of anonymity.	Children learn strategies for managing and protecting passwords, including what to do if one is lost or stolen. They explore why keeping software up to date is important and how privacy settings can increase protection online. They also learn about online scams and phishing, with strategies to recognise and avoid them, and they begin to understand that all online services have terms and conditions that govern their use.	Children look more critically at online content and discuss how some representations - for example about gender, race, religion, or disability - can be harmful or unfair. They learn why it is important to challenge stereotypes and reject inappropriate content. They also revisit how to get help if something online makes them feel upset or unsafe, and why it’s important to keep asking until they get the support they need.