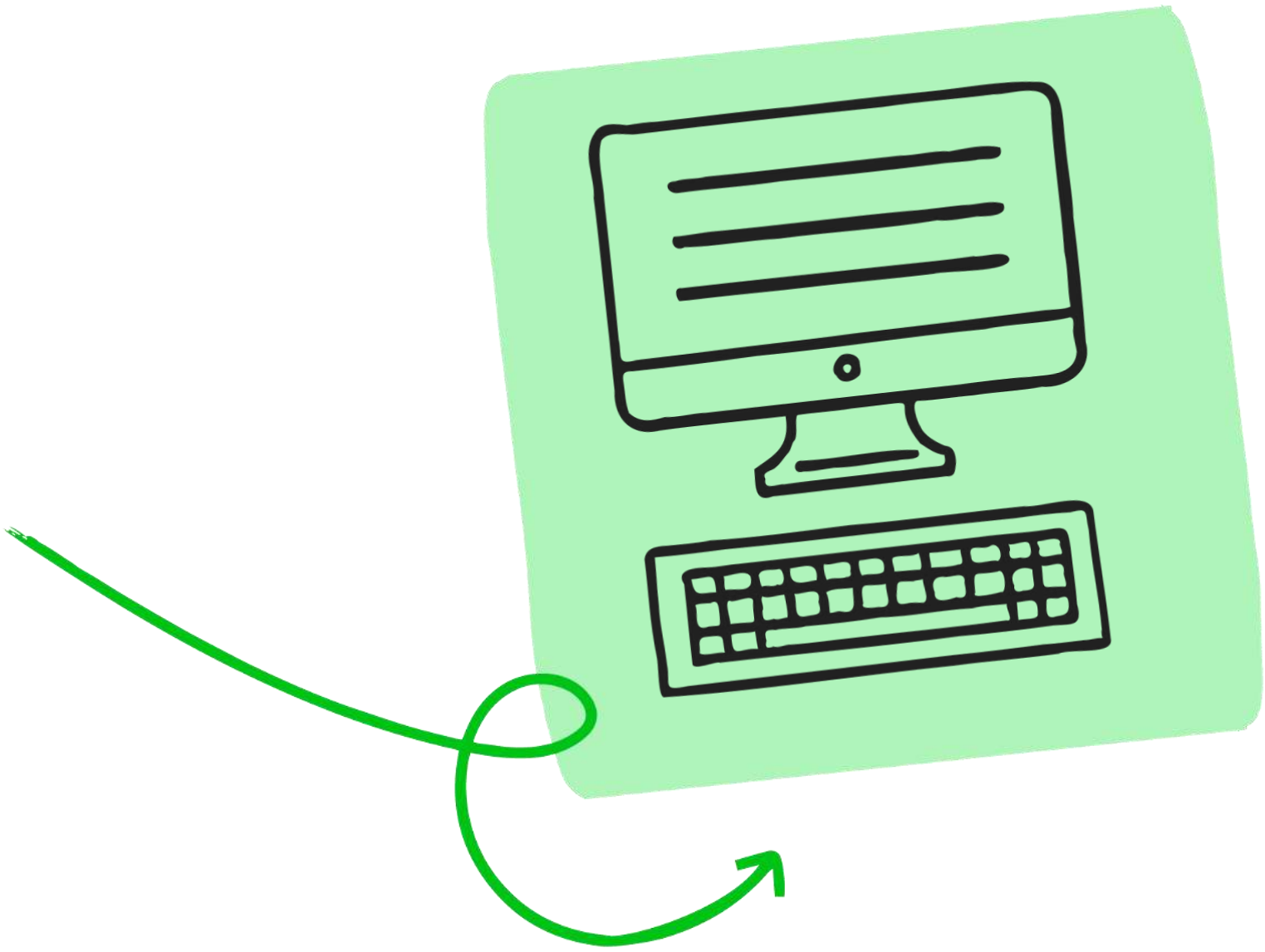
Oak National Academy

KS1 & KS2 Computing curriculum plan and explainer



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Threads in computing

Our curriculum

All of our curricula share the same set of principles that guide our curriculum design to ensure our curricula are high-quality. They are:

Knowledge and vocabulary rich

Lessons and units are knowledge and vocabulary rich. Pupils will build on what they already know to develop deep knowledge and apply this knowledge in the form of skills.

Sequenced and coherent

Careful sequencing and attention to building coherence via vertical threads so that pupils build on prior knowledge and make meaningful connections.

Flexible

Our flexible curriculum enables schools to tailor our content to their curriculum and context.

Accessible

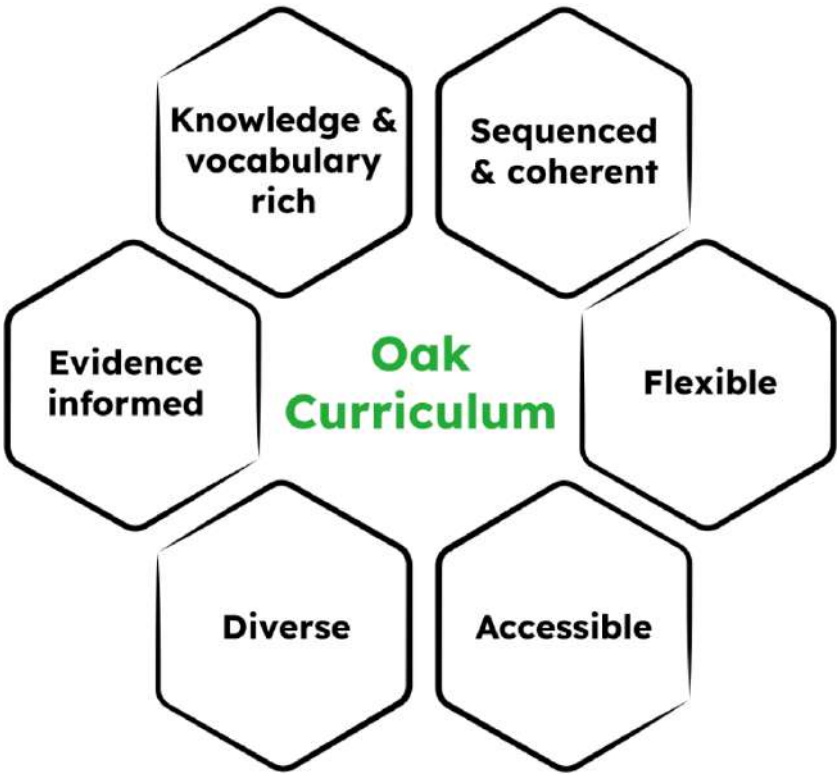
Creating an accessible curriculum that addresses the needs of all pupils and meets accessibility guidelines and requirements.

Diverse

We prioritise creating a diverse curriculum by committing to diversity in teaching and teachers, and the language, texts and media we use, so all pupils feel positively represented.

Evidence-informed

We take an evidence-informed approach applying the science of learning and subject-specific research.



Threads

What are threads?

We use threads to signpost groups of units that link to one another, that together build a common body of knowledge over time. We use the term thread, rather than vertical concepts, themes or big ideas, because it helps us bring to mind the visual concept of a thread weaving through the curriculum.

How to use threads

1. Familiarise yourself with all of the threads relating to the subject
2. Identify the unit you will be delivering
3. Review the threads associated with the unit
4. Audit where pupils have and will learn about these threads in your existing curriculum sequence.
5. Ensure you understand how the thread relating to your new unit has been framed in prior and future units
6. Review how the thread works within the unit you will be delivering
7. Teach and iterate your framing of the thread within the unit and across your curriculum sequence

Threads in subject

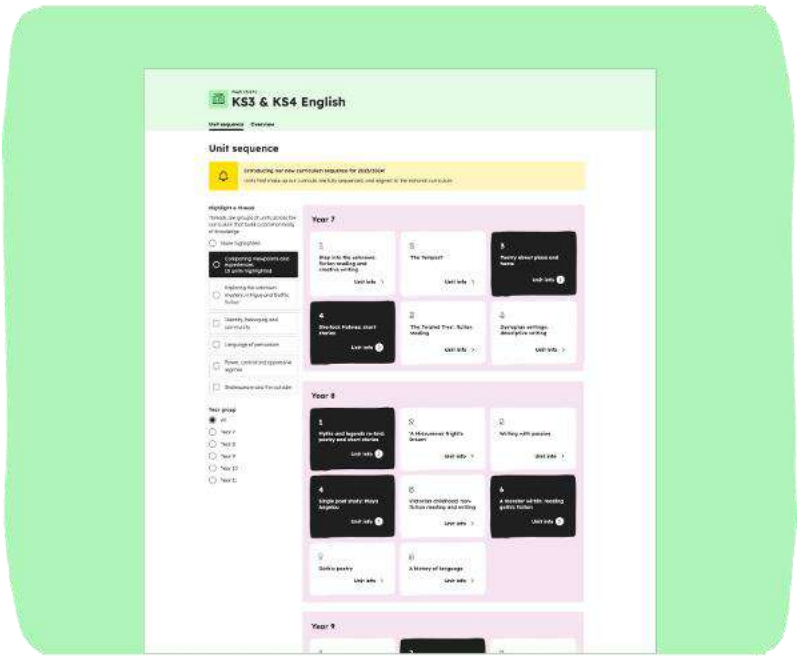
- Algorithms and data structures
- Computing systems
- Creating media
- Data and information
- Design and development
- Effective use of tools
- Networks
- Programming
- Safety and security

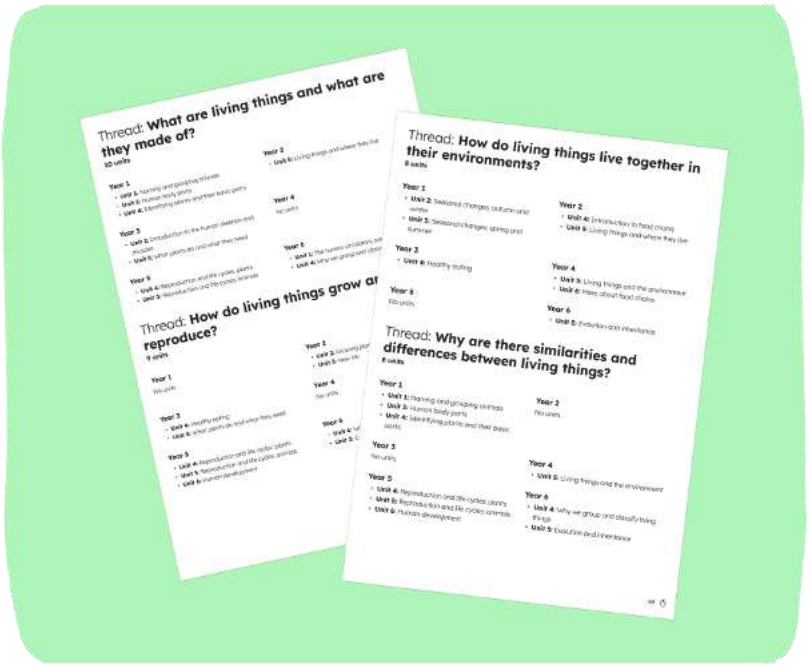
Tools for using threads

Online curriculum

Our interactive tool enables you to visualise how threads are sequenced across our curriculum plans.

Go to online curriculum





Threads in this document

The appendix displays the threads and their related units.

Go to threads appendix

Computing curriculum explainer

Aims and purpose

What are the aims and purpose of our curriculum?

This curriculum enables pupils to become confident and efficient users of technology. The curriculum establishes the important knowledge in computing to provide a foundation for the technical nature of the subject. We aim for pupils to understand how the technology they use every day has an impact on the world around them, giving pupils the knowledge to express themselves and develop their ideas in real-world contexts.

Oak curriculum principles

What overarching curriculum principles inform the design of our curriculum?

Knowledge and vocabulary rich

This principle recognises the important role that knowledge, and vocabulary as a particularly important type of knowledge, play in learning. In computing, knowledge and vocabulary are building blocks for developing confident users of technology. We identify and map vocabulary across the curriculum, both in terms of the introduction of new vocabulary and the necessary repetition of vocabulary that has gone before. New vocabulary, called keywords, are signalled in bold in our lesson materials to indicate their importance.

Being able to express themselves accurately and technically means pupils are better able to apply the knowledge they accumulate. Computing-specific vocabulary is introduced from the first lesson and definitions are developed throughout the curriculum in an age-appropriate manner. Explanations of terms are redefined as new knowledge is learnt, adding nuance and detail.

Sequenced and coherent

A careful and purposeful sequencing of our curriculum content underpins the design of our curriculum, ensuring that pupils are able to build on and make links with existing knowledge. The computing curriculum follows a spiral model where knowledge is revisited and expanded upon regularly. This approach ensures that as their technical understanding of computing develops, pupils can tackle more complex ideas with confidence, drawing upon previous learning.

Attention is paid to vertical coherence via threads, which map the developments of concepts over time, for example, the ‘Artificial intelligence’ thread sees the concept of AI first appear in key stage 1 where pupils explore how it is used alongside more traditional forms of processing. Pupils will learn about how to create digital artefacts first-hand and then compare this to computer-generated artefacts. As pupils develop their computing knowledge, they then explore the use of AI from a technical perspective to provide insight into the benefits and limitations of automated generation.

Evidence-informed

Our evidence-informed approach enables the rigorous application of research outcomes, science of learning and impactful best practice both in education in general and at a subject specific level. For example, the design of our resources reflects findings from Sweller's cognitive load theory and Mayer's principles of multimedia learning whilst our lesson design draws on Rosenshine's principles of instruction. We also draw on findings from research organisations such as the Education Endowment Foundation (EEF). At the subject level, the design of the curriculum draws strongly on research carried out by the National Centre for Computing Education (NCCE) and Raspberry Pi Computing Education Research Centre on current subject developments and best practice.

Flexible

Our flexible approach enables schools to use our resources in a way that fits their context and meets the varying needs of teachers and their pupils. Our curriculum can be used in its entirety or units can be selected to complement existing curricula. We prioritise commonly used and freely available software such as Scratch. Our resources are adaptable so that, for example, teachers can choose to use different software, can edit or add checks for understanding, or adapt practice tasks to better reflect the prior knowledge of their pupils. At key stage 4 teachers and pupils can select a pathway aligned to the most frequently used exam board specifications for GCSE computer science: AQA or OCR.

Diverse

Our commitment to breadth and diversity in content, language, texts and media can be seen throughout the curriculum, for example, in the group of diverse school-age characters that feature in our resources. Our curriculum draws on a range of contexts, to both demonstrate the breadth of application of computing and to help pupils see relevance in the curriculum. For instance, pupils learn how computing can be used to develop early warning systems that analyse big data and real-time analytics to predict natural disasters like earthquakes, floods, and tsunamis. In a different context, they learn how fashion designers use algorithms to generate new aesthetics or create collections based on consumer data and design principles. Pupils are taught how technology can be applied now and in the future. Pupils learn that the knowledge and skills of programming is relevant beyond the development of software, and can be transferred to other fields such as social science or art. Our curriculum acknowledges the importance of open-ended problem-solving through carefully designed project tasks that enable pupils to create their own solutions, reflecting both how they work, as well as what interests and motivates them.

Accessible

Our curriculum is intentionally designed to facilitate high-quality teaching as a powerful lever to support pupils with SEND. Aligned with EEF guidance, our resources have a focus on clear explanations, modelling and frequent checks for understanding, with guided and independent practice. Lessons are chunked into learning cycles and redundant images and information are minimised to manage cognitive load. We have removed reference to year groups in our resources so that they can be used when pupils are ready, regardless of their age. Our resources are purposefully created to be accessible, for example by using accessible fonts, colours with good contrast, captions in our videos, and when demonstrating software in our resources, using high-contrast colour options and enlarged fonts.

Oak subject principles

What subject specific principles inform the design of our curriculum?

Focuses on the knowledge and skills specific to computing, including:

How computer systems and networks function

We begin by introducing how IT is used in school and the wider world in key stage 1. We explore this further in key stage 2 when we establish that computers carry out tasks for humans. This is extended as pupils learn that computers are more useful when they communicate with other devices as part of a network. Exploring network communication enables pupils to appreciate and understand the usefulness of computers and how wide-ranging this can be in key stage 3 and 4.

The use of data to represent complex information and inform decision-making

Pupils understand how to use computers to process and present data as useful information for an audience in key stage 1, when numerical data is presented in pictograms. This is developed in key stage 2 when pupils learn how to structure data so that it can be efficiently processed for feedback to users. Pupils apply these fundamentals to more complex scenarios in key stages 3 and 4, analysing what needs to be presented and determining the data to collect and how to collect it.

The design and application of algorithms and data-driven models to create programs and AI solutions

In key stage 1 pupils learn that a computer can not intuitively complete tasks; humans program computers to carry out actions. There are repeated opportunities in key stage 1 and 2 to develop simple programs for a variety of scenarios, such as games and music, in order to reinforce understanding of key programming knowledge. In key stage 3 and 4 pupils explore complex scenarios extending their understanding. Pupils also learn the role that AI tools can play as a part of this process.

Enables pupils to use technology to present information and create solutions to real problems

Throughout the curriculum, computing is learnt in the context of creating solutions for the real world. In key stage 1 pupils learn about how to navigate a maze and digital artefacts that other people can view. Pupils continue to learn computing in context. For example in key stage 4 pupils make robot buggies that can respond to their environment and digital media products that are designed with an end client in mind.

Examines the impact of current and emerging technologies on individuals and wider society including the legal, ethical and moral implications

Pupils explore the use of IT in the world around us in key stage 1. This is developed in key stage 2 as pupils learn about the influence of networks on expanding our view of the world. This is revisited throughout key stage 3 and 4 by relating knowledge to its ethical, legal, cultural, and environmental impacts on wider society.

National curriculum

How does our curriculum reflect the aims & purpose of the national curriculum?

There are four aims of the national curriculum. The first aim is that all pupils should understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms, and data representation. This begins in key stage KS1, where pupils are introduced to the basics of algorithms by following step-by-step instructions to complete a task, such as directing a toy through a path. By key stage 2, pupils begin using block-based programming tools to create simple programs, reinforcing their understanding of abstraction and logic. As they progress to key stage 3 and key stage 4, they tackle more complex concepts like sorting algorithms and data structures in a text-based language. By the end of key stage 4, pupils should be able to independently select appropriate computer science concepts to solve real-world problems, such as creating efficient programs for a specified task.

The second aim is for pupils to analyse problems in computational terms and gain repeated practical experience in writing programs to solve them. In key stage 2 pupils are tasked with designing simple games in Scratch, which requires them to break down the game mechanics into manageable parts and use their programming knowledge to implement them. As they move into key stage 3 and key stage 4 pupils encounter problems like designing algorithms that use lists. This progression across year groups ensures that pupils have numerous opportunities to work with both block-based and text-based languages, from Scratch to Python, allowing them to practise and refine their problem-solving and coding skills.

The third aim is that pupils should evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems. In key stage 1 and key stage 2 pupils might explore familiar technologies like tablets or simple word processing software, understanding how they are used in everyday life and discussing their impact. By key stage 3, pupils engage with more advanced technology, such as exploring how AI tools work. This helps pupils learn how to apply technology to meet their needs and solve specific challenges. In key stage 4 pupils may analyse emerging technologies like virtual reality or machine learning, discussing their potential applications and evaluating how these technologies can be used responsibly and effectively.

The final aim is for pupils to become responsible, competent, confident, and creative users of information and communication technology. This is interwoven into all areas of the curriculum. For instance, when pupils in key stage 2 explore the nature of online resources, they are also taught about digital responsibility, such as verifying the reliability of sources and protecting personal data. In key stage 3, pupils discuss topics like cyberbullying and digital footprints, reflecting on the consequences of technology use. Throughout their schooling, pupils are regularly reminded of their responsibility to use technology safely and ethically, aligning these lessons with those from the RSHE curriculum to build a comprehensive understanding of digital citizenship.

Curriculum delivery

What teaching time does our curriculum require?

Our curricula for key stages 1-3 are designed for 36 weeks of curriculum time across the school year, which leaves time for other activities both within and beyond the curriculum, such as

assessments or school trips. At key stage 4, year 10 also has 36 weeks of curriculum time, but year 11 has only 24 weeks (approximately 2 terms) to recognise that schools will not be teaching new content in the run-up to the GCSE exams.

Our primary computing curriculum is designed for one lesson a fortnight at key stage 1 and one lesson every week at key stage 2. Our key stage 1 lessons are designed to last approximately 40 minutes, whilst our key stage 2 lessons are closer to an hour.

At key stage 3, the secondary computing curriculum is designed for one lesson per week. There are two pathways for the curriculum at key stage 4. For those taking GCSE computer science, the curriculum is designed for three lessons per week. If pupils are not taking this course, there is a core computing sequence designed to be taught once per week during years 10 and 11.

Curriculum coherence

What are 'threads'?

We use threads to signpost groups of units that link to one another, which together build a common body of knowledge over time. We use the term thread, rather than vertical concepts, themes or big ideas because it helps to bring to mind the visual concept of a thread weaving through the curriculum.

Our computing threads that weave through both our primary and secondary curricula are:

- Computing systems
- Networks
- Creating media
- Algorithms and data structures
- Programming
- Data and information
- Artificial intelligence
- Effective use of tools
- Impact of technology
- Design and development
- Safety and security

These threads have been selected to broadly categorise the subject content in the national curriculum. The threads are fundamental areas of learning for computing, applicable to a range of uses within computer science, information technology and day-to-day digital use.

The threads are first encountered in primary and are revisited and developed through the rest of the curriculum. For example, within the ‘Programming’ thread, pupils are introduced to programming control flow constructs in key stage 1 as part of simple animations and quizzes. These concepts are revisited and extended to include nesting of statements and extending the conditions that control them. By the end of key stage 4, pupils will select and adapt control flow structures that achieve a variety of goals. Consistent threads across our primary and secondary curricula can enable more effective transition, helping pupils to bridge their knowledge and understanding from primary to secondary.

Recommendations from subject specific reports

How does our curriculum address and enact recommendations from subject specific reports (e.g. EEF guidance reports & Ofsted Research Review)?

Our curriculum encompasses three main content areas as described in the recent Ofsted research review for computer science, information technology and digital literacy. The review recognised that these areas “do not sit separately from each other”. In our curriculum, the study of computing is interrelated and focuses on the application of technology. Our curriculum also considers recommendations from the SCARI computing project to address factors that have affected the low uptake of computing education, specifically the need to widen the key stage 3 computing curriculum. Our curriculum places greater emphasis on different areas of computing study including AI, data science and regular project work.

Subject-specific needs

How does our curriculum deal with elements that arise from the specific needs of the subject?

How is e-safety taught in our computing curriculum and where does it link to our RHE and RSHE curricula?

Pupils are taught to use technology responsibly and safely throughout their education, from early primary to the end of secondary. To ensure pupils learn about this regularly it is integrated across the curriculum rather than taught in explicit e-safety lessons. Our computing curriculum revisits and reinforces key learning from our RHE and RSHE lessons within the context of computing topics. For instance, in RSHE, students learn about ‘fake news’ and how it can shape our worldview. In year 9 computing, this concept is revisited during lessons on cybersecurity, where students explore automated threats and bots. They also learn how such technologies have been used to influence elections, linking social impacts with technical knowledge.

What hardware is required to teach our curriculum?

All pupils require access to a PC, tablet, or laptop that is connected to the internet. Many lessons rely on web-based tools, so these devices need to be capable of running software through a browser. At times, additional hardware is required, for example, a programmable floor robot. In these cases, schools can use alternatives based on their existing equipment. Alongside each unit is a list of the required tools and equipment.

What software is featured in the curriculum?

Our curriculum is designed to make use of a common set of free, browser-based software listed below and is easily adaptable to accommodate suitable alternatives:

- Word processing: Google Docs
- Presentation: Google Slides
- Spreadsheet: Google Sheets
- Block-based programming: Scratch, MakeCode
- Text-based programming: Raspberry Pi Code Editor

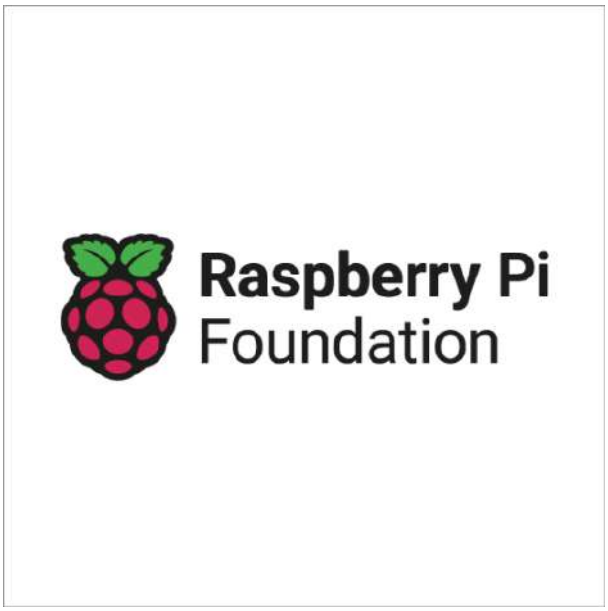
At times there is specific additional software required which is signposted alongside each unit.

How does the Oak computing curriculum build on the work of the NCCE Teach Computing Curriculum?

Our curriculum is built on the Teach Computing Curriculum (TCC), developed by the National Centre for Computing Education (NCCE). We take the well-established and widely used NCCE resources a step further, developing the TCC to reflect changes in the subject, such as the growing role of AI in education and students' daily lives. The new Oak computing curriculum, created in partnership with the Raspberry Pi Foundation, who also created the original TCC materials, continues to build on this project.

Our curriculum partner

The Raspberry Pi Foundation is a UK-based charity with the mission to enable young people to realise their full potential through the power of computing and digital technologies. The Foundation's expertise is built on years of teaching in classrooms, designing successful curricula, providing in-person and online teacher CPD, and undertaking computing education research.



Year 1 units

View interactive sequence online

1 **Digital painting**	**2** **Digital writing**	**3** **Creating animations in programs**

1. Digital painting

Year 1

Go to unit resources

Threads

- Creating media
- Effective use of tools

Unit description

In this unit, pupils develop their understanding of how to manipulate digital devices by using painting tools. They practise by creating digital paintings, gaining inspiration from the work of artists whilst reflecting on their preferences when painting with and without the use of digital devices.

Why this, why now?

This unit introduces pupils to using digital tools for the first time. It builds their confidence and foundational skills in operating digital devices. Before starting, pupils should already know how to turn on and log in to their device. Throughout the unit, they will develop key digital skills they'll use across the curriculum. In later units these same skills will support pupils as they explore different ways to create and edit digital images and apply these same skills across a range of applications.

Lessons in unit

1. Painting using computers
2. Using lines and shapes to create digital pictures
3. Creating digital pictures in the style of an artist
4. Choosing the right digital painting tool
5. Using the paintbrush tool to create digital pictures
6. Comparing computer art and painting

Prior knowledge requirements

- Pupils should be familiar with how to switch their device on
- Pupils should be familiar with how to log in to their device

2. Digital writing

Year 1

Go to unit resources

Threads

- Creating media
- Effective use of tools

Unit description

This unit covers various aspects of using a computer to create and manipulate text. Pupils will become familiar with using a keyboard and mouse to enter and remove text. They will consider how to change the look of their text, and will be able to justify their reasoning for making these changes.

Why this, why now?

This unit develops pupils' skills in creating and editing digital content with a word processor. They will improve typing accuracy, learn to navigate keys efficiently and refine design choices for clarity and impact. Alongside the previous unit, this builds essential computer skills that help pupils access, record, and present their learning effectively by using technology as a tool to support what they do.

Lessons in unit

1. Exploring the keyboard
2. Adding and removing text
3. Make changes to text
4. Exploring the toolbar
5. Choosing formatting tools
6. Comparing digital writing to using a pencil

Prior knowledge requirements

- Pupils should be able to access a digital device and log on where necessary
- Pupils should be able to open an application as directed
- Pupils should be able to operate a pointing device (or equivalent) to control features of software

3. Creating animations in programs

Year 1

Go to unit resources

Threads

- Design and development
- Programming

Unit description

In this unit pupils are introduced to on-screen programming through ScratchJr. Pupils will explore the way a project looks onscreen by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs that move objects.

Why this, why now?

This unit introduces pupils to how computer programs are built and carry out actions. Using block-based programming they explore controlling sprites, selecting backgrounds and creating or adapting projects, alongside designing simple algorithms. This is the first step in developing computational thinking, giving pupils the foundations in logic, sequencing, and problem solving that will be revisited and expanded upon.

Lessons in unit

1. Programming using command blocks
2. Joining command blocks
3. Changing values in a program
4. Controlling sprites
5. Designing an animated program
6. Testing a program

Prior knowledge requirements

- Pupils will know how to turn on and log in to a digital device.
- Pupils will know how to perform basic actions to control a digital device, (point, click, move, type).

Year 2 units

View interactive sequence online

1 **Information technology in the world beyond school**	**2** **Using IT to organise and present data**	**3** **Building sequences in programs**

1. Information technology in the world beyond school

Year 2

Go to unit resources

Threads

- Computing systems
- Networks
- Safety and security

Unit description

In this unit pupils develop their understanding of what information technology is and will begin to identify examples. Pupils will discuss where they have seen IT in school and beyond. They will investigate how IT improves our world whilst also recognising the importance of using IT responsibly.

Why this, why now?

This unit progresses pupils' knowledge and understanding of technology and how they interact with it both in school and the wider world. They will build their knowledge of what Information Technology is and how it is used day-to-day. They will also consider the appropriate use of IT, setting the expectation that it should be used carefully and responsibly throughout their lives.

Lessons in unit

1. Introduction to information technology
2. Information technology in school
3. Information technology in the world
4. Benefits of information technology
5. Using information technology safely
6. Making choices when using information technology

Prior knowledge requirements

- Pupils will know how to turn on and log in to a digital device.
- Pupils will be able to operate a digital device and use it to enter and edit textual information.
- Pupils will have talked with teachers and responsible adults about the appropriate use of IT.

2. Using IT to organise and present data

Year 2

Go to unit resources

Threads

- Data and information
- Effective use of tools

Unit description

In this unit pupils will explore what the term data means and how data can be collected. They will explore how attributes can be used to organise data and how data can be presented in the form of pictograms and block diagrams. Pupils will use the data presented to answer questions.

Why this, why now?

Having previously explored how to collect, summarise and present data, pupils now develop their skills in organising and classifying information. They refine their ability to identify attributes, ask precise yes/no questions and sort objects, strengthening logical thinking and decision-making. This progression builds the foundation for analysing, comparing and structuring data preparing pupils for more complex tasks involving patterns, problem-solving, and drawing conclusions.

Lessons in unit

1. Counting and comparing data
2. Entering data
3. Creating pictograms
4. Attributes in data
5. Comparing data
6. Presenting information clearly

Prior knowledge requirements

- Pupils know how to access websites on digital device as directed.
- Pupils understand how to count object and group them.
- Pupils understand how charts can help to visualise numerical data.
- Pupils will be able to operate a digital device and use it to enter and edit textual information.

3. Building sequences in programs

Year 2

Go to unit resources

Threads

- Design and development
- Programming

Unit description

In this unit, pupils will begin to understand that sequences of commands have an outcome and will start to make predictions about what these outcomes may be. Pupils will use and modify designs to create their own quiz questions using sequences of code blocks.

Why this, why now?

This unit builds on pupils' previous experiences with block-based programming to deepen their understanding of how sequences of commands produce outcomes. They learn to predict and explain code behaviour, recognising how small changes affect results. By designing and modifying quiz questions, pupils take an early step in structured problem-solving, laying the groundwork for more complex programming concepts and applications in later years.

Lessons in unit

1. Programming sequences
2. Outcomes of sequences
3. Building blocks to create a sequence
4. Programming multiple sprites and backgrounds
5. Designing and creating a quiz program
6. Evaluating and improving a program

Prior knowledge requirements

- Pupils can create sequences in a block-based programming environment.
- Pupils can debug simple programs that don't work.
- Pupils recognise elements of graphical computer programs.
- Pupils can follow straight-forward algorithms.
- Pupils can operate a digital device and use it to enter and edit textual information.

Year 3 units

View interactive sequence online

1 **Computer networks**	**2** **Stop-frame animation**	**3** **Programming sequence using sound**
4 **Organising data using databases**	**5** **Desktop publishing**	**6** **Events and actions in programs**

1. Computer networks

Year 3

Go to unit resources

Threads

- Computing systems
- Networks

Unit description

In this unit pupils will explore digital devices, with an initial focus on inputs, processes, and outputs. Pupils will be introduced to computer networks, including devices that make up a network infrastructure and the benefits of connecting devices in a network.

Why this, why now?

Having explored what Information Technology is and its many uses, this unit looks at how networks extend the usefulness of digital devices. Pupils examine how devices operate and how people use them to meet their needs. They are introduced to the basics of computer networks and key devices such as switches and wireless access points to build an understanding of what IT networks are and how they connect systems in local areas and across the world.

Lessons in unit

1. Digital devices
2. Designing a digital device
3. Digital devices for different activities
4. Connecting digital devices
5. Transferring information between devices
6. Physical components of a computer network

Prior knowledge requirements

- Pupils know the basic features of digital devices and how to interact with them.
- Pupils have experience of using networked digital devices.
- Pupils understand the principle of Information Technology and its applications.

2. Stop-frame animation

Year 3

Go to unit resources

Threads

- Effective use of tools

Unit description

In this unit pupils will explore a range of techniques to create a stop-frame animation. They will have the opportunity to apply their skills by creating a story-based animation. Pupils will extend their animations by adding other types of media to their animation, such as music and text.

Why this, why now?

Having previously created static digital images pupils now progress to producing dynamic, narrative-based media. This unit introduces stop-frame animation as a way to combine creativity with technical skills. Pupils will manage more complex sequences of tasks which improve their planning, precision, and attention to detail. They begin to see how different digital elements work together to tell a story. This enables them to appreciate how to use and combine a variety of software as part of increasing complex multimedia projects.

Lessons in unit

1. Introduction to animation
2. Creating animations using frames
3. Using storyboards to plan an animation
4. Consistency in frames
5. Reviewing an animation
6. Adding media to an animation

Prior knowledge requirements

- Pupils can use digital devices to find and store digital artefacts.
- Pupils have created digital images using software tools.
- Pupils understand that digital devices can be combined to achieve goals that a single device might not be able to do.

3. Programming sequence using sound

Year 3

Go to unit resources

Threads

- Design and development
- Programming

Unit description

This unit explores the concept of sequencing in programming. Pupils will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. Pupils will make a representation of a piano where they will explore sequence through sound.

Why this, why now?

Having previously developed sequences in block-based programming, pupils now extend their understanding of algorithms, sequence, and code blocks by working with Scratch. This unit introduces the Scratch interface and familiarises pupils with the attributes of the sprite and stage. This stage of learning prepares them for later programming units where they will improve program readability by using iteration and subroutines to replace long sequences of instructions.

Lessons in unit

1. Programming in a block-based environment
2. Programming sprites
3. Sequences
4. Ordering commands
5. Combining code blocks in a sequence
6. Creating a project using a block-based environment

Prior knowledge requirements

- Pupils should have some prior experience of programming.
- Pupils should be aware that instructions can be represented in code.
- Pupils should be aware that the sequence of commands can affect the outcome of the program.

4. Organising data using databases

Year 3

Go to unit resources

Threads

- Data and information

Unit description

This unit develops pupils' knowledge of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Pupils will create an identification tool using a branching database.

Why this, why now?

In this unit pupils learn to organise and classify information, developing logical thinking and decision-making skills. They practise asking yes/no questions, identifying attributes, and sorting objects, skills that support future learning by strengthening their ability to analyse, compare, and structure information. This foundation helps them tackle more complex tasks involving data, patterns, and problem-solving as they progress through their learning.

Lessons in unit

1. Yes or no questions
2. Making groups
3. Creating a branching database
4. Structuring a branching database
5. Planning a branching database
6. Making a dinosaur identifier

Prior knowledge requirements

- Pupils understand what data is in a computer system.
- Pupils recognise that stored data should be organised to make it easier to retrieve later.
- Pupils should be able to identify ways data is captured about the world around us.

5. Desktop publishing

Year 3

Go to unit resources

Threads

- Creating media
- Effective use of tools

Unit description

In this unit pupils will explore how text and images can be used to communicate messages. They will use desktop publishing software to make careful choices of font size, colour, and style to improve documents. They explore a range of page layouts using templates and placeholders as design tools.

Why this, why now?

Pupils are ready to progress from working with text or images separately to combining them to communicate more effectively. This unit introduces desktop publishing as a purposeful way to create documents with impact. Pupils begin to see how layout, design, and style choices affect how a message is received. Learning this now helps them plan and present information clearly in posters, newsletters and other real-world formats ensuring they recognise that when they create information it will need to be presented in a way that is suitable for its intended audience.

Lessons in unit

1. Using text and images to communicate
2. Editing text
3. Placeholders in templates
4. Adding content
5. Applying layout in desktop publishing
6. Editing and improving a document

Prior knowledge requirements

- Pupils can store and use media content on digital devices.
- Pupils recognise that content is generated for an audience.

6. Events and actions in programs

Year 3

Go to unit resources

Threads

- Programming

Unit description

In this unit, pupils explore the link between events and actions. Pupils begin by moving a sprite in four directions (up, down, left, and right) and then explore movement within the context of a maze. This unit also introduces programming extensions, through the use of Pen blocks.

Why this, why now?

Having previously created block-based programs that carry out simple sequences, pupils now explore the relationship between events and actions. They use their understanding of sequencing to investigate how actions can be triggered, applying this to control sprite movement and extend program behaviour. The introduction of Pen blocks gives pupils a first experience of enhancing programs with additional features, providing useful context for later work with pre-programmed software elements.

Lessons in unit

1. Moving a sprite
2. Program a sprite to move around a maze
3. Using the pen tool in a program
4. Adding features to a program
5. Debugging movement
6. Creating a maze project

Prior knowledge requirements

- Pupils understand how to create programs with simple sequences of instruction
- Pupils recognise that project work involves a series of tasks to help plan a project before implementing the required outcome

Year 4 units

View interactive sequence online

1 **The internet**	**2** **Audio production**	**3** **Repetition in programs**
4 **Data logging**	**5** **Photo editing**	**6** **Using repetition in programming to create a game**

1. The internet

Year 4

Go to unit resources

Threads

- Networks
- Safety and security

Unit description

In this unit pupils will recognise the internet as a network of networks. They will learn that the World Wide Web is part of the internet. They will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information.

Why this, why now?

As pupils become more independent in their use of technology and begin exploring the online world, it is the right time to develop both their technical understanding and their ability to use the internet safely. This unit introduces the internet as a network of networks and explains that the World Wide Web is one part of it. Pupils learn to evaluate online content for honesty, accuracy and reliability, recognising the consequences of false information. This learning builds the foundations for responsible, informed participation in a connected world.

Lessons in unit

1. Connecting networks
2. The internet and World Wide Web
3. Sharing information
4. Content on the World Wide Web
5. Ownership and the World Wide Web
6. Reliability of content on the World Wide Web

Prior knowledge requirements

- Pupils recognise and can describe how IT is used both in school and the world around them.
- Pupils can explain what a digital device is and the benefits that come from the interconnections with other devices.
- Pupils recognise the the potential and risks of using online technology.

2. Audio production

Year 4

Go to unit resources

Threads

- Creating media
- Effective use of tools

Unit description

In this unit pupils will discover the input and output devices required to work with sound digitally. They will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. Pupils will develop skills in editing and track manipulation by creating a podcast.

Why this, why now?

Pupils are ready to expand their media creation skills by working with audio as well as images and text. This unit introduces the process of recording and editing sound to produce a podcast, building technical knowledge of sound-based input and output devices. Pupils explore issues of ownership and copyright, understanding the importance of using audio responsibly. By learning to record, edit and combine multiple tracks in software they develop the skills to create engaging audio content which provides a foundation for more complex multimedia projects they will create.

Lessons in unit

1. Recording sounds
2. Editing audio
3. Planning a podcast
4. Creating a podcast
5. Combining audio
6. Evaluating podcasts

Prior knowledge requirements

- Pupils understand that audio is a media artefact useable on digital devices.
- Pupils recognise that digital devices can receive a variety of inputs.
- Pupils have experience of planning and implementing simple computer-based projects.

3. Repetition in programs

Year 4

Go to unit resources

Threads

- Algorithms and data structures
- Programming

Unit description

In this unit pupils will create text-based programs which use repetition. They will plan, modify, and test commands to create shapes and patterns. They will explore the different types of loops that can be used to repeat commands in a program.

Why this, why now?

Having previously learned how to create programs using sequences of commands, pupils are now ready to extend their programming knowledge by introducing count-controlled loops. This unit shows how loops can repeat identical sequences efficiently, building both algorithmic thinking and coding skills. Pupils design algorithms and implement them as code, taking an important step toward writing more concise, efficient, and scalable programs in future units.

Lessons in unit

1. Programming a screen turtle
2. Create an algorithm for a text-based program
3. Patterns and repeats
4. Count-controlled loops
5. Procedures in programming
6. Creating a program that uses loops

Prior knowledge requirements

- Pupils have created programs with simple sequences in a block-based language.
- Pupils have planned programs before creating them.
- Pupils can debug simple instructions to ensure they function as intended.

4. Data logging

Year 4

Go to unit resources

Threads

- Data and information
- Effective use of tools

Unit description

In this unit, pupils will consider how and why data is collected. They will explore how sensors monitor the environment. Pupils will collect data as well as access data captured over long periods. They will look at data points, data sets, logging intervals and use a computer to analyse data.

Why this, why now?

Pupils build on their understanding of how data can be collected over time to provide deeper insights. This unit introduces automatic data collection, showing how sensors can act as input devices to monitor the environment in ways similar to human senses. Understanding why and how data is gathered over time prepares pupils for more advanced work in data logging, analysis, and interpreting patterns in later years, across a wide range of real-world applications.

Lessons in unit

1. Using a data set to answer a question
2. Using a digital device to collect data
3. Using data loggers to collect data
4. Analysing data using a computer
5. Data for answers
6. Using data from sensors to answer questions

Prior knowledge requirements

- Pupils understand that digital devices capture input.
- Pupils understand that digital devices process data into useful outputs.
- Pupils understand that computer systems are the combination of many component parts.
- Pupils understand what data is and how it is collected to summarise information about the real world.

5. Photo editing

Year 4

Go to unit resources

Threads

- Creating media
- Effective use of tools

Unit description

In this unit pupils will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices.

Why this, why now?

As pupils begin to navigate online content more independently, it is important they understand how digital images are created, edited, and shared. This unit builds their skills in using digital devices purposefully while exploring how images can be altered and the potential effects of these changes. By engaging with photo editing, pupils consider ethical and social implications, such as misrepresentation and influence on self-image, becoming more critical and responsible digital consumers.

Lessons in unit

1. Changing digital images
2. Recolouring digital images
3. Cloning digital images
4. Combining images
5. Creating digital images for a purpose
6. Evaluating digital images

Prior knowledge requirements

- Pupils recognise how computers make use of images.
- Pupils can select digital tools appropriate to the task at hand.
- Pupils understand that everything they see online is not necessarily true or accurate.

6. Using repetition in programming to create a game

Year 4

Go to unit resources

Threads

- Design and development
- Programming

Unit description

In this unit, pupils will explore the concept of repetition in programming in the Scratch environment. Pupils will look at the difference between count-controlled and infinite loops. They will use their knowledge to modify, design and create games and animations that involve repetition.

Why this, why now?

Having previously explored repetition in programming using Logo, pupils now apply and extend this knowledge in the Scratch environment. They compare the two languages to recognise similarities and differences, before exploring both count-controlled and infinite loops. By modifying existing animations and games, pupils see how repetition can simplify and enhance code. The unit concludes with pupils designing and creating their own game, applying repetition and the stages of program design. This experience strengthens their ability to plan, structure, and refine programs.

Lessons in unit

1. Using loops in a program
2. Types of loops
3. Animating text
4. Modifying a game
5. Designing a game
6. Creating games

Prior knowledge requirements

- Pupils can create sequences in block-based programs.
- Pupils recognise the need to change the flow of control of programs.
- Pupils understand how to use count-controlled iteration in programs.
- Pupils can design and implement simple programming projects.

Year 5 units

View interactive sequence online

1 **Introduction to computer systems**	**2** **Video production**	**3** **Exploring selection in physical computing**
4 **Flat-file databases**	**5** **Introduction to vector graphics**	**6** **Using selection in programming to develop a quiz**

1. Introduction to computer systems

Year 5

Go to unit resources

Threads

- Networks

Unit description

In this unit pupils will explore computer systems and how information is transferred between devices. They will explore the input, output and processes of a variety of different real-world systems. Pupils will discover how information is found on the WWW through learning how search engines work.

Why this, why now?

As pupils begin to use technology more independently across subjects, it is important that they understand how computer systems work and how information moves between devices. This unit develops their ability to explain real-world systems through input, process, and output, supporting logical thinking and problem-solving. Pupils also learn how search engines operate, enabling them to research effectively, evaluate results critically, and strengthen digital literacy.

Lessons in unit

1. Digital systems
2. Computer systems in society
3. Searching the web
4. Selecting search results
5. How search results are ranked
6. How search results can be influenced

Prior knowledge requirements

- Pupils can access search engines.
- Pupils recognise how to interact with search engines.
- Pupils recognise use of IT in and out of school.
- Pupils can identify parts of computer systems.

2. Video production

Year 5

Go to unit resources

Threads

- Creating media
- Effective use of tools

Unit description

In this unit pupils will discover how to create short videos. As they progress through this unit, they will develop the skills of capturing, editing, and manipulating video. Pupils are guided with step-by-step support to take their idea from conception to completion and evaluation.

Why this, why now?

Having previously created and edited digital images and animations, pupils now progress to creating videos by following a structured production process. This unit introduces them to topic-based language and develops their skills in capturing, editing, and manipulating moving images. Learning this now allows pupils to combine composition skills with sequencing and storytelling, preparing them for more advanced multimedia projects where video will be integrated with other digital elements.

Lessons in unit

1. What is a video?
2. Filming techniques
3. Using a storyboard
4. Planning a video and script writing
5. Importing and editing video
6. Video editing and evaluation

Prior knowledge requirements

- Pupils recognise that digital devices can be used to capture inputs
- Pupils understand that media artefacts can be manipulated for a given purpose
- Pupils can find, store and amend suitable digital artefacts.
- Pupils understand how text, images and sound can be combined to effectively convey information.

3. Exploring selection in physical computing

Year 5

Go to unit resources

Threads

- Programming

Unit description

In this unit pupils will use physical computing to explore the concept of selection. Pupils will use conditions to control the flow of a program. They will make use of their knowledge of repetition when introduced to the concept of selection and write programs that utilise this concept.

Why this, why now?

Having already learnt with block-based programming, pupils now extend this by applying code to real-world outputs through a Crumble microcontroller. Connecting and controlling devices makes programming tangible, showing how technology interacts with the physical world. These programming and physical computing skills help pupils see how technology can be used to solve practical problems, design creative projects and bring their ideas to life in ways that go beyond the screen.

Lessons in unit

1. Connecting physical computing devices
2. Combining outputs
3. Controlling with conditions
4. Using selection to control the flow of a program
5. Design physical projects that include selection
6. Writing and testing algorithms

Prior knowledge requirements

- Pupils can explain how sequence, selection and iteration is used in programs.
- Pupils have experience of writing sequence, selection and iteration in block-based programs.
- Pupils recognise input and output devices.
- Pupils understand that systems are combinations of different components working together to complete a task.

4. Flat-file databases

Year 5

Go to unit resources

Threads

- Data and information
- Effective use of tools

Unit description

This unit looks at how a flat-file database can be used to organise data. Pupils will use tools to order and answer questions about data. They will create graphs and charts from their data to solve problems. They will use a real-life database to answer a question, and present their work to others.

Why this, why now?

Having previously organised data in branching databases, pupils are now ready to see why larger databases are useful in many aspects of computing. This unit helps them understand the value of storing and organising information so that it can be searched, compared and presented clearly. Pupils also see how databases are used in the real world. By learning this now, pupils understand the far-reaching applications of databases and also the value in being able to organise data they use so that it is easier to work with.

Lessons in unit

1. Creating a paper-based database
2. Computer databases
3. Using a database
4. Using search tools
5. Comparing data visually
6. Databases in real life

Prior knowledge requirements

- Pupils recognise that data is stored in a computer system.
- Pupils understand that data describes properties of objects.
- Pupils have experience of categorising data by common features.

5. Introduction to vector graphics

Year 5

Go to unit resources

Threads

- Creating media
- Effective use of tools

Unit description

In this unit pupils discover how to use drawing tools to create vector images. They will recognise that images in vector drawings are created using shapes and lines and individual elements are called a objects. Pupils use layering, grouping and duplication to create more complex images.

Why this, why now?

Having previously explored digital painting, pupils are now ready to progress to creating vector drawings. This unit helps them understand that vector images are built from shapes and lines, with each element acting as an object that can be layered, grouped, and duplicated. Learning this now allows pupils to move from freehand creative work to more precise, structured image creation, giving them the tools to design complex digital artwork and laying the groundwork for future work with graphic design and multimedia projects.

Lessons in unit

1. Shape and line tools
2. Creating images using vector graphics
3. Making effective drawings
4. Layers and objects
5. Manipulating objects
6. Create a vector drawing

Prior knowledge requirements

- Pupils can manipulate a mouse or use a touch screen to draw marks on a page.
- Pupils can recognise common digital tools and their uses.
- Pupils understand how digital images can be painted.

6. Using selection in programming to develop a quiz

Year 5

Go to unit resources

Threads

- Algorithms and data structures
- Programming

Unit description

In this unit pupils will discover how to write programs that ask questions and use selection to control the outcomes based on the answers given. They will design a quiz in response to a given task and implement it as a program. They will then evaluate their programs against given criteria.

Why this, why now?

Having previously explored how conditions can be used in programming, pupils now extend this to the 'if…then…else…' structure, showing how different outcomes can be chosen depending on whether a condition is true or false. Pupils represent this in algorithms and then apply it by writing programs that ask questions and respond with different results. More generally, pupils see how selection mirrors decision-making for example, checking whether an answer is correct, classifying data or modelling natural processes showing the wider value of these programming concepts.

Lessons in unit

1. Conditions in selection statements
2. Outcomes from selection statements
3. Using conditions to build quiz questions
4. Designing a quiz
5. Testing a quiz
6. Evaluating a quiz

Prior knowledge requirements

- Pupils have experience of using sequence, selection and iteration in block-based programs.
- Pupils understand that programs have adjust their flow of control based on the state of a program.

Year 6 units

View interactive sequence online

1 **Communication and the internet**	**2** **Web page creation**	**3** **Using variables in programming to develop a game**
4 **Introduction to spreadsheets**	**5** **3D Modelling**	**6** **Sensing movement with physical computing**

1. Communication and the internet

Year 6

Go to unit resources

Threads

- Effective use of tools
- Safety and security

Unit description

In this unit pupils explore how data is transferred over the internet. They will examine addressing and the makeup and structure of data packets. They will investigate how the internet facilitates online communication and collaboration and how to communicate responsibly on the internet.

Why this, why now?

As pupils' use of the internet grows, it is important they begin to understand not just how to use it, but how it works. This unit introduces the idea that data is transferred across the internet through addressing and packets giving pupils insight into the systems that make online communication possible. By collaborating on shared projects, they see the opportunities technology offers while also evaluating different methods of communication. Learning about responsible communication ensures they develop an awareness useful for both school and everyday life.

Lessons in unit

1. Internet addresses
2. Data packets
3. Working together
4. Shared working
5. How we communicate
6. Communicating responsibly

Prior knowledge requirements

- Pupils recognise that computer systems can be connected.
- Pupils recognise that the internet is a large-scale network.
- Pupils can identify common networking hardware.
- Pupils can explain the concept of routing on networks.
- Pupils can describe why people need to communicate using digital devices.

2. Web page creation

Year 6

Go to unit resources

Threads

- Creating media
- Design and development

Unit description

In this unit pupils will discover how to create websites for a chosen purpose. They will identify what makes a good webpage and use this information to design and evaluate their own website. Pupils will consider copyright and fair use of media, the aesthetics of the site, and clear navigation.

Why this, why now?

This unit introduces pupils to the fundamentals of designing and creating websites. Building on their experience of using websites across different devices, pupils will now explore how websites are structured and what makes them effective. They will learn to design webpages with a clear purpose, focusing on layout, navigation, and visual appeal. Pupils will also be taught how to use media responsibly, including understanding copyright and fair use. These skills will help them communicate ideas effectively and ethically through digital media that they use in future.

Lessons in unit

1. Features of a good website
2. Web page layout
3. Copyright of images
4. Device compatibility
5. Follow the breadcrumbs
6. Think before you link

Prior knowledge requirements

- Pupils can identify the features of websites.
- Pupils understand the concept of ownership of content on the WWW.
- Pupils can combine text and images together to create artefacts that meet the needs of an audience.

3. Using variables in programming to develop a game

Year 6

Go to unit resources

Threads

- Programming

Unit description

This unit explores the concept of variables in programming through the development of games. Pupils will investigate what variables are and relate them to real-world examples of values that can be set and changed. Then they use variables to create a simulation of a scoreboard.

Why this, why now?

Having already built understanding of sequence, repetition and selection, pupils are now ready to explore how programs can store and change data. Introducing variables at this stage helps them see how values like scores, timers or measurements can be represented within code. This mirrors the way algebra in maths uses symbols to stand for changing quantities and how science uses variables to measure and control experiments. Learning about variables shows pupils the power of abstraction, helping them connect computing with problem-solving across subjects.

Lessons in unit

1. Introducing variables
2. Updating and changing values in a variable
3. Improving a game
4. Design a game that uses variables
5. Design to code
6. Improving and sharing

Prior knowledge requirements

- Pupils can create block-based programs that use sequence, selection and iteration.
- Pupils have experience of designing simple algorithms, implementing them as code and then testing them for completeness.
- Pupils recognise that programs are coded algorithms.

4. Introduction to spreadsheets

Year 6

Go to unit resources

Threads

- Data and information
- Effective use of tools

Unit description

This unit introduces pupils to how spreadsheets can be used to organise data and create their own data sets. They will discover the importance of formatting data to support calculations, while also examining how formulas can be used to produce calculated data and how graphs can present this data.

Why this, why now?

Having already explored ways of collecting and presenting data, pupils are now ready to organise and manipulate information using spreadsheets. This unit shows them how to structure data into columns and rows, format it clearly, and apply simple formulas to perform calculations. Learning this now helps pupils see how spreadsheets can be used to analyse and interpret data efficiently, a skill with clear applications across beyond computing and everyday problem-solving in the wider world.

Lessons in unit

1. Collecting data
2. Formatting a spreadsheet
3. Spreadsheet formulas
4. Using formulas in a spreadsheet
5. Event planning using a spreadsheet
6. Presenting data using charts

Prior knowledge requirements

- Pupils understand the representation of numerical information in graphical form.
- Pupils recognise that data can take different forms.
- Pupils recognise that data types describe the form that data will take.
- Pupils can perform calculations that involve totalling quantities and costs of items.

5. 3D Modelling

Year 6

Go to unit resources

Threads

- Creating media
- Effective use of tools

Unit description

In this unit pupils will discover how computers can be used to produce 3D models. They will experience working in a 3D space, moving, resizing, and duplicating objects. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy.

Why this, why now?

Having already created 2D digital content, pupils are now ready to extend their skills into working in three dimensions. This unit introduces them to navigating a 3D space and manipulating objects, helping them understand how digital tools can be used to model real-world designs. By experimenting with combining, grouping, and refining objects, pupils begin to see how 3D models can be planned and developed systematically. Learning this now prepares them to apply digital design in practical contexts such as product design, architecture, and engineering, where 3D modelling is widely used.

Lessons in unit

1. Introduction to 3D modelling
2. Modifying 3D objects
3. Make your own name badge
4. Making a desk tidy
5. Planning a 3D model
6. Make your own 3D model

Prior knowledge requirements

- Pupils recognise that computers can be used to create models of parts of the real world.
- Pupils can manipulate digital media artefacts.
- Pupils can use drawing packages to create vector images.

6. Sensing movement with physical computing

Year 6

Go to unit resources

Threads

- Programming

Unit description

This unit brings together all the four programming constructs: sequence, repetition, selection and variables whilst also utilising a physical device - the micro:bit. Pupils begin with a simple program to build and test and then take on three new projects, with each adding more depth and complexity.

Why this, why now?

As pupils complete KS2 they are ready to bring together the four key programming constructs they have encountered: sequence, repetition, selection, and variables. This unit provides an opportunity to combine these elements using the micro:bit to make programming physical and tangible. Pupils consolidate their learning by tackling more open-ended projects, applying their knowledge creatively to solve problems and design purposeful outcomes. This prepares them for the transition to KS3 where programming tasks will become increasingly complex.

Lessons in unit

1. The micro:bit
2. Selection to control the flow in a program
3. Sensing inputs
4. Conditional statements
5. Designing a step counter
6. Making a step counter

Prior knowledge requirements

- Pupils recognise that inputs can be captured and used in computer programs.
- Pupils can create programs that test conditions to determine paths of action.
- Pupils can create block-based programs that make use of: sequence, selection, iteration and variables.
- Pupils recognise that computer systems process inputs into useful outputs through combinations of hardware.

Threads in computing

See how to use threads ↑

Algorithms and data structures

Computing systems

Creating media

Data and information

Design and development

Effective use of tools

Networks

Programming

Safety and security

Thread, **'Algorithms and data structures'**

Year 4

- **Unit 3,** 'Repetition in programs'

Year 5

- **Unit 6,** 'Using selection in programming to develop a quiz'

Thread, **'Computing systems'**

Year 2

- **Unit 1,** 'Information technology in the world beyond school'

Year 3

- **Unit 1,** 'Computer networks'

Thread, **'Creating media'**

Year 1

- **Unit 1,** 'Digital painting'
- **Unit 2,** 'Digital writing'

Year 3

- **Unit 5,** 'Desktop publishing'

Year 4

- **Unit 2,** 'Audio production'
- **Unit 5,** 'Photo editing'

Year 5

- **Unit 2,** 'Video production'
- **Unit 5,** 'Introduction to vector graphics'

Year 6

- **Unit 2,** 'Web page creation'
- **Unit 5,** '3D Modelling'

Thread, **'Data and information'**

Year 2

- **Unit 2,** 'Using IT to organise and present data'

Year 3

- **Unit 4,** 'Organising data using databases'

Year 4

- **Unit 4,** 'Data logging'

Year 5

- **Unit 4,** 'Flat-file databases'

Year 6

- **Unit 4,** 'Introduction to spreadsheets'

Thread, **'Design and development'**

Year 1

- **Unit 3,** 'Creating animations in programs'

Year 2

- **Unit 3,** 'Building sequences in programs'

Year 3

- **Unit 3,** 'Programming sequence using sound'

Year 4

- **Unit 6,** 'Using repetition in programming to create a game'

Year 6

- **Unit 2,** 'Web page creation'

Thread, **'Effective use of tools'**

Year 1

- **Unit 1,** 'Digital painting'
- **Unit 2,** 'Digital writing'

Year 2

- **Unit 2,** 'Using IT to organise and present data'

Year 3

- **Unit 2,** 'Stop-frame animation'
- **Unit 5,** 'Desktop publishing'

Year 4

- **Unit 2,** 'Audio production'
- **Unit 4,** 'Data logging'
- **Unit 5,** 'Photo editing'

Year 5

- **Unit 2,** 'Video production'
- **Unit 4,** 'Flat-file databases'
- **Unit 5,** 'Introduction to vector graphics'

Year 6

- **Unit 1,** 'Communication and the internet'
- **Unit 4,** 'Introduction to spreadsheets'
- **Unit 5,** '3D Modelling'

Thread, **'Networks'**

Year 2

- **Unit 1,** 'Information technology in the world beyond school'

Year 3

- **Unit 1,** 'Computer networks'

Year 4

- **Unit 1,** 'The internet'

Year 5

- **Unit 1,** 'Introduction to computer systems'

Thread, **'Programming'**

Year 1

- **Unit 3,** 'Creating animations in programs'

Year 2

- **Unit 3,** 'Building sequences in programs'

Year 3

- **Unit 3,** 'Programming sequence using sound'
- **Unit 6,** 'Events and actions in programs'

Year 4

- **Unit 3,** 'Repetition in programs'
- **Unit 6,** 'Using repetition in programming to create a game'

Year 5

- **Unit 3,** 'Exploring selection in physical computing'
- **Unit 6,** 'Using selection in programming to develop a quiz'

Year 6

- **Unit 3,** 'Using variables in programming to develop a game'
- **Unit 6,** 'Sensing movement with physical computing'

Thread, **'Safety and security'**

Year 2

- **Unit 1,** 'Information technology in the world beyond school'

Year 4

- **Unit 1,** 'The internet'

Year 6

- **Unit 1,** 'Communication and the internet'



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