Computing Curriculum Flow

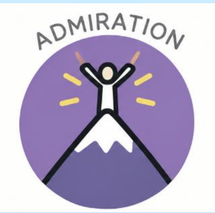
Curriculum Drivers



Curiosity



Communication



Admiration



Worldly





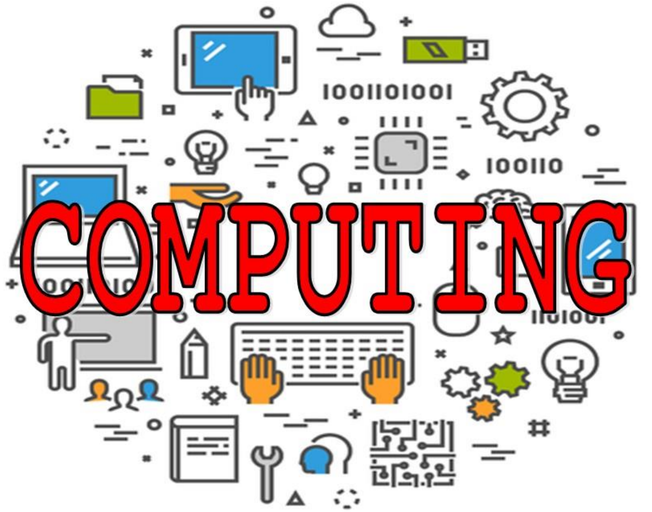




Computing

At Beaminster St Mary's, we want our children to understand that computing is an integral part of modern life and plays a crucial role in how people communicate, create, solve problems and interact with the world around them. We want our children to become confident, responsible and creative users of technology who understand not only how digital systems work, but also how they can use technology safely, ethically and effectively. Through our computing curriculum, pupils develop the knowledge, skills and understanding needed to participate successfully in an increasingly digital world while becoming discerning and responsible digital citizens.

Our curriculum is based on the National Curriculum for Computing in Key Stages 1 and 2 and builds upon the curriculum for the Early Years Foundation Stage.



Aims

The National Curriculum for Computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems are responsible, competent, confident and creative users of information and communication technology.

Cohesive

In computing, pupils need their knowledge to be organised around the most important concepts, which help them make sense of many of the abstract ideas. It is the intention of this curriculum to support pupils to:

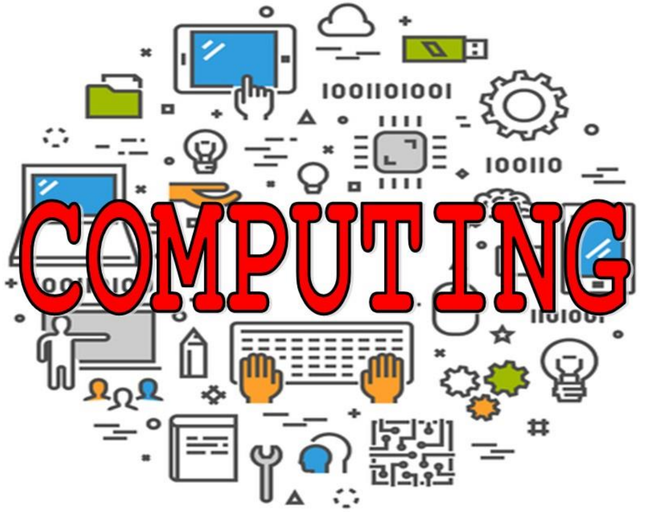
- Develop an extensive and connected knowledge base. When pupils learn new knowledge, it should become integrated with the knowledge they already have. This ensures that learning is meaningful.
- Break down complex concepts and procedures into meaningful 'chunks' of content. These 'chunks', or components, can then be sequenced in the curriculum over time. This allows pupils to successfully build knowledge of science concepts and their relationships over multiple years, without working memory being overloaded.
- Nurture and build motivation and interest in computing through developing a connected schema on which to draw, building children's confidence in computing.

The concepts and their links are broadly summarised below and the diagram on the following page:

Substantive Knowledge

Develop a secure understanding of the five key concepts of computing:

- **Systems and Networks**: understanding how computers, devices, networks and the internet connect and communicate.
- **Creating Media**: understanding how digital tools can be used to create, edit and communicate ideas through a range of media.
- **Programming**: understanding how algorithms and programs are used to solve problems and control digital systems.
- **Data and Information**: understanding how data is collected, organised, analysed and used to answer questions and make decisions.
- **Digital citizenship** sets safe, respectful and responsible boundaries in the digital world;
- **Mechanics** provides the essential foundations that enable pupils to interact confidently and efficiently with technology;



Disciplinary Knowledge

Analytical Thinkers

- Solving problems through computational thinking, logical reasoning and algorithmic design.
- Testing, debugging and refining digital solutions to improve outcomes.
- Evaluating the effectiveness of digital systems and programs.

Creative Designers

- Creating digital products and content for different purposes and audiences.
- Communicating ideas and information effectively using a range of digital technologies.
- Selecting and combining digital tools to achieve intended outcomes.

Resilient Explorers

- Testing and improving digital solutions through evaluation, debugging and refinement.
- Persevering when faced with challenges and learning from mistakes.
- Considering the ethical, social and personal implications of technology use and acting responsibly in digital environments.

Computing

Computing is using technology safely and effectively to control outcomes, create digital content, solve problems, and keep developing as an effective learner in an ever-changing digital world.

We organise our knowledge into key concepts

- **Digital Literacy**
  - **Mechanics**
  - **Digital Citizenship** (Enabled Project Evolve)
- **Computer Science**
  - **Programming**
  - **Systems and Networks**
- **Information Technology**
  - **Creating Media**
  - **Data and Information**

As computer scientist, we adopt a digital mindset to help us explore

Responsible Digital Mindset

Analytical Thinkers

An analytical thinker is someone who solves problems by thinking carefully, trying ideas out, and learning from mistakes to make things better.

Creative Designers

A creative designer is someone who uses technology to share ideas, make things that look good and work well, and improve their work by listening to feedback.

Resilient Explorers

A resilient explorer is someone who is brave enough to try new technology, keeps going when things are tricky, and learns from mistakes to solve problems.

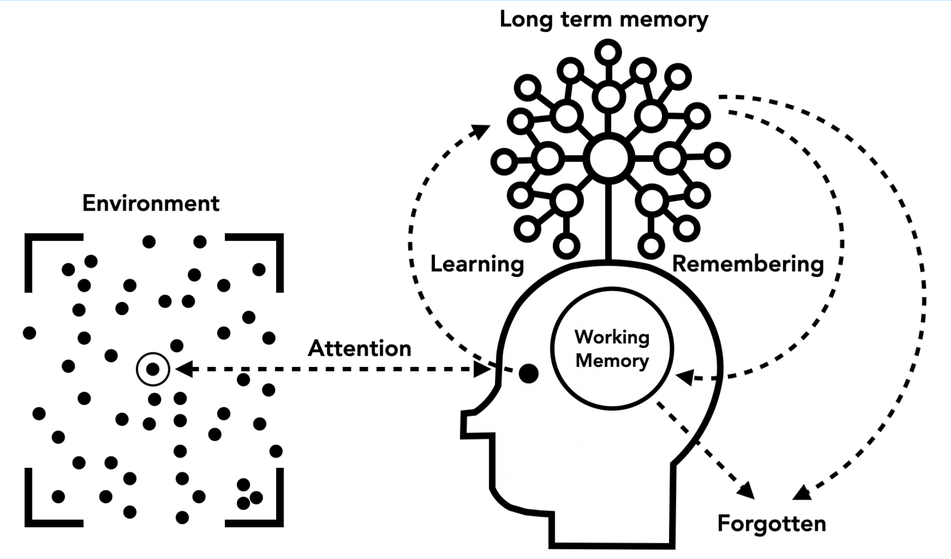
Curriculum Drivers

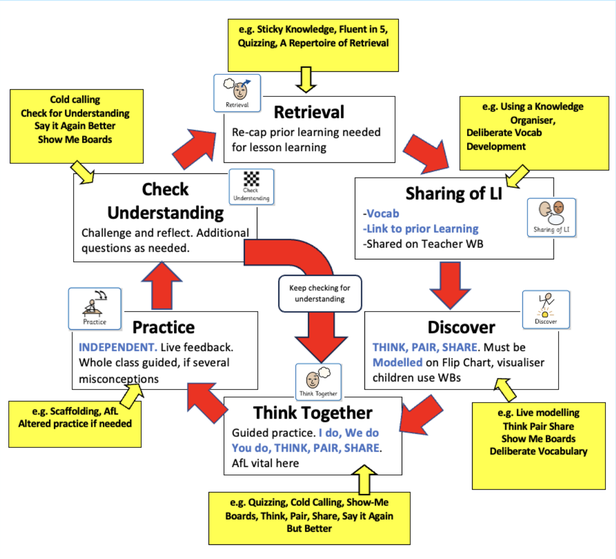
At **Beaminster St Mary's Academy**, we believe that our curriculum should provide children with more than the knowledge and skills set out in the National Curriculum. It should help them to **love each other, learn together and inspire all to succeed**, preparing them not only for the next stage of their education but for life beyond our school.

When designing and developing our curriculum, we consider the **needs of our children and families, our local community, our Christian vision and values, and the distinctive context and opportunities of living and learning in Beaminster and Dorset**. We want every child to develop a strong sense of who they are, their place within their community and their responsibility towards the wider world.

Our curriculum is underpinned by four key drivers: **Curiosity, Admiration, Communication and Worldly**. These drivers help us to identify the experiences, knowledge, skills and opportunities that we want every child to encounter during their time at Beaminster St Mary's. They are woven through our curriculum and wider school life, ensuring that our curriculum is **ambitious, enriching and purposeful**, while reflecting the needs and aspirations of our children.

Learning model and lesson design





Tom Sherrington's learning model underpins our teaching and learning by ensuring that lessons are well-sequenced and structured with clear learning intentions. We prioritise active student engagement, regular retrieval practice and high-quality feedback, allowing students to consolidate and retain knowledge effectively. The model supports teachers in assessing progress through formative assessment and adapting teaching to meet individual needs. A focus on delivering lessons with optimal cognitive load and promoting independent learning, helps students develop a deep understanding of the curriculum and the skills necessary for lifelong learning.

Curiosity



We want our children to be curious about themselves, each other and the world around them. We encourage them to ask questions, investigate, explore and develop a lifelong love of learning.

Communication



We want every child to develop the confidence and skills to express themselves, listen to others and communicate effectively. We place a strong emphasis on vocabulary, reading, speaking and listening, enabling children to participate fully in school, their community and wider society.

Admiration



We want our children to recognise and celebrate excellence, beauty, creativity, courage and achievement in themselves and others. Through our curriculum, children encounter inspiring people, ideas, places, achievements and examples of faith and character.

Worldly



We want our children to understand that they are part of a world much bigger than Beaminster. Our curriculum helps them to appreciate different cultures, communities, places, beliefs and perspectives, while understanding their own responsibilities towards others and the world we share.

Computing at Beaminster St Mary's

National Curriculum

KS1

- Understand what algorithms are: how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.
- Create and debug simple programs.
- Use reasoning to predict the behaviour of simple programs.
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- Recognise common uses of information technology beyond school.
- Use technology safely and respectfully keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

KS2

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and various forms of input and output
- Use logical reasoning to explain how some algorithms work and to detect and correct errors in algorithms and programs
- Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- Select, use and combine a variety of software (Including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- Use technology safely, respectfully and responsibly; recognise acceptable / unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Our Big Ideas that link the learning: Substantive

- Mechanics
- Programming
- Creating Media
- Digital Citizenship
- Systems and Networks
- Data and Information

Second Order Concepts: Disciplinary

- Analytical Thinkers
- Creative Designers
- Resilient Explorers

Focused, Ambitious and Rigorous

This curriculum document sets out what it means 'to get better' at computing. Children are progressing in computing if they are building their substantive and disciplinary knowledge. The essential knowledge required for children to meet the end goals of the national curriculum has been identified and organised into key concepts.

- Substantive knowledge is knowledge of the products of computing, such as correct and safe use of the hardware (mechanics), the correct and safe programming of systems and networks, and the ability to create media and manipulate data and information.
- Disciplinary knowledge is knowledge of the practices of computing. This teaches pupils how to use and apply their computing knowledge in ways that are safe, responsible, creative and well-thought through. This involves pupils learning and applying disciplinary knowledge in all aspects of their computing journey.

The curriculum is deigned to be rigorous through embedding the disciplinary knowledge within the substantive knowledge content. This enables pupils to use disciplinary knowledge together with substantive knowledge to develop and act with a responsible digital mindset.

The focused identified knowledge can be found in the progression tables below, set against the national curriculum end goals for each year.

Relevant

This curriculum has been personalised by individual schools through identifying the specificity in the knowledge that is pertinent to their context. It has been made relevant to their context through careful consideration of the needs of their community. A common example of this can be seen where a school makes the curriculum relevant by personalising aspects of the Digital Citizenship concept in response to any particular needs of their children and community.

Appropriate

Our curriculum aims to create a pathway for our children to assemble small ideas together, building into concepts which link and connect creating a powerful mental framework of the big ideas of computing. It aims to expose how prior knowledge is built upon and grown leading to growing expertise over time leading to more complex abstract ideas and concepts. It can be seen in the diagrams below.

Early	Novice	Growing Expertise
Through deliberate and structured opportunities, early leaners experience and explore the physical world around them. They benefit from explicit teaching of knowledge and associated vocabulary in small, iterative steps. They talk about what they notice in a variety of contexts. They start to notice some forms of technology, the intended purpose and how it can be helpful.	Novice learners require the essential knowledge, vocabulary and skills explicitly taught so that it is secure before moving on to new content. This is sequenced in small, iterative steps, with clear links explicitly made between new and prior knowledge. There are regular opportunities to acquire the substantive and disciplinary knowledge through guided and independent practice. They use this knowledge to recognise, identify and apply the right step to help solve a simple problem, knowing that they must be safe and responsible.	As children gain more knowledge, they will be able to use prior knowledge to respond to and think more analytically about a problem faced. They will be increasingly able to link knowledge, work systematically, logically and critically, making informed decisions about the tools and approach they take when designing.

Sequenced and Progressive

Through the careful consideration of the sequencing of the curriculum, ensuring that knowledge builds on and grows from previous knowledge, the curriculum has become the progression model. The sequences of knowledge are exposed in the pathways for single and mixed age below. The rationale for these is summarised in the flow charts that follow. There has been careful consideration to the cohesion between the computing, maths and PSHCE curriculum to ensure that children are only applying previously acquired knowledge.

The Story of Computing

The concepts 'Mechanics' and 'Digital Citizenship' contain the foundational knowledge that allows children to interact with the other taught curriculum concepts and units – without it, children will not be able to efficiently complete the tasks set within the other areas of the computing curriculum.

Computer Science and Information Technology units stand alone and do create a narrative of learned knowledge but have been sequenced in a recommended order, as shown in the sequencing table below.

How the substantive and disciplinary concepts interlock

Digital citizenship sets safe, respectful and responsible boundaries in the digital world;
mechanics provides the essential foundations that enable pupils to interact confidently and efficiently with technology;
programming tells computers what to do;
systems and networks connect programs and devices so they can share **data and information**;
together these enable purposeful **creating of media**.
Learners enact this through a **responsible digital mindset**, by thinking like **analytical thinkers**, making like **creative designers**, and persisting like **resilient explorers**.

Our Big Ideas

1. Mechanics

Mechanics provides the essential foundations that enable pupils to interact confidently and efficiently with technology. Children learn how to use input devices such as touchscreens, mice, trackpads and keyboards, alongside developing file management and device connection skills. Progression focuses on building fluency, accuracy and independence, moving from simple interactions in EYFS to confident use of shortcuts, cloud storage, troubleshooting and device compatibility by Year 6. By mastering these practical skills, pupils can focus more on creativity, problem solving and learning. Mechanics underpins success across all other areas of the computing curriculum.

2. Digital Citizenship

Digital Citizenship develops pupils' understanding of how to use technology safely, respectfully and responsibly. It promotes empathy, integrity and critical awareness when engaging with digital content, online communities and connected technologies. Through progressive learning about identity, relationships, reputation, privacy, security, online information, wellbeing and copyright, children learn to make informed decisions and act as positive members of the digital world. Digital Citizenship is designed to be woven through every computing lesson and/or unit, ensuring that online safety and responsible behaviour are consistently reinforced.

3. Programming

Programming teaches pupils how to create solutions by writing code and designing algorithms. Learning begins with simple commands and sequences before progressing to repetition, inputs and outputs, conditionals, variables and increasingly sophisticated program design. Throughout the curriculum, pupils develop logical thinking, resilience and creativity as they predict outcomes, debug errors and refine their work. Programming enables children to understand how digital systems function rather than simply using them. By learning to create, test and improve programs, pupils become confident problem solvers who can apply computational thinking to a wide range of real-world situations and technological challenges.

4. Systems and Networks

Systems and Networks helps pupils understand how devices connect, communicate and share information. Children progress from recognising technology in their environment to understanding networks, the internet, data transfer, online services, search technologies and cloud-based collaboration. The curriculum develops age-appropriate understanding of how information travels between devices and how connected technologies support communication and learning. Pupils learn to evaluate the reliability of online information and use digital services responsibly. This strand equips children with the knowledge needed to understand the connected world.

5. Creating Media

Creating Media focuses on using technology creatively and purposefully to communicate ideas. Pupils learn to create digital content through drawing, photography, desktop publishing, music, audio recording, animation, video production, vector graphics, 3D modelling and website design. As they progress, children make increasingly informed decisions about design, audience and purpose while evaluating and refining their work. The strand encourages creativity alongside technical competence, helping pupils understand how digital media can be used to inform, persuade and entertain.

6. Data and Information

Data and Information develops pupils' understanding of how information is collected, organised, analysed and used. Children begin by sorting and grouping objects before progressing to databases, data logging, spreadsheets and data analysis. They learn how technology can help identify patterns, answer questions and support informed decision making. The curriculum emphasises careful thinking, accuracy and curiosity, enabling pupils to evaluate information critically and understand its relevance in everyday life. By exploring how data is gathered, represented and interpreted, children become increasingly confident users and consumers of information in both digital and real-world contexts.

Computing Curriculum Overview

	Autumn		Spring		Summer	
EYFS	Unplugged Instructions – Following and Giving	Programming A – Moving a Robot (modelled)	Creating Media – Photographing everyday objects	Programming B – modelled	Creating Media – Type my name – using a mouse	Data and Information – Drawing lines and patterns
	Mechanics: Shown how to use the Interactive Whiteboard – tablets – finger manipulation **Digital Citizenship**					
Year 1	**Technology Around Us** *What is technology and how is it used around us?*	**Moving a Robot** *What is a program command?*	**Digital Writing** *What tools can I use to create digital writing?*	**Programming Animations** *What is an algorithm?*	**Digital Painting** *What tools can I use to create digital art?*	**Grouping Data** *How can objects be labelled, grouped and compared?*
	Mechanics: Accurate touch and mouse use; type name and save work **Digital Citizenship**					
Year 2	**Information Technology Around Us** *How is information technology used beyond school?*	**Robot Algorithms** *What is a program outcome?*	**Digital Photography** *How can digital tools improve a photograph?*	**Programming Quizzes** *How do I know whether my program output is correct?*	**Digital Music** *How can digital tools create and change music?*	**Pictograms** *How can data be collected, organised and presented?*
	Mechanics: *Drag, resize and right-click; open, rename and punctuate text* **Digital Citizenship**					
Year 3	**Connecting Computers** *How do digital devices connect and communicate?*	**Sequencing sounds** *What is a program sequence?*	**Stop-frame Animation** *How can I use digital tools to create an animation?*	**Events and Actions in Programs** *How do events help me sequence a program?*	**Desktop Publishing** *How do digital tools help create an effective design?*	**Branching Databases** *How can questions be used to organise and identify data?*
	Mechanics: *Switch apps; create folders; use cursor and copy/paste shortcuts* **Digital Citizenship**					
Year 4	**The Internet** *How does the internet connect networks and provide services?*	**Repetition in sounds** *How do I use repetition in programming?*	**Audio Production** *What impact do my choices have when creating?*	**Repetition in Games** *How can I select the right type of repetition for my program?*	**Photo Editing** *What is the impact of editing a photo?*	**Data Logging** *How can digital devices collect and analyse data over time?*
	Mechanics: *Move, copy and delete files; develop accurate keyboard fluency; recognise connections* **Digital Citizenship**					
Year 5	**Systems and Searching** *How do computer systems work together and organise information?*	**Selection in Physical Computing** *In what ways can I control an output?*	**Video Production** *How can digital tools help with video creation?*	**Selection in Quizzes** *How can my program control an output?*	**Vector Drawings** *How can digital tools support the creation of vector graphics?*	**Flat-file Databases** *How can a database help us search, sort and answer questions?*
	Mechanics: *Use cloud and local storage; share appropriately; connect to a second screen* **Digital Citizenship**					
Year 6	**Communication and Collaboration** *How do networks enable people to communicate and work together?*	**Variables in games** *How do variables affect a program?*	**Web Page Creation** *How do I make sure my website design meets its purpose?*	**Sensing Movement** *How can I use a range of programming tools to solve problems?*	**3D Modelling** *How can I create 3D media?*	**Spreadsheets** *How can spreadsheets organise, calculate and present data?*
	Mechanics: *Choose compatible formats and connections; troubleshoot; use keyboards confidently* **Digital Citizenship**					

Mechanics | Digital Citizenship	Creating Media	Programming	Systems and Networks	Data and Information

Computing at Beaminster St Mary's

EYFS

- Data and Information – Drawing lines and patterns
- Creating Media – Type my name – using a mouse
- Programming B – modelled
- Creating Media – Photographing everyday objects
- Programming A – Moving a Robot (modelled)
- Unplugged Instructions – Following and Giving

Year 1

- Computing Systems and Networks – Technology Around Us
- Programming A – Moving a Robot
- Creating Media – Digital Planning
- Programming B – Programming Animations
- Creating Media – Digital Writing
- Data and Information – Grouping Data

Year 2

- Data and Information – Pictograms
- Creating Media – Digital Music
- Programming B – Programming Quizzes
- Creating Media – Digital Photography
- Programming A – Robot Algorithms
- Computing Systems and Networks – IT Around Us

Year 3

- Computing Systems and Networks - connecting computers
- Programming A – sequencing sounds
- Creating Media – Stop-Frame Motion
- Programming B – Events and actions in programs
- Creating Media – Desktop Publishing
- Data and Information – Branching databases

Year 4

- Data and Information – Data Logging
- Creating Media – Photo Editing
- Programming B – Repetition in Games
- Creating Media – Audio production
- Programming A – Repetition in shapes
- Computing Systems and Networks – The Internet

Year 5

- Computing Systems and Networks – Systems and Searching
- Programming A – Selection in physical computing
- Creating Media – Video production
- Programming B – Selection in Quizzes
- Creating Media – Introduction to Vector Graphics
- Data and Information – Flat File Databases

Year 6

- Data and Information – Introduction to spreadsheets
- Creating Media – 3D Modelling
- Programming B – Sensing Movement
- Creating Media – Web Page Creation
- Programming A – Variables in Games
- Computing Systems and Networks – Communication and Collaboration

Programming Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Purple = Coding Green = prediction Yellow = Debug Blue = input/output devices	- Follow instructions to find something e.g. a treasure hunt - Program an object to move forwards and backwards / follow instructions - Predict what will happen with certain commands - Notice cause and effect on other applications	- Use single commands to control a device - Understand that code needs to be in a specific order - Create a simple sequence of instructions to achieve a specific goal - Predict what will happen with a short sequence of code with 1-4 steps - Debug a simple error	- Understand what an algorithm is and how it can be used to code - Create a simple program with 5-8 commands in order to achieve a goal - Predict what will happen in a sequence of code with 5-8 commands compare it to the outcome - Debug an algorithm with up to 8 commands	- Design a sequence of code that achieves a specific goal using the most efficient commands - Use different motion, looks and sounds as outputs - Use different user-controlled inputs to control a programme (mouse click, key press, green flag) - Link different forms of input to different outputs - Identify and fix bugs in a programme with more than one sequence of code - Use logical reasoning to explain their code	- Use a count-controlled loops to produce a given outcome - Use infinite loops to produce a given outcome - Use different automated inputs to control a programme (background, volume, messages, sensors) - Explain how an algorithm creates a specific output	- Use conditionals to run code only if certain conditions are met (IF / IF ELSE) - Use boolean operators (AND, OR, NOT) to extend conditional coding - Control different inputs and outputs with conditional coding	- Define a variable and explain how it can be used in a programme - Use an event to define or adjust a variable - Use a range of loops, conditionals and boolean operators to design a programme to meet a specific goal
Generalisation	A simple instruction leads to a simple action.	A command is an instruction given to a device to make it do (control) something.	An algorithm is a set of commands/instructions. A programme outcome is the result of an algorithm. Code is instructions a computer can understand.	When programming, code is sequenced in a certain order. Code sequences can help us to control how an input affects the output.	Code can contain loops of repeating algorithms that combine to control an outcome/output in a more efficient way.	When programming, conditionals, Booelan operators, variables and events can control the decisions in an algorithm in different ways (gives different outputs). A conditional lets a programme make a decision based on whether something is true or false. Boolean operators are words used to connect or change conditions. An event is an action that triggers a specific piece of code to run.	

Systems and Network Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Purple = Recognising Devices of Technology Green = Internet Devices Blue = Digital Citizenship – ALL OF THIS IS COVERED IN PROJECT EVOLVE Black = Data Highlighted in green = search – could go somewhere else	- Recognise technology in the environment (TVs, tablets, cameras, phones). - Notice that technology is used to communicate (video calls, taking photos, playing sounds). - Understand cause and effect when using technology (pressing a button to make something happen).	- Identify technology in the classroom and at school. - Understand that digital devices have different purposes (input/output). - Recognise that devices can be connected (wired or wireless). - Understand that information can be shared between connected devices.	- Understand that a network connects devices so they can share information. - Recognise examples of networks in school (e.g. laptops connected to Wi-Fi and printers). - Begin to understand that the internet connects many networks together. - Recognise safe and responsible use of connected technology.	- Understand that networks can connect devices in different locations. - Recognise that the internet allows people to share and communicate globally. - Understand that information travels digitally as data. - Begin to understand that online information should be used thoughtfully.	- Recognise that the internet provides multiple services (web, email, streaming). - Understand that data is transferred across networks. - Understand that information online may vary in reliability. - Know how to use online tools safely and responsibly.	- Understand that search engines organise and rank information. - Recognise that the internet and the World Wide Web are different but connected. - Understand that not all online information is accurate or reliable. - Use online services (e.g. email, cloud storage, shared documents) purposefully.	- Understand that online collaboration allows people to share and work together in real time. - Recognise how information is stored and shared using cloud-based tools. - Know how to communicate and collaborate safely and respectfully online. - Reflect on the opportunities and risks of an increasingly connected world.
Generalisation		A system is different computer parts working together to perform a function (job). A system takes an input, controls it and creates an output. Computers use networks to connect and share information with other computers.		A network is a group of interconnected devices. Information (data) can be shared to other computers across the world using networks.		Systems and networks are used to help us control large amounts of information across many devices. Systems and networks allow us to collaborate and communicate efficiently. The accuracy of the input can affect the reliability of the output.	

Creating Media Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Use digital tools to create and change media		Use digital tools to create and change media for a purpose		Use digital tools to create and change more complex media projects, making informed decisions along the way.	
Blue = Desktop Publishing and 2D/3D Design Green = Text Processing Yellow = Digital Photography and Image Manipulation Purple = Audio and Music Black = Animation and media Red = Website Production		- To describe what different freehand tools do - To use the shape tool and the line tools - To make careful choices when painting a digital picture - To explain why I chose the tools I used - To use a computer on my own to paint a picture - To compare painting a picture on a computer and on paper - To use a computer to write - To add and remove text on a computer - To identify that the look of text can be changed on a computer - To make careful choices when changing text - To explain why I used the tools that I chose - To compare typing on a computer to writing on paper	- To use a digital device to take a photograph - To make choices when taking a photograph - To describe what makes a good photograph - To decide how photographs can be improved - To use tools to change an image - To recognise that photos can be changed - To identify that there are patterns in music - To experiment with sound using a computer - To use a computer to create a musical pattern - To create music for a purpose - To review and refine our computer work -	- To recognise how text and images convey information - To recognise that text and layout can be edited - To choose appropriate page settings - To add content to a desktop publishing publication - To consider how different layouts can suit different purposes - To consider the benefits of desktop publishing - To explain that animation is a sequence of drawings or photographs - To relate animated movement with a sequence of images - To plan an animation - To identify the need to work consistently and carefully - To review and improve an animation - To evaluate the impact of adding other media to an animation	- To explain that the composition of digital images can be changed. - To explain that colours can be changed in digital images. - To explain how cloning can be used in photo editing. - To explain that images can be combined - To combine images for a purpose. - To evaluate how changes can improve an image. - To identify that sound can be recorded - To explain that audio recordings can be edited - To recognise the different parts of creating a podcast project. - To apply audio editing skills independently - To combine audio to enhance my podcast project. - To evaluate the effective use of audio.	- To identify that drawing tools can be used to produce different outcomes - To create a vector drawing by combining shapes - To use tools to achieve a desired effect - To recognise that vector drawings consist of layers - To group objects to make them easier to work with - To apply what I have learned about vector drawings - To explain what makes a video effective - To identify digital devices that can record video - To capture video using a range of techniques - To create a storyboard - To identify that video can be improved through reshooting and editing - To consider the impact of the choices made when making and sharing a video	- To recognise that you can work in three dimensions on a computer - To identify that digital 3D objects can be modified - To recognise that objects can be combined in a 3D model - To create a 3D model for a given purpose - To plan my own 3D model - To create my own digital 3D model - To review an existing website and consider its structure - To plan the features of a web page - To consider the ownership and use of images (copyright) - To recognise the need to preview pages - To outline the need for a navigation path - To recognise the implications of linking to content owned by other people
Generalisation							

Data and Information Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Red highlight = statements that could be taught outside of the comp curriculum	- Describe and sort objects e.g. can you find all the red cars? - Voting for a specific reason e.g. favourite snack or story. - Create simple pictograms and tally charts to record an activity	- Describe objects using labels and match them to groups. - Group objects based on what they are and count how many are in each group e.g. digital register. - Count and compare groups of objects. - Record and share findings about groups e.g. photograph objects with specific properties.	- Collect and organise data using tally charts and pictograms. - Use attributes to group and compare data. - Use a computer to present and interpret data e.g. use a pictogram to answer 'which is the most popular fruit?' - Understand when information should and should not be shared.	- Use yes/no questions and attributes to sort and identify objects. E.g. 'does it have wings'. - Create a branching database, refining to ensure accuracy and efficiency. - Suggest and explain real-world uses for a branching database.	- Understand and explain how and why data is collected over time. - Use a digital device (e.g. data loggers and sensors) to collect data automatically. - Analyse and interpret data collected using technology. - Pose and answer questions using a data logger. E.g. 'How does the temperature in a classroom change over the course of the day?'	- Create and organise data in a flat-file (spreadsheet) database using records (all information) and fields (single type of information). - Search, sort and group data to answer questions. - Display data visually using various tools e.g. bar charts. - Apply database skills to real-world scenarios and present findings e.g. flights that match a specific criteria.	- Collect, organise, and format data in a spreadsheet. - Use formulas (+ - * / SUM) to perform calculations and manipulate data. - Use a spreadsheet to solve problems and answer questions e.g. "which is the most expensive item?' - Present data using charts and tables.
Generalisation		Data and information can be controlled with computers/technology.	Data/information can be collected, controlled and shared with technology.	Data and information can be controlled for a purpose.	Digital systems and devices help to collect, analyse and present data (in an efficient way)	Digital software and tools help control more complex data to help solve difficult problems.	Digital software and tools can help control large amounts of data and present information in different ways.

Digital Citizenship Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Recognise how to use technology safely, kindly and know sometimes you need to ask for help		Understand the content online can be represented in different ways and impact others in different ways		Critically evaluate online content, using this to make more informed choices when using technology	
Self-image and identity	- I can recognise, online and offline, that anyone can say 'no' / 'please stop' to someone who makes them feel sad, uncomfortable or upset.	- I recognise that there may be people online who could make someone feel sad or upset. - I can give examples of when to speak to an adult if something happens that makes me feel sad, uncomfortable or upset.	- I can explain how other people may look and act differently online and offline. - I can give examples of issues online that might - make someone feel sad, uncomfortable or upset and examples of how they might get help.	- I can explain how people can represent themselves in different ways online. - I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why.	- I can explain how my online identity can be different to my offline identity. - I can describe positive ways for someone to interact with others online. - I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.	- I can explain how identity online can be copied, modified or altered. - I can explain how to make responsible choices about having an online identity, depending on context.	- I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online. - I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I can give examples of how to get help, both on and offline. - I can explain the importance of asking until I get the help needed.
Online relationships	- I can recognise and give examples of some ways in which the internet can be used to communicate with people I know	- I can give examples of when I should ask permission to do something online and explain why this is important. - I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). - I can explain why it is important to be considerate and kind to people online and to respect their choices. - I can explain why things one person finds funny or sad online may not always be seen in the same way by others.	- I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. - I can explain who I should ask before sharing things about myself or others online. - I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure. - I can explain that I have the right to say no and know who to ask for help if I feel pressured or unsure. - I can identify who can help me if something happens online without my consent. and know who to ask for help if I feel pressured or unsure. I can identify who can help me if something happens online without my consent	- I can describe ways people who have similar likes and interests can get together online. - I can explain how knowing someone online can be different from knowing them in real life and why I should be careful about who I trust. - I can explain that what is said or shared online can affect people's feelings. - I can explain why permission is important before sharing information, images, or videos online.	- I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms) - I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours - I can explain that content shared online may affect people in different ways.	- I can identify examples of how technology is used to support education and learning. - I can explain that some people I meet online may intend harm and understand that this is never my fault. - I can describe how people participate and collaborate positively in online communities. - I can explain how to seek help and recognise when to tell a trusted adult about online problems. - I can demonstrate ways to offer support and kindness to others online.	- I can explain that sharing content online can have positive or negative effects on others. - I can describe how to show kindness and respect online, including respecting boundaries and supporting others if they are treated unfairly. - I can explain that private content shared online can have unintended consequences, such as being shared without permission. - I can explain the risks of taking or sharing inappropriate images, even with consent, and know who to talk to if I or someone else is worried.

Digital Citizenship Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Recognise how to use technology safely, kindly and know sometimes you need to ask for help		Understand the content online can be represented in different ways and impact others in different ways		Critically evaluate online content, using this to make more informed choices when using technology	
Online reputation	- I can identify ways that I can put information on the internet.	- I can recognise that information can stay online and could be copied. - I can describe what information I should not put online without asking a trusted adult first.	- I can explain how information put online about someone can last for a long time. - I can describe how anyone's online information could be seen by others. - I know who to talk to if something has been put online without consent or if it is incorrect.	- I can explain how to search for information about others online. - I can explain what I can and cannot share online and why I need to be careful with personal information. - I can explain who someone can ask if they are unsure about putting something online.	- I can describe how to find out information about others by searching online - I can explain ways that some of the information about anyone online could have been created, copied or shared by others.	- I can search for information about an individual online and summarise the information found. - I can explain how information online can be used to judge someone and why these judgements may be wrong.	- I can explain how to create and maintain a positive online reputation. - I can describe strategies to protect my digital identity, including using different levels of anonymity.
Online bullying	- I can describe ways that some people can be unkind online and how this might make others feel.	- I can describe how to behave online in ways that do not upset others.	- I can explain what bullying is, how it can happen, and how it might make someone feel. - I can explain that it is never the fault of someone who is being bullied. - I can explain ways to get help if someone is being bullied.	- I can describe appropriate ways to behave towards other people online and why this is important. - I can give examples of how bullying behaviour could appear online and how someone can get support.	- I can recognise when someone is upset, hurt or angry online. - I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat) - I can explain how what I post online can affect others and my reputation.	- I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences. - I can explain how joking, teasing, or 'banter' online can be experienced as hurtful by others and why it may be considered bullying. - I can describe ways to get help, report concerns, and know when to tell a trusted adult. - I can explain how to block abusive users and identify helplines that can support people experiencing bullying.	- I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. - I can explain how someone would report online bullying in different contexts.

Digital Citizenship Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Recognise how to use technology safely, kindly and know sometimes you need to ask for help		Understand the content online can be represented in different ways and impact others in different ways		Critically evaluate online content, using this to make more informed choices when using technology	
Managing online information	- I can talk about how to use the internet as a way of finding information online. - I can identify devices I could use to access information on the internet.	- I can give simple examples of ways to find information using digital technology e.g. search engines, voice activated searching - I know that we can see different things online, including real, make-believe, or funny content. - I know how to get help from a trusted adult if something online makes me feel upset or worried.	- I can use simple keywords in search engines. - I can demonstrate how to navigate a simple webpage to get to information I need e.g. home, forwards, back, links, tabs and sections - I can explain what voice activated searching is and know it is not a real person e.g. Alexa, Google Now, Siri - I can explain the difference between things that are real and things that are made up. - I can explain why some information	- I can use search engines and key phrases to find accurate information and explain how autocomplete can help. - I can explain how the internet can be used to buy and sell things. - I can explain the difference between beliefs, opinions, and facts, and that not all opinions online are true or fair. - I can describe ways to get help from a trusted adult if something online makes me feel upset or worried.	- I can search for information using different technologies and judge whether it is probably accurate, making my own decisions about content. - I can recognise ways technology is used to encourage people to buy things online and describe some examples. - I can explain that just because many people share the same opinions or beliefs online, it does not make them true. - I can explain how technology can act like or impersonate living things, and describe some benefits and risks.	- I can explain the benefits and limitations of different search technologies and how they can influence the information I see. - I can explain what it means to be sceptical and evaluate digital content to decide what is trustworthy. - I can explain key concepts such as fact, opinion, belief, validity, reliability, and evidence. - I can identify ways the internet can guide people towards information for different agendas.	- I can describe how search engines work, how results are ranked, and how to use them effectively. - I can explain that some online information is opinion, why opinions may be presented as facts, and why popularity or authority does not make them true or fair. - I can define influence, manipulation, and persuasion, and explain how these can be encountered online. - I can explain how persuasive design can be used to influence people's choices.
Health, well-being and lifestyle	- I can identify rules that help keep us safe and healthy in and beyond the home when using technology	- I can explain rules to keep myself safe when using - technology both in and beyond the home.	- I can explain simple guidance for using technology in different environments e.g. accessing online technologies in school and at home and how it helps.	- I can explain why spending too much time using technology can sometimes have a negative impact on someone. - I can give some examples of both positive and negative activities where it is easy to spend a lot of time online (e.g. doing homework, games, films, videos). - I can explain why some online activities have age restrictions, why it is important to follow them - I know who I can talk to if others pressure me to watch or do something online	- I can explain how using technology can be a distraction from other things, in both a positive and negative way. - I can identify times or situations when someone may need to limit the amount of time they use technology and can suggest strategies to help with this.	- I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively. - I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals. - I can explain how and why some apps and games may request or take payment for additional content (e.g.in-app purchases, lootboxes) and explain the importance of seeking permission from a trusted adult before purchasing.	- I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. - I can discuss the pressures that technology can place on someone and how / when they could manage this. - I can recognise features of persuasive design and how they are used to keep users engaged (current and future use). - I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).

Digital Citizenship Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Recognise how to use technology safely, kindly and know sometimes you need to ask for help		Understand the content online can be represented in different ways and impact others in different ways		Critically evaluate online content, using this to make more informed choices when using technology	
Privacy and security	- I can identify some simple examples of my personal information and I would trust to share this with.	- I can explain that passwords keep information, accounts, and devices safe. - I can recognise more detailed information that is personal to me. - I can explain why I should always ask a trusted adult before sharing personal information online, for myself or others.	- I can explain how passwords protect information, accounts, and devices, and describe rules for keeping personal information private. - I can explain what 'private' means and give examples of keeping things private. - I can explain that some devices at home are connected to the internet and give examples, such as lights, fridges, toys, or TVs.	- I can describe simple ways to create strong passwords and keep them private. - I can explain why we should only share information with people we trust and tell a trusted adult if we feel unsure or pressured. - I can describe how connected devices can collect and share information with others.	- I can describe strategies for keeping personal information private in different situations. - I can explain that internet use is never fully private and may be monitored by adults. - I can describe how online services may ask for consent to store information and know how to respond or ask for help if unsure. - I can explain the digital age of consent and how it affects online services asking for information.	- I can explain what a strong password is and demonstrate how to create one. - I can explain how many free apps or services may read and share private information with others. - I can explain what app permissions are and can give some examples.	- I can describe ways to manage passwords safely and explain what to do if a password is shared, lost, or stolen. - I can explain why it is important to keep software and apps up to date and how to do this. - I can describe ways to increase privacy on apps and online services. - I can describe how some online content targets people to gain money or information illegally and explain strategies to identify scams or phishing. - I know that online services have terms and conditions that govern their use.
Copyright and ownership	- I know that work I create belongs to me. - I can name my work so that others know it belongs to me.	- I can explain why work I create using technology belongs to me. - I can say why it belongs to me e.g. I designed it or I filmed it. - I can save my work under a suitable title / names so that others know if belongs to me. - I understand that work created by others does not belong to me even if I save a copy.	- I can recognise that content on the internet may belong to other people. - I can describe why other people's work belongs to them.	- I can explain why copying someone else's work form the internet without permission isn't fair and may cause problems.	- When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. - I can give some simple examples of content which I must not use without permission from the owner e.g. music, videos, images	- I can access and justify when it is acceptable to use the work of others. - I can give examples of content that is permitted to be reused and know how this content can be found online.	- I can demonstrate the use of search tools to find and access online content which can be reused by others. - I can demonstrate how to make references to and acknowledge sources I have used from the internet.

Mechanics Knowledge Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Touchscreen	- Tap and swipe on a touchscreen - To understand the different between touchscreen and non-touchscreen devices	- Tap to select items accurately - Pinch to zoom	- Drag and drop with control - Rotate and resize object using touch gestures	- Switch efficiently between apps and windows			
Mouse and Trackpad	- Left click	- Click and drag objects accurately - Double click to open items	- Right click functions - Select text using click and drag	- Use cursor accurately for resizing, selecting and highlighting - Understand different cursor icons			
File Management		- Name and save document in a specific folder. - Understand that work is saved on a device	- Open a document from a specific location - Rename a file	- Create folders for saving work - Understand file icons and file types	- Move and copy files between folders - Delete files	- Understand cloud storage vs local storage - Share files appropriately	- Understand basic file formats and compatibility
Keyboard	Recognise letters on a keyboard and know that space bar is a finger space Press the keys to type their name	- Use a keyboard to type words - Use the backspace button to delete letters - Use the full stop key - Use caps lock and shift to write capital letters - To use return key to start a new line	Use shift to access special characters Type simple sentences with punctuation	- Know the home row keys and type words with them using the correct finger for each letter - Use correct fingers to type other near keys (e, i, r, u) - Use keyboard shortcuts for copy and paste	Use the correct fingers to type all keys above the home row (t, y, w, o, q, p)	- Use the correct fingers to type all keys below the home row (v, m, b, c, ,)	- Use the correct fingers to make the last five keys and make capitals letters using the shift key (x, z, ‘, / .) - Use a keyboard confidently across a variety of devices (desktop, laptop, touchscreen devices)
Connections		- Plug in simple devices e.g. headphones	-	- Connect an input device using Bluetooth	- Name different types of connection and their common uses (USB A, USB C, audio jack, lightning, HDMI, micro USB)	Connect a device to a secondary screen in different ways (AirPlay, USB C, HDMI)	Troubleshoot simple connection issues Select appropriate cables and connections for a task

	EYFS (Explore & notice)	KS1 (Recognise, identify & use)	LKS2 (Identify & use in a more informed way)	UKS2 (Link knowledge to work systematically, logically & critically)
 **Analytical Thinkers** An analytical thinker is someone who solves problems by breaking them down into steps, designing clear instructions, and using logic to find and fix mistakes to make things work.	- I can give a friend or an adult's simple instructions to complete a task. - I can spot when something goes wrong and come up with a suggestion to fix(e.g., the toy bumps into a block).	- I can break down a simple problem into small steps. - I can test my project to see if it works as intended and suggest or ask for ways to make it better. - I can use logical reasoning to predict the outcome. - I can identify and fix simple errors in my own or a provided project.	- I can break down my project into efficient steps. - I can systematically test my project and use feedback to improve their design and functionality. - I can use logical thinking to trace a project's execution and identify where it needs fixing/improving	- I can design a solution for a project by writing clear, precise instructions (algorithms) using control structures. - I can evaluate the efficiency and suitability of my project design and refine it based on testing and feedback. - I can think systematically to understand how different components of a project interact.
 **Creative Designers** A creative designer is someone who uses technology to share ideas, make things that look good and work well, and improve their work by listening to feedback.	- I can talk about what I have created and what I like best about it - I can try out a new app or tool with the help of an adult to see what it does.	- I can create a digital project that has a clear purpose and audience - I can evaluate my finished work by checking it meets the initial goal. - I can select and use the most appropriate tool to achieve a specific task	- I can make effective design decisions to ensure my project meets its purpose. (e.g., layout, colour, font) to make my work clear and attractive. - I can evaluate my own and others' digital creations, suggesting specific improvements. - I can independently explore a new software tool and work out how to use its main features. - I can use digital tools to design solutions for a familiar problem.	- I can carry out a detailed design process, using multiple digital tools to ensure my project is clear and effective. - I can systematically test and review my solution against the original brief and make iterative improvements. - I can use digital tools to create an innovative solution to a real-world problem, clearly articulating the user needs it addresses.
 **Resilient Explorers** A resilient explorer is someone who is brave enough to try new technology, keeps going when things are tricky, and learns from mistakes to solve problems.	- I can use a new device or app when an adult shows me how. - I can explore the different functions of a familiar device (e.g., turning on the camera, playing a sound). - I can keep trying even if a task or activity is tricky.	- I can try out a new program or tool on my own before asking for help. - I can show a friend how to use a technology I already know. - I understand that mistakes are opportunities to learn, and I can persevere to find a solution.	- I can independently investigate the features of unfamiliar software or devices. - I can connect a new program to my existing knowledge to speed up my learning. - I can adapt my plan or design when my first attempt fails, showing resilience.	- I can take the initiative to research and learn new programming languages or software features for a specific project. - I can justify my choice of technology based on its functionality and efficiency. - I can use online resources (with guidance) to troubleshoot technical issues. - I can manage my own feelings when faced with a significant technical challenge and use a structured approach to persevere.