

'Roots to Grow and Wings to Fly'



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Curriculum Progression Document

Computing

St Bartholomew's Computing Curriculum

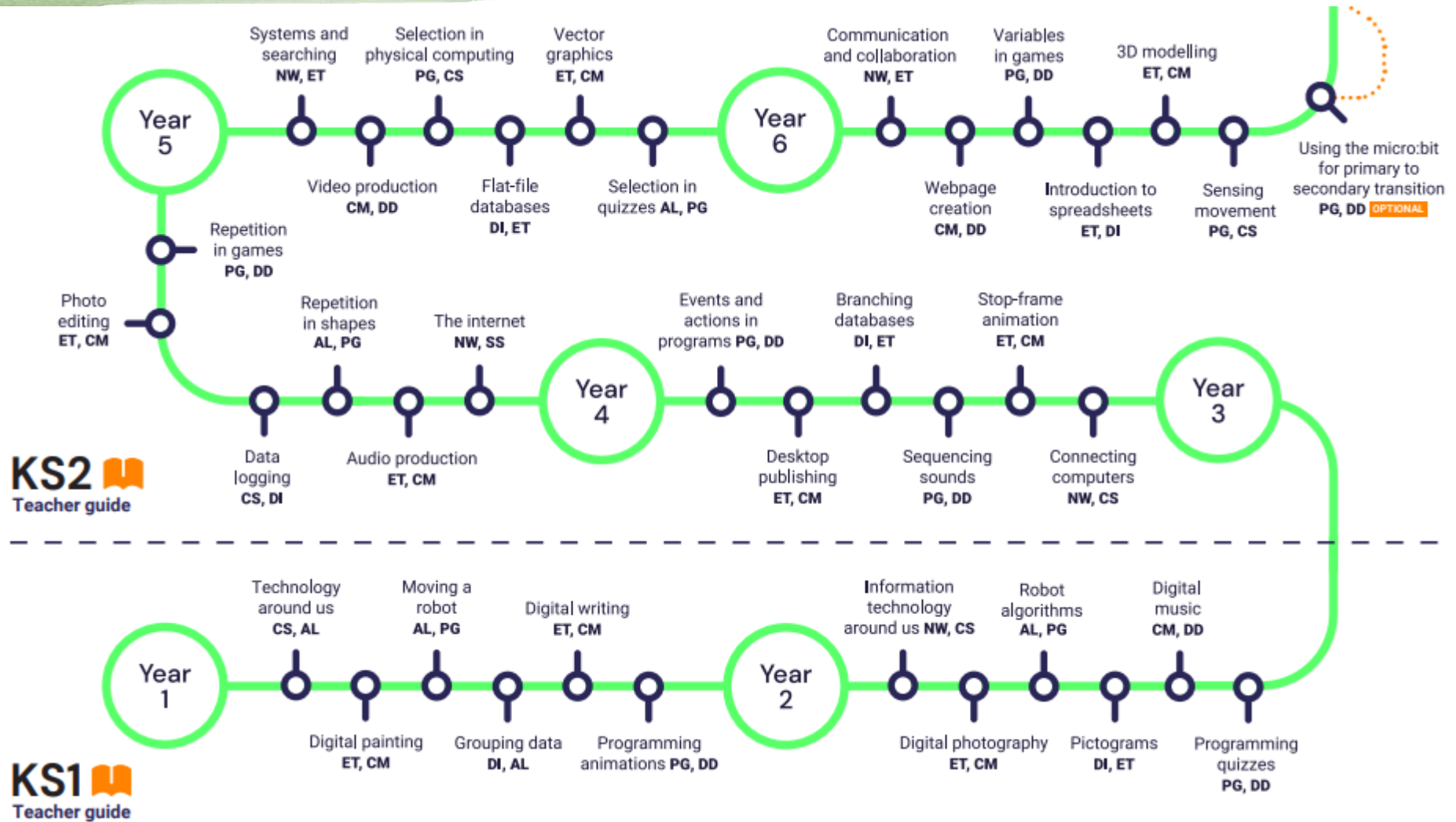
Vision-

To provide a high quality, inclusive computing education which will equip children to use computational thinking and creativity in order to understand and change their world. Children will learn digital literacy skills and key principles to flourish as confident, happy, self-motivated users of information and communication technology. They will make links with other areas of their learning such as Science, Mathematics and Design Technology. Our children will be equipped to become active and responsible participants in their digital world.

Contents

Page 3	Computer curriculum progression
Page 4	Intent, Impact, Implementation – The approach
Page 5	Spiral curriculum
Page 5	Core principles
Page 6	Key stage 1 overview
Page 7	Key stage 1 unit summaries
Page 8	Teaching progression
Page 12	Key stage 2 overview
Page 13	Key stage 2 unit summaries
Page 15	Pedagogy
Page 17	Adaptations
Page 20	Online safety progression through the school
Page 23	What will computing look like in the school
Page 23	Assessment
Page 24	SEND
Page 24	Monitoring and review

Computing curriculum progression



The approach

Coherence and Flexibility

The Teach Computing Curriculum is structured in units. For these units to be coherent, the lessons within a unit must be taught in order. However, across a year group, the units themselves do not need to be taught in order, with the exception of 'Programming' units, where concepts and skills rely on prior learning and experiences.

The Teach Computing Curriculum (ncce.io/tcc) is a comprehensive collection of materials produced to support 500 hours of teaching, facilitating the delivery of the entire English computing curriculum from key stage 1 to 4 (5- to 16-year-olds). The Teach Computing Curriculum was created by the Raspberry Pi Foundation on behalf of the National Centre for Computing Education (NCCE). All content is free, and editable under the Open Government Licence (OGL —ncce.io/ogl), ensuring that the resources can be tailored to each individual teacher and school setting. The materials are suitable for all pupils, irrespective of their skills, background and additional needs.

Knowledge organisation

The Teach Computing Curriculum uses the National Centre for Computing Education's computing taxonomy to ensure comprehensive coverage of the subject. This has been developed through a thorough review of the KS1-4 computing programme of study, and the GCSE and A level computer science specifications across all awarding bodies. All learning outcomes can be described through a high-level taxonomy of ten strands, ordered alphabetically as follows:

- Algorithms —Be able to comprehend, design, create and evaluate algorithms
- Computer networks —Understand how networks can be used to retrieve and share information, and how they come with associated risks
- Computer systems — Understand what a computer is, and how its constituent parts function together as a whole
- Creating media — Select and create a range of media including text, images, sounds and video
- Data and information —Understand how data is stored, organised, and used to represent real world artefacts and scenarios
- Design and development —Understand the activities involved in planning, creating, and evaluating computing artefacts
- Effective use of tools —Use software tools to support computing work

Impact of technology —Understand how individuals, systems, and society as a whole interact with computer systems

- Programming —Create software to allow computers to solve problems
- Safety and security —Understand risks when using technology, and how to protect individuals and systems

The taxonomy provides categories and an organised view of content to encapsulate the discipline of computing. Whilst all strands are present at all phases, they are not always taught explicitly. For these units to be coherent, the lessons within a unit must be taught in order. However, across a year group, the units themselves do not need to be taught in order, with the exception of 'Programming' units, where concepts and skills rely on prior learning and experience.

Spiral curriculum

The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made even if different teachers are teaching the units within a theme in consecutive years

Physical computing

The Teach Computing Curriculum acknowledges that physical computing plays an important role in modern pedagogical approaches to computing, both as a tool to engage pupils and as a strategy to develop pupils' understanding in more creative ways. Additionally, physical computing supports and engages a diverse range of pupils in tangible and challenging tasks.

Core principles

Inclusive and ambitious.

The Teach Computing Curriculum has been written to support all pupils. Each lesson is sequenced so that it builds on the learning from the previous lesson, and where appropriate, activities are scaffolded so that all pupils can succeed and thrive. Scaffolded activities provide pupils with extra resources, such as visual prompts, to reach the same learning goals as the rest of the class. Exploratory tasks foster a deeper understanding of a concept, encouraging pupils to apply their learning in different contexts and make connections with other learning experiences.

As well as scaffolded activities, embedded within the lessons are a range of pedagogical strategies (defined in the 'Pedagogy' section of this document), which support making computing topics more accessible. If your pupils need additional support, please see the guidance for adapting the curriculum for pupils with SEND, as this provides ideas for further scaffold.

To stretch more able pupils, we focus on deepening understanding and allowing pupils to explain and justify their reasoning. Make tasks more open-ended to encourage independence, and use questioning to probe higher-order thinking. 'Why' and 'How' questions can encourage more able learners to consider the impact of their decisions and explain their underlying thought process.

Research-informed

The subject of computing is much younger than many other subjects, and as such, there is still a lot more to learn about how to teach it effectively. To ensure that teachers are as prepared as possible, the Teach Computing Curriculum builds on a set of pedagogical principles (see the 'Pedagogy' section of this document), which are underpinned by the latest computing research. To demonstrate effective pedagogical strategies throughout. To remain up-to-date as research continues to develop, every aspect of the Teach Computing Curriculum is reviewed each year and changes are made as necessary.

Key stage 1 overview

	Computing systems and networks ¹	Creating media	Programming A	Data and information	Creating media	Programming B
Year 1	Technology around us (1.1)*	Digital painting (1.2)	Moving a robot (1.3)	Grouping data (1.4)	Digital writing (1.5)	Programming animations (1.6)
Year 2	Information technology around us (2.1)	Digital photography (2.2)	Robot algorithms (2.3)	Pictograms (2.4)	Digital music (2.5)	Programming quizzes (2.6)

Key Stage 1 unit summaries

	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
Year 1	<p>Technology around us</p> <p>Recognising technology in school and using it responsibly.</p>	<p>Digital painting</p> <p>Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.</p>	<p>Moving a robot</p> <p>Writing short algorithms and programs for floor robots, and predicting program outcomes.</p>	<p>Grouping data</p> <p>Exploring object labels, then using them to sort and group objects by properties.</p>	<p>Digital writing</p> <p>Using a computer to create and format text, before comparing to writing non-digitally.</p>	<p>Programming animations</p> <p>Designing and programming the movement of a character on screen to tell stories.</p>
Year 2	<p>Information technology around us</p> <p>Identifying IT and how its responsible use improves our world in school and beyond.</p>	<p>Digital photography</p> <p>Capturing and changing digital photographs for different purposes.</p>	<p>Robot algorithms</p> <p>Creating and debugging programs, and using logical reasoning to make predictions.</p>	<p>Pictograms</p> <p>Collecting data in tally charts and using attributes to organise and present data on a computer.</p>	<p>Digital music</p> <p>Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.</p>	<p>Programming quizzes</p> <p>Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.</p>

Progression

Progression through the taxonomy Within the Teach Computing Curriculum, every year group learns through units within the same four themes, which combine the ten strands of the National Centre for Computing Education's taxonomy (see table, right). All learning objectives have been mapped to the strands, which ensures that units build on each other from one key stage to the next.

Teaching order

The order in which to teach units within a school year is not prescribed, other than for the two 'Programming' units for each year group, which build on each other. It is recommended that the 'Programming' and 'Creating media' units be revisited in two different terms within the school year, so that the concepts and skills can be revisited and consolidated. Otherwise, schools can choose the order in which they teach the units, based on the needs of their pupils and other topics or events that are happening throughout the school year, to make use of cross-curricular links wherever possible.

Digital Literacy

All of the Teach Computing content is mapped to the tenstrand taxonomy, which covers the breadth of computing (see progression through the taxonomy). Within these strands, key elements of digital literacy have been identified, such as effective use of tools, impact of technology and safety and security. These strands are woven throughout the four key themes, with skills and knowledge applied across the teach computing curriculum.

Progression throughout the four themes

With the curriculum organised into four key themes, a spiral approach is adopted. This ensures skills and concepts progress from one year group to the next.

Computer Systems and Networks

The Computer Systems and Networks strand is taught once a year, building progressively from one year group to the next, with subject specific knowledge introduced at age-appropriate points

Computer Systems and Networks	
1	Technology around us
2	IT around us
3	Connecting Computers
4	The Internet
5	Systems and Searching
6	Communication and Collaboration

Data and Information

The Data and Information strand is again taught once a year, progressing in both skills and software. Key Stage 1 uses simplified age-appropriate software platforms, progressing to more industry focused software in upper Key Stage 2.

Data and Information	
1	Grouping data
2	Pictograms
3	Branching databases
4	Data logging
5	Flat file databases
6	Introduction to spreadsheets

Programming Primary

The Programming stand is taught twice a year, with the same concept revisited and covered in more depth. The following year incorporates the previous skills, whilst progressing onto a new concept.

Programming		
1	Moving a Robot	Programming animations
2	Robot algorithms	Programming quizzes
3	Sequencing sounds	Events and actions in programs
4	Repetition in shapes	Repetition in games
5	Selection in physical computing	Selection in quizzes
6	Variables in games	Sensing movement

Creating Media

The Creating Media strand hosts a wide range of different media types, and therefore different skills. To support progression, this can be best categorised into four different key areas: text, graphics (the use of pictures and text), photo and video, and audio. The spiral curriculum covers each of these four areas over a phase (KS1, LKS2 and UKS2), rather than in every year group, with links across these areas made where possible.

Creating Media				
	Text	Graphics	Photo and Video	Audio
1	Digital writing	Digital painting		
2			Digital photography	Digital music
3	Desktop publishing	Stop frame animation		
4		Photo editing		Audio production
5		Introduction to vector graphics	Video production	
6	Web page creation	3D modelling		

Key Stage 2 overview

	Computing Systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
Year 3	Connecting computers (3.1)*	Stop-frame animation (3.2)	Sequencing sounds (3.3)	Branching databases (3.4)	Desktop publishing (3.5)	Events and actions in programs (3.6)
Year 4	The Internet (4.1)	Audio production (4.2)	Repetition in shapes (4.3)	Data logging (4.4)	Photo editing (4.5)	Repetition in games (4.6)
Year 5	Systems and searching (5.1)	Video production (5.2)	Selection in physical computing (5.3)	Flat-file databases (5.4)	Introduction to vector graphics (5.5)	Selection in quizzes (5.6)
Year 6	Communication and collaboration (6.1)	Web page creation (6.2)	Variables in games (6.3)	Spreadsheets (6.4)	3D modelling (6.5)	Sensing movement (6.6)

Unit summaries

	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
Year 3	<p>Connecting computers Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks</p>	<p>Stop-frame animation Capturing and editing digital still images to produce a stop frame animation that tells a story</p>	<p>Sequencing sounds Creating sequences in a block-based programming language to make music.</p>	<p>Branching databases Building and using branching databases to group objects using yes/no questions.</p>	<p>Desktop publishing Creating documents and modifying text, images and page layouts for a specific purpose.</p>	<p>Events and actions in programs Writing algorithms and programs that use a range of events to trigger sequences of actions.</p>
Year 4	<p>The internet Recognising that the internet is a network of networks including the WWW, and why we should evaluate online content.</p>	<p>Audio production Capturing and editing audio to produce a podcast, ensuring that copyright is considered.</p>	<p>Repetition in shapes Using a text-based programming language to explore count-controlled loops when drawing shapes.</p>	<p>Data logging Recognising how and why data is collected over time, before using data loggers to carry out an investigation,</p>	<p>Photo editing Manipulating digital images, and reflecting on the impact of the changes and whether the required purpose is fulfilled,</p>	<p>Repetition in games Using a block-based programming language to explore count-controlled and infinite loops when creating a game.</p>

	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
Year 5	<p>Systems and searching Recognising IT systems in the world and how some can enable searching on the internet.</p>	<p>Video production Planning, capturing, and editing video to produce a short film.</p>	<p>Selection in physical computing Exploring conditions and selection using a programmable microcontroller.</p>	<p>Flat-file databases Using a database to order data and create charts to answer questions.</p>	<p>Introduction to vector graphics Creating images in a drawing program by using layers and groups of objects.</p>	<p>Selection in quizzes Exploring selection in programming to design and code an interactive quiz.</p>
Year 6	<p>Communication and collaboration Exploring how data is transferred by working collaboratively online.</p>	<p>Webpage creation Designing and creating webpages, giving consideration to copyright, aesthetics and navigation.</p>	<p>Variables in games Exploring variables when designing and coding a game.</p>	<p>Introduction to spreadsheets Answering questions by using spreadsheets to organise and calculate data.</p>	<p>3D modelling Planning, developing, and evaluation 3D computer models of physical objects.</p>	<p>Sensing movement Designing and coding a project that captures inputs from physical devices.</p>

Pedagogy

Computing is a broad discipline, and computing teachers require a range of strategies to deliver effective lessons to their pupils. The National Centre for Computing Education's pedagogical approach consists of 12 key principles underpinned by research: each principle has been shown to contribute to effective teaching and learning in computing.

It is recommended that computing teachers use their professional judgement to review, select, and apply relevant strategies for their pupils.

These 12 principles are embodied by the Teach Computing Curriculum, and examples of their application can be found throughout the units of work at every key stage. Beyond delivering these units, you can learn more about these principles and related strategies in the National Centre for Computing Education pedagogy toolkit (nccce.io/pedagogy)

Lead with concepts

Support pupils in the acquisition of knowledge, through the use of key concepts, terms, and vocabulary, providing opportunities to build a shared and consistent understanding. Glossaries, concept maps and displays, along with regular recall and revision, can support this approach.

Work together

programming and peer instruction, and also structured group tasks. Working together stimulates classroom dialogue, articulation of concepts, and development of shared understanding.

Get hands-on

Use physical computing and making activities that offer tactile and sensory experiences to enhance learning. Combining electronics and programming with arts and crafts (especially through exploratory projects) provides pupils with a creative, engaging context to explore and apply computing concepts.

Unplug, unpack, repack

Teach new concepts by first unpacking complex terms and ideas, exploring these ideas in unplugged and familiar contexts, then repacking this new understanding into the original concept. This approach, called 'semantic waves', can help pupils develop a secure understanding of complex concepts.

Model everything

Model processes or practices – everything from debugging code to binary number conversions – using techniques such as worked examples and live coding. Modelling is particularly beneficial to novices, providing scaffolding that can be gradually taken away.

Foster program comprehension

Use a variety of activities to consolidate knowledge and understanding of the function and structure of programs, including debugging, tracing, and Parson’s problems. Regular comprehension activities will help secure understanding and build connections with new knowledge.

Create projects

Use project-based learning activities to provide pupils with the opportunity to apply and consolidate their knowledge and understanding. Design is an important, often overlooked aspect of computing. Pupils can consider how to develop an artefact for a particular user or function, and evaluate it against a set of criteria.

Add variety

Provide activities with different levels of direction, scaffolding, and support that promote learning, ranging from highly structured to more exploratory tasks. Adapting your instructions to suit different objectives will help keep all pupils engaged and encourage greater independence.

Challenge misconceptions

Use formative questioning to uncover misconceptions and adapt teaching to address them as they occur. Awareness of common misconceptions alongside discussion, concept mapping, peer instruction, or simple quizzes can help identify areas of confusion.

Make concrete

Bring abstract concepts to life with real-world, contextual examples, and a focus on interdependencies with other curriculum subjects. This can be achieved through the use of unplugged activities, proposing analogies.

Structure lessons

Use supportive frameworks when planning lessons, such as PRIMM (Predict, Run, Investigate, Modify, Make) and Use-Modify-Create. These frameworks are based on research and ensure that differentiation can be built in at various stages of the lesson.

Read and explore code first

When teaching programming, focus first on code ‘reading’ activities, before code writing. With both block-based and text-based programming, encourage pupils to review and interpret blocks of code. Research has shown that being able to read, trace, and explain code augments pupils’ ability to write code.

Adapting the curriculum for pupils with SEND

The Teach Computing Curriculum has been written to support all pupils, with units containing a number of scaffolding activities and utilising effective pedagogies to ensure high quality teaching. However, you may still need to adapt resources to enable some of your pupils, for example those with special educational needs and disabilities (SEND), to access lessons fully.

The following principles will help you make adaptations that benefit all learners, and these will be more effective if you identify clearly what it is your individual pupils need help with - do they have poor working memory that means that following instructions is more difficult, or do they need help to stay focussed when completing projects?

1. Identify essential learning and misconceptions:

Determine the key learning in each unit that every child should know. Provide repeated opportunities for pupils to revisit this content in different ways. Identify any likely misconceptions and address these explicitly in lessons. For example, in the year 1 Moving a Robot unit, pupils might struggle with right and left turns and what this looks like for the Bee-Bot, so it is worth spending extra time modelling and practising this.

2. Pre-teach key vocabulary: Pre-teach the essential vocabulary for each unit, provide learners with a word list supported by images and use the vocabulary regularly throughout the unit with a consistent definition. Concentrate on a small number of terms and consider using a graphic organiser to highlight relationships between concepts, e.g. [the Frayer model](#).

3. Create step-by-step instructions: Break down complex tasks and routine skills for using software and hardware into smaller steps and create pictorial instructions for children to follow. For example, in the year 2 Digital Music unit, you can adapt the Chrome Music Lab song maker help card handout to create a sequence of instructions for making their own composition.

4. Provide templates: In Creating Media or Data & Information units, support task completion by providing a template for pupils to modify – removing the fear of the blank page and helping to build confidence. For example, in the year 2 Pictograms unit, pupils can continue to use the minibeast template rather than set up their own pictogram.

5. Consider non-computing barriers: Consider if difficulties in other areas, such as writing or maths, present barriers to completing a task and if so, modify the task to help mitigate these. For example, in the ‘What can you tell me’ task within the year 2 Pictograms unit, allow pupils to dictate sentences into a digital version of the worksheet rather than writing them down.

6. Use the PRIMM framework or Parson’s problems: In programming units, add extra scaffolding using [PRIMM](#) and Parson’s problems. Some pupils may not be able to create a program, but they can practise reading and exploring code in a working program, then modify it to make it more personalised. For example, in the year 1 Programming Animations unit you could provide learners with the code to make the rockets move as a Parson’s problem to put together in the correct order. The aim is to remove these scaffolds as children develop their skills, but some learners may not become fully independent.

Assessment

Formative assessment

Every lesson includes formative assessment opportunities for teachers to use. These opportunities are listed in the lesson plan and are included to ensure that misconceptions are recognised and addressed if they occur. They vary from teacher observation or questioning, to marked activities.

These assessments are vital to ensure that teachers are adapting their teaching to suit the needs of the pupils that they are working with, and you are encouraged to change parts of the lesson, such as how much time you spend on a specific activity, in response to these assessments.

The learning objectives and success criteria are introduced in the slides at the beginning of every lesson. At the end of every lesson, pupils are invited to assess how well they feel they have met the learning objectives using thumbs up, thumbs down, or thumbs sideways. This gives pupils a

a reminder of the content that has been covered, as well as a chance to reflect. It is also a chance for teachers to see how confident the class is feeling so that they can make changes to subsequent lessons accordingly.

Summative assessment

Every unit includes an optional summative assessment framework in the form of either a multiple choice quiz (MCQ) or a rubric. Pedagogically, when we assess, we want to ensure that we are assessing a pupil's understanding of computing concepts and skills, as opposed to their reading and writing skills. Therefore, the assessments in key stage one are mostly rubric-based, though MCQs are introduced in year 2. A rubric is a tool to help teachers assess learning and highlights whether the pupil is approaching (emerging), achieving (expected), or exceeding the expectations for computing in their age group.

Observing learning

To support you in completing your rubrics for pupils in KS1, and to avoid only assessing the end product, we recommend using the success criteria in each lesson and capturing some of the following while the lesson is taking place:

- Records of the work that pupils complete across a unit
- Notes on conversations or discussions that you have or hear during an activity
- The pupils' self-assessments at the end of the lesson

This data is to support teachers' assessments of the pupils' understanding of the concepts and skills that were taught in the lesson. To help you make these assessments, you could also use one, or a combination of, the following strategies:

- Focussing on different pupils each lesson
- Creating checklists of what you expect to see
- Focussing on specific pupils

7. Harness pupils’ special interests: Increase engagement and make learning more relevant by incorporating pupils’ special interests. This is also important in terms of [culturally relevant pedagogy](#). For example, in the year 1 Programming Animations unit, pupils could make different animals race, or another form of transport.

8. Use unplugged activities and the semantic wave: We can use unplugged activities to help make computing concepts more relevant and understandable for learners. However, it is very important to ‘repack’ the knowledge of the abstract concept so that learners understand what it means in a wider context and they can use the technical language. For example, in the year 1 Moving a Robot unit pupils work in pairs to develop their understanding of algorithms. One pupil directs their ‘robot’ partner by giving precise instructions on where to move. Children then need to see the link between instructing their ‘robot’ partner and how this transfers to pressing buttons on a Bee-Bot, whilst also practising using the key language in context. Pupils with SEND may need repeated examples and smaller steps to repack the knowledge.

9. Support planning: Break down the planning process into smaller parts which can be ticked off as each one is completed, and provide a planning scaffold for learners where required. For example, when planning out algorithms for the Bee-Bot, use a scaffold with the clear and go commands already included and provide command cards to slot into the gaps in between.

10. Reinforce digital skills: A significant barrier to accessing the whole computing curriculum is a lack of key digital skills, for example being able to log on to a computer and use the keyboard effectively. Time spent revisiting digital skills across all units is important to develop fluency. Some pupils may also benefit from extra time to practise these skills in small groups, or may need image-supported help sheets to support specific repeated tasks, such as saving work.

It is important that your adaptations are informed by effective formative assessment to identify any gaps in learning and the approach which may support with these.

A further resource which can support you is the [Universal Design for Learning Framework](#) from CAST which outlines a number of approaches to include all learners in lessons by providing multiple means of engagement, representation, action and expression.

For support from fellow teachers with individual units, head over to the [STEM community](#) and join the discussions about adapting units for pupils with SEND.

Finally, there is CPD available to support you further. Complete this online course to improve your knowledge: [Creating an Inclusive Classroom: Approaches to Supporting Learners with SEND in Computing](#) or attend the face-to-face course: [Inclusive Computing in Primary Schools](#).

Online safety Curriculum Overview

	EYFS/Year 1	Year 2	Year 3	Year 4
E-Safety - Content	To know how the internet and digital devices can be used safely to find things out and to communicate with others		To know the role of the internet in everyday life	
	To select from a list of apps, games and websites that a trusted adult gives me	To describe the things I enjoy about age appropriate apps, games and websites I am guided to use	To use age appropriate apps, games and websites from a list I have agreed with others	To choose apps, games and websites that are appropriate for my age and explain my reasons to friends
	To know that some material online is protected	To know that pictures, videos or music online belongs to someone	To think about whether I can use images that I find online in my own work	To explain how to check who owns photos, text and clipart
	To know that just because someone has a belief it doesn't make it true	To know that having a belief does not give anyone the right to break the law or hurt others	To show awareness of the harm that can be caused by terrorism and extremism (Including online)	
	To know not all information seen online is true		To explain how digitally altered images in the media make me feel	
			To use search tools to find appropriate information and decide whether I can trust it	To identify key words to use when searching safely online and think about the reliability of information I find
	To be careful about the icons I click or tap when I use technology devices		To identify adverts online, including those within Google searches	To ignore or close adverts and pop-ups that appear on my device and explain my reasons
			To identify some possible risks to devices	To explain why I need to protect my computer or device from harm
	To use links to websites to find information	To know there can be risks to downloading things from the internet	To ask a trusted adult before downloading files and games from the Internet	To explain why I need to ask a trusted adult before downloading files and games from the internet

	Year 3	Year 4	Year 5	Year 6	
E-Safety - Content	To know the role of the internet in everyday life		To know that for most people the internet is an integral part of life and has many benefits		
	To think about whether I can use images that I find online in my own work	To explain how to check who owns photos, text and clipart		To acknowledge the sources of information that I find online	
	To explain how digitally altered images in the media make me feel		To know the reasons why images are altered		To explain how images in the media affect how we feel about ourselves
	To show awareness of the harm that can be caused by terrorism and extremism (Including online)		To learn the difference between terrorist actions and the right to peaceful protest (including online)		
	To use search tools to find appropriate information and decide whether I can trust it	To identify key words to use when searching safely online and think about the reliability of information I find		To understand terms such as fake news, bots, trolling, catfish, social media algorithm, phishing, spam	
	To use age appropriate apps, games and websites from a list I have agreed with others	To choose apps, games and websites that are appropriate for my age and explain my reasons to friends		To know why social media, some computer games and online gaming, for example, are age restricted.	
	To identify adverts online, including those within Google searches	To ignore or close adverts and pop-ups that appear on my device and explain my reasons		To know how to be a discerning consumer of information online including understanding that information, including that from search engines, is ranked, selected and targeted	
	To identify some possible risks to devices	To explain why I need to protect my computer or device from harm			To protect my computer or device from harm on the internet
	To ask a trusted adult before downloading files and games from the Internet	To explain why I need to ask a trusted adult before downloading files and games from the internet		To know which online resources I can download and use	To support my friends in evaluating their use of games and devices and make good choices for myself
			To identify positive and negative influences of games and devices and make sure this influences the way I use them		
To know where and how to report concerns and get support with issues online		To know the rules and principles for keeping safe online, how to recognise risks, harmful content and contact, and how to report them			

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		EYFS/Year 1	Year 2	Year 3	Year 4
E-Safety - Conduct		To agree and use sensible rules to keep me safe when I use technology	To agree and use sensible rules to keep me safe when I use technology	To contribute to shared rules and use them to make good choices when I use technology	To contribute to shared rules and use them to make good choices when I use technology
		To tell a trusted adult what I want to use a device for	To talk to a trusted adult about how I will keep myself safe before I use a device	To use the safety features of websites as well as reporting concerns to a trusted adult	To use appropriate strategies to deal with comments online
		To tell a trusted adult when something worrying or unexpected happens when I am using a device			To use a range of strategies to protect myself and my friends from harm online, including reporting concerns to a trusted adult
		To know what my personal information is and keep it private	To explain why I need to keep my passwords and personal information private	To use a secure password and explain why they are important	
				To protect my personal information when I do different things online	
		To know that something I put online can be seen by others	To know how something can spread once it is put online	To know that anything I share online will stay there to be seen and used by others	
		To know hurtful behaviour (offline and online) including teasing, name-calling, bullying and deliberately excluding others is not acceptable; how to report bullying; the importance of telling a trusted adult	To comment positively and respectfully To know what bullying is and that people can be hurt by words and actions; that people can say hurtful things online	To describe the ways that people get bullied when they use different technologies and consider what I post	To make safe choices when using technology to communicate responsibly with others
		To use devices for the time I am allowed and tell you what else I like doing	To know to take a break and do something else when I have been using a device for too long	To make good choices about when and why I use devices	
		To show a trusted adult when something worrying or unexpected happens when I am online		To know where and how to report concerns and get support with issues online	

		Year 3	Year 4	Year 5	Year 6	
E-Safety - Conduct		To contribute to shared rules and use them to make good choices when I use technology	To contribute to shared rules and use them to make good choices when I use technology	To contribute to shared rules and use them to support myself and others when we use technology		
		To use the safety features of websites as well as reporting concerns to a trusted adult	To use appropriate strategies to deal with comments online	To explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to a trusted adult	To support my friends to protect themselves and make good choices online, including reporting concerns to a trusted adult	
			To use a range of strategies to protect myself and my friends from harm online, including reporting concerns to a trusted adult			
		To describe the ways that people get bullied when they use different technologies and consider what I post	To make safe choices when using technology to communicate responsibly with others	To know the impact of positive and negative content online on their own and others' mental and physical wellbeing		
				To consider the effect of their online actions on others and know how to recognise and display respectful behaviour online		
		To use a secure password and explain why they are important		To use a secure password and safe screen name when I am using an online tool		
		To protect my personal information when I do different things online		To explain the risks of sharing too much about myself online.	To consider terms and conditions and adjust privacy settings to maintain control of my personal information	
		To know that anything I share online will stay there to be seen and used by others		To check the information about me online and know that some of it can be uploaded by others	To know how information and data is shared and used online	
		To make good choices about when and why I use devices		To know the benefits of rationing time spent online, the risks of excessive time spent on electronic devices		
		To understand the need to seek and give permission (consent) in different situations		To know importance of permission seeking and giving (consent) in relationships with friends, peers and adults		
		To explain how I feel when someone responds to something I have shared online		To compare my online and face-to-face relationships.	To know the same principles, apply to online relationships as to face-to-face relationships, including the importance of respect for others online including when we are anonymous	
		To identify similarities and differences between people I know and people I see in the media/online	To recognise that online friendships affect my feelings		To explain how online friendships affect our feelings	To critically consider their online friendships and sources of information including awareness of the risks associated with people they have never met
		To recognise if a friendship (online or offline) is making them feel unsafe or uncomfortable; how to manage this and ask for support if necessary		To know people sometimes behave differently online, including by pretending to be someone they are not		To know how to recognise who to trust and who not to trust, how to judge when a friendship is making them feel unhappy or uncomfortable, managing conflict
	To know how to manage difficult friendship situations and seek help or advice from others, if needed		To have strategies for recognising and managing peer influence and a desire for peer approval in friendships			

		EYFS/Year 1	Year 2	Year 3	Year 4	
E-Safety - Contact		To know that not everyone is who they say they are online	To know that sometimes people may behave differently online, including by pretending to be someone they are not	To know what is appropriate in friendships and wider relationships (including online)		
		To use different technologies, with a trusted adult, to communicate responsibly with others		To know the impact of bullying, including offline and online, and the consequences of hurtful behaviour		
		To talk about why it is important to be kind and polite online and in real life		To always communicate kindly and respectfully and can describe the impact where this does not happen		
		To know I need to ask permission before carrying out certain actions (including online)	To know there are situations when they should ask for permission and also when their permission should be sought		To understand the need to seek and give permission (consent) in different situations	
		To know that some people on the internet are unkind to others		To explain how I feel when someone responds to something I have shared online		
		To recognise there is a difference between friends I know in real life and people I play with online			To identify similarities and differences in my relationships with people I know and people I see in the media/online	To recognise that online friendships affect my feelings
		To know that friends should not ask them to do something that makes them uncomfortable	To know basic techniques for resisting pressure to do something they don't want to do and which may make them unsafe		To recognise if a friendship (online or offline) is making them feel unsafe or uncomfortable; how to manage this and ask for support if necessary	
					To know how to manage difficult friendship situations (including online) and seek help or advice from others, if needed	

With reference to the ELIM E Safety statements. Although taught as a unit, this should be revisited at least every term

What will computing look like in the classroom?

- Unplugged lessons – children will use key skills and knowledge to apply computer terms and vocabulary to everyday lives and activities
- Touch typing activities
- Using age appropriate apps and websites
- Strong Online safety focus
- Using technology tools to present or complete assignments
- Strong sense of compassion and respect for other people's work and opinions
- Appreciate diversity
- Lesson starter activity focusing on touch typing skills and online safety.
- Specify key vocabulary to be used and its meaning.
- Research, investigation and interpretation of findings.
- Children will communicate their computer and online safety knowledge and understanding appropriately.
- Children evaluate their learning and compare with peers.

Assessment

Teachers regularly assess capability through observations and looking at completed work. Key objectives to be assessed are taken from the national curriculum to assess key ICT and computing skills each term. Success criteria have been developed for each strand for each year and this remains an integral part of teaching and learning and central to good practice. It should be process orientated - reviewing the way that techniques and skills are applied purposefully by pupils to demonstrate their understanding of the concepts of ICT and computing. As assessment is part of the learning process it is essential that pupils are closely involved. Assessment can be broken down into;

Formative assessments are carried out during and following short, focused tasks and activities. They provide pupils and teaching staff the opportunity to reflect on their learning in the context of the agreed success criteria. This feeds into planning for the next lesson or activity. Summative assessment should review pupils' capability and provide a best fit level. Use of independent open ended tasks, provide opportunities for pupils to demonstrate capability in relation to the term's work. There should be an opportunity for pupil review and identification of next steps.

Summative assessment should be recorded for all pupils – showing whether the pupils have met, exceeded or not achieved the learning objectives.

SEN

At St Bartholomew's, we believe that all children have the right to access ICT and computing. In order to ensure that children with special educational needs achieve to the best of their ability, it may be necessary to adapt the delivery of the ICT and computing curriculum for some pupils. We teach ICT and computing to all children, whatever their ability. ICT and computing forms part of the national curriculum to provide a broad and balanced education for all children. Through the teaching of ICT and computing we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Where appropriate ICT and computing can be used to support SEN children on a one to one basis where children receive additional support. Additionally, as part of our dyslexia friendly approach to teaching and learning we will use adapted resources wherever possible such as visual timetables, different coloured backgrounds and screen printouts.

Monitoring and review

The subject leader (Tammy Court) is responsible for monitoring the standard of the children's work and the quality of teaching in line with requirements from subject leader meetings, work analysis and lesson observations. The subject leader is also responsible for supporting colleagues in the teaching of computing, for being informed about current developments in the subject, and for providing a strategic lead and direction for the subject in the school.