



Benjamin Adlard Primary School **Key Knowledge Progression Document (KKP)**

Curriculum Rationale

At Benjamin Adlard Primary School, our Computing curriculum ensures pupils become confident, thoughtful and responsible users of technology. We want children not only to use digital tools, but to understand, question and shape the digital world around them.

Our curriculum builds from Nursery to Year 6 in a carefully sequenced way, so pupils know more, remember more and can do more in Computing.

Computing in the Early Years (Development Matters & Birth to 5 Matters)

Computing foundations begin in the EYFS, not as a separate subject, but through Development Matters and Birth to 5 Matters, particularly in:

Understanding the World

- Children explore how technology is used at home, in school and in the community.
- Children notice that digital devices respond to their actions (cause and effect).

Expressive Arts and Design

- Children use digital tools (e.g. drawing apps, cameras) to create and communicate ideas.

Early Mathematical & Thinking Skills

- Children spot and copy simple patterns, follow simple instructions and begin to sequence actions – all early foundations of algorithmic thinking.

In Nursery and Reception, children:

- use interactive whiteboards, tablets, cameras and simple robots with support
- begin to follow and give simple instructions to control devices
- talk about using technology carefully and safely, including sharing, taking turns and asking an adult for help

This prepares them for Year 1, where algorithms, programs, data and online safety are made more explicit.

How Knowledge is Structured in Computing

To keep learning clear and manageable, we organise Computing knowledge as Substantive Knowledge, and then break this down further into Sticky and Fingertip knowledge.

Substantive Knowledge

This is the factual and conceptual knowledge that helps pupils understand art as a discipline. It is organised as:

Crucially, in our planning all substantive knowledge is categorised as either:

- Sticky (must be remembered long term), or
- Fingertip (used when needed, but not essential to retain forever).

This means substantive knowledge is already broken down into smaller “sticky” and “fingertip” chunks, so teachers know exactly what pupils must keep in long-term memory and what they can look up or relearn quickly.

Examples of substantive knowledge:

- knowing what a command, algorithm or sprite is
- knowing that a loop repeats actions
- knowing that personal information should not be shared online

Sticky Knowledge

Sticky knowledge is the non-negotiable core that pupils are expected to retain and use in future years. It is rehearsed, revisited and checked.

Examples of sticky knowledge in Computing:

- An algorithm is a clear, ordered set of instructions.
- A program is a set of commands a computer can run.
- A password protects information and should be kept private.
- Online information can be true, false, biased or misleading, so it must be checked.

Sticky knowledge underpins progression; without it, later content (e.g. selection, variables) would not make sense.

Fingertip Knowledge

Fingertip knowledge is knowledge that pupils do not need to store permanently, but should be able to find and use when needed.

It is still important, but it is not assessed as long-term recall.

Examples:

- how to change brush size or font colour in a particular app
- how to add a background in Scratch

- where the crop tool is in a photo editor

Teachers signpost fingertip knowledge and model how to access it, but do not overload pupils' memory with details that do not need to be permanent. Some fingertip knowledge later becomes sticky if it is essential for future learning.

Declarative, Procedural and Disciplinary Knowledge

Declarative Knowledge –

knowing that...

This is factual and conceptual knowledge about Computing.

Examples:

- A sprite is an on-screen object that performs actions.
- A database stores, organises and retrieves information.
- A network is a group of connected devices that can share data.

Procedural Knowledge –

knowing how...

This is knowing how to do things in Computing.

Examples:

- how to debug a simple program
- how to refine a search using key words and filters
- how to capture and edit a digital photograph
- how to use loops or selection in a program

Declarative and procedural knowledge are taught together; pupils need both to be effective digital learners.

Disciplinary Knowledge –

thinking like a computer scientist

Disciplinary knowledge is about the ways of thinking and working in Computing, including:

- Decomposition – breaking a task into smaller steps.

- Abstraction – focusing on the important details and ignoring the rest.
- Pattern recognition – spotting similarities to reuse solutions.
- Debugging and iteration – testing, finding errors and improving.
- Critical evaluation – questioning reliability, bias and purpose of digital content.

This helps pupils behave like problem-solvers and creators, not just users of apps.

Online Safety and Digital Citizenship

Online Safety is not a one-off lesson; it is threaded through the Computing curriculum and wider school life, aligned with:

- Keeping Children Safe in Education (KCSIE)
- Project Evolve
- Our school's Safeguarding and PSHE policies

Pupils learn to:

- protect personal information and understand what is private
- recognise and respond to worrying or unsafe content or contact
- understand online bullying, reporting routes and support
- consider how online actions affect others
- recognise persuasion, advertising, scams, misinformation and disinformation
- manage screen time, wellbeing and digital balance
- understand copyright, ownership and permission for digital content

By Year 6, pupils understand that online actions have real-world consequences and know how to act safely and respectfully.

Ambition and Alignment with the National Curriculum

Our Computing curriculum fully meets the requirements of the National Curriculum at Key Stage 1 and 2, and goes deliberately beyond them in several areas.

Alignment

Pupils:

- Understand and apply the fundamental principles of computer science (algorithms, logic, data).
- Can analyse problems and design, write and debug programs.
- Use information technology to create content with purpose and precision.
- Become safe, respectful and responsible digital citizens.

Ambition Beyond the National Curriculum

We intentionally extend learning beyond statutory expectations. For example:






- In Computer Science:
 - Pupils use microcontrollers and physical computing (e.g. Crumble/Micro:bit) in Y5–6.
 - Pupils work with variables, selection, conditions and Boolean logic in upper KS2.
 - Pupils are introduced to text-based programming (e.g. Logo/Python) in KS2.
- In Data and Information:
 - Pupils create and use branching databases (Y4).
 - Pupils explore flat-file databases with multiple fields and criteria (Y5).
 - Pupils use spreadsheets and formulae for modelling and problem-solving (Y6).
 - Pupils learn about data packets and how information moves across networks (Y6).
- In Digital Literacy & Media:
 - Pupils create animations, films, audio mixes and page layouts with a clear audience and purpose.
 - Pupils are taught to critically evaluate digital content, including early conversations about AI tools.
- In Online Safety:
 - Pupils learn about online influence, algorithms, targeted advertising and persuasive design.

- Pupils develop a strong understanding of digital footprints, reputation, consent and copyright.
- Pupils are taught how to recognise and respond to fake news, scams and online manipulation.

This ambition ensures pupils leave primary school with secure foundations for KS3 and for life in a digital world.

Key Concepts

Through collaboration with subject leaders and subject specialists across our secondary schools, each subject has identified key concepts (big ideas) for their subject. These key concepts are the skills and knowledge essential to pupils achieving and exceeding expected standards in that specific subject. Key concepts are subject specific and build progressively as pupils move through the school. When pupils encounter a key concept, they will revisit other topics where they learnt about the same concept to enable them to make connections between different learning and build the schema they need.

Computing				
				
Programming	Data and Information	Computer Systems & Networks	Creating Media	Operating devices / Searching and selecting information / Using devices safely and responsibly
Computer Science		Information Technology		Digital Literacy

Early Years Framework		
Strand	Early Learning Goal Managing Self	Early Learning Goal Creating with Materials
Early Years	<ul style="list-style-type: none"> Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. Explain the reasons for rules, know right from wrong and try to behave accordingly 	<ul style="list-style-type: none"> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
National Curriculum Subject Content		
Key Stage 1	<ul style="list-style-type: none"> understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. 	
Key Stage 2	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact 	

Key concepts (Big Ideas) in **COMPUTING**

Pupils will develop their knowledge of computing through the three strands of **computer science**, **information technology** and **digital literacy**. The computing curriculum will equip pupils with the knowledge to become creators of digital technologies and digital artefacts.

COMPUTER SCIENCE: This focuses on programming & algorithms and data & information. This will provide pupils with the foundational knowledge needed to understand the rest of the curriculum.

Programming



Pupils will learn how to interpret, create and evaluate algorithms. They will be taught to program to accomplish specific goals and to detect and correct errors. Pupils will implement algorithms as programs on digital devices, working with various forms of input and output. They will use sequence, selection and repetition in programs.

Data and information



Pupils will learn how to collect, analyse, evaluate and present data and information.

INFORMATION TECHNOLOGY: Studying this aspect will give children the knowledge of how computers are used in society.

Computer systems and networks



Pupils will learn about computer systems, networks and how they are used. They will learn about the opportunities for communication and collaboration offered by networks and how to use these services safely and respectfully. They will also learn about the internet and different types of hardware and software.


Creating media



Pupils will learn about the design and development of digital media in different forms. They will learn how to collaborate online, evaluate online content and how to communicate, create and present content in a respectful and responsible way.

DIGITAL LITERACY: This is woven through the key concepts above, ensuring pupils know how to **operate devices**, how to **search and select information**, and how to use digital devices **safely and responsibly**.



Knowledge and skills sequencing			COMPUTING					
	Nursery	Reception	Y1	Y2	Y3	Y4	Y5	Y6
<p>Programming Substantive knowledge</p> <p>Pupils will know....</p> 	<p>An instruction tells someone what to do.</p> <p>Simple direction words help movement (e.g., forward, back).</p> <p>They can follow a simple set of spoken steps (an oral algorithm).</p>	<p>Instructions can be given to control movement.</p> <p>A route can be followed in order.</p> <p>A robot (e.g., a Beebot) follows programmed instructions.</p> <p>Arrows and direction words show how to move (including left and right).</p> <p>Personal information exists and should only be shared with trusted adults.</p> <p>The internet can be used for communication.</p>	<p>A command tells a device or program what to do.</p> <p>A program is a set of commands run by a computer.</p> <p>Commands can be joined to make a sequence.</p> <p>Sequences always start from the same place to be accurate.</p> <p>The outcome of a command or short sequence can be predicted.</p> <p>Debugging means finding and fixing errors in a sequence.</p> <p>A sprite is an object controlled on screen using commands.</p> <p>Some blocks/commands use values (numbers) which change outcomes.</p> <p>A project can include more than one sprite or object</p>	<p>An algorithm is a set of ordered steps to achieve a goal.</p> <p>Algorithms can be turned into programs to control a robot or sprite.</p> <p>Different algorithms may use the same commands but produce different outcomes.</p> <p>Predictions can be compared with what actually happens in a program.</p> <p>Programs can be tested and debugged in parts and as a whole.</p> <p>Designs can be used to choose objects, backgrounds and sprites for a project.</p>	<p>A sequence is a series of connected commands that run in order.</p> <p>Objects in a program respond exactly to the code given.</p> <p>Commands are represented as blocks in block-based programming.</p> <p>Events (such as key presses) can be used to trigger actions.</p> <p>Programs can include multiple sequences to meet a design.</p> <p>Code can be modified to change outcomes or improve a project.</p> <p>Digital objects (backgrounds, sprites, sounds) have attributes.</p>	<p>Computers can be programmed using typed commands (text-based language).</p> <p>A loop repeats a set of commands.</p> <p>A count-controlled loop repeats for a set number of times.</p> <p>A procedure is a reusable set of instructions.</p> <p>Changing a value inside a loop changes the repeated outcome.</p> <p>Repetition is useful in programs and real-world systems.</p> <p>Some programming languages run more than one process at once.</p>	<p>A condition is something that can be true or false.</p> <p>Selection (if / then / else) chooses different outcomes based on a condition.</p> <p>Program flow can branch in different directions.</p> <p>A microcontroller can control lights, motors and sensors.</p> <p>Input devices and output devices can be programmed and connected.</p> <p>Conditions can be checked repeatedly using loops.</p> <p>Programs can be shared and improved through testing and debugging.</p>	<p>A variable is a named placeholder that stores a value which can change.</p> <p>Variables can store numbers or text and affect outcomes.</p> <p>Selection can use variables to control program flow.</p> <p>Events can set, update and use variables.</p> <p>Programs may require multiple conditions (else if) in a specific order.</p> <p>Algorithms, flow design and code must align to achieve a project goal.</p> <p>Programs can be transferred to devices and tested in different environments.</p>

Programming Sticky knowledge



Procedural knowledge

Declarative knowledge

Know how to follow simple oral algorithm.

Know some simple directional language to direct myself and others

Know how to give instructions.

Know how to make predictions.

Know how to follow a route.

Know how to program a beebot.

Know simple examples of personal information (e.g. name, birthday, address)

Know who to share personal information with.

Know the internet can be used to communicate.

Know that arrows show directions.

Know left and right.

Know that a beebot is a robot.

Know a command tells a computer what to do.

Know a program is a set of commands a computer runs.

Know commands can be joined to make a sequence.

Know debugging means finding and fixing errors.

Know a sprite is an on-screen object that can be controlled.

Know some commands use values (numbers) to change movement or speed.

Know how to give and follow directions (forwards, backwards, left, right).

Know how to create and run a simple sequence of commands.

Know how to change a value to change how a sprite or robot moves.

Know how to test and debug a sequence. Know how to add or remove a sprite and give it commands.

Know a sequence has a clear starting point.

Know a program must be started to run.

Know algorithms help decide the actions a sprite or robot will take.

Know changing the order or values in a sequence changes the outcome.

Know how to create an algorithm to meet a goal.

Know how to use an algorithm to create a program for a floor robot or sprite.

Know how to build sequences of blocks to match a design.

Know how to test and debug parts of a program and the whole program.

Know how to predict and compare outcomes of different sequences.

Know how to change a sequence to produce a different outcome.

Know how to select blocks or commands that meet the design requirements.

Know a sprite is a character or object in Scratch.

Know a sequence is an ordered set of commands.

Know blocks can be matched to outcomes.

Know the names of objects I need for a project (sprites, backdrops).

Know a word that describes an on-screen action (e.g., move, jump, turn).

Know how to create a program that follows a design.

Know how to start a program in different ways (e.g., flag, key press, event block). Know how to choose and add a sprite in Scratch.

Know how to create and build sequences of commands to control a sprite's movement.

Know how to implement an algorithm as code. Know how to match code to an outcome and explain my choices.

Know how to modify a program using a design.

Know a count-controlled loop repeats a set number of times.

Know an infinite loop repeats until stopped.

Know a procedure is a section of code a computer can reuse.

Know a computer can repeatedly call a procedure.

Know a snippet of code produces a predictable outcome when understood.

Know how to write and test algorithms and turn them into code.

Know how to create and modify code snippets for a given purpose.

Know how to identify patterns in code and reuse existing snippets.

Know how to use count-controlled loops and choose which values to change.

Know how to use and modify procedures in a program.

Know how to design a program that uses repetition and follows a planned design.

Know how to debug and refine a program to improve its outcome.

Know a program can have different outcomes depending on a condition.

Know if... then... else creates two possible paths in a program.

Know selection is used when an action should happen only if a condition is met.

Know testing and debugging help improve a program that uses selection.

Know how to identify conditions and outcomes in a program.

Know how to design sequences for the output devices a program will control. Know how to use selection to direct program flow (if... then... / if... then... else...).

Know how to modify a condition to change a program's behaviour.

Know how to use selection in a loop to repeatedly check a condition.

Know how to create a program with different outcomes using selection.

Know how to implement an

Know a variable's value can change during a program.

Know reading a variable does not change its value.

Know the order of conditions in if / else if / else affects the outcome.

Know events can be used to set or update variables.

Know how to design algorithms and program flow for a project.

Know how to create a program based on a design.

Know how to use selection with operands to determine program flow.



Know how to use and change variables to achieve a desired outcome.

Know how to modify a program to create a different outcome or extend a game.

Know how to test and debug a program using different approaches.

Know how to apply programming knowledge in a new environment.

					<p>Know how to combine parts of a program and run it.</p>	<p>Know how to test a program against a design and identify improvements.</p> <p>Know how to justify design choices and evaluate my project.</p> <p>Know how to choose which keys to use for actions and explain my decisions.</p>	<p>Know how to explain and evaluate the choices made in a project.</p>	<p>algorithm containing selection.</p> <p>Know how to test and debug a project using selection.</p> <p>Know how to describe and evaluate what a project will do and how it could be improved.</p>	<p>Know how to evaluate and suggest improvements to a game.</p> <p>Know how to share my game with others.</p>
<p>Programming Fingertip knowledge</p>  <p>Procedural knowledge</p> <p>Declarative knowledge</p>			<p>Know how to predict the outcome of a command or short sequence.</p> <p>Know how to follow and compare movement instructions (forwards/backwards).</p> <p>Know how to choose and order commands in a sequence.</p> <p>Know how to select sprites and artwork that match a design. Know how to identify different solutions to a task.</p> <p>Know how to use and compare different programming tools.</p>	<p>Know how to follow and give clear instructions in a sequence.</p> <p>Know how to test and improve my mat or project so it is usable.</p> <p>Know how to identify and explain different possible routes or solutions.</p> <p>Know how to match sequences that lead to the same outcome.</p> <p>Know how to choose characters, images and backgrounds that suit my design.</p>	<p>Know that Scratch objects have attributes that can be changed.</p> <p>Know how to combine and sequence sound commands.</p> <p>Know how to choose a suitable character size for a maze.</p> <p>Know to use real-world examples to support design choices.</p> <p>Know how to use a programming extension and additional feature blocks.</p> <p>Know how to choose suitable keys to control added features.</p>	<p>Know how to use a template to plan what my program should do.</p> <p>Know that everyday tasks can be broken into chunks of instructions, including repetition.</p> <p>Know examples of repetition in real-world actions.</p> <p>Know that some programming languages can run more than one process at the same time.</p>	<p>Know how to build a circuit and connect a microcontroller to a computer.</p> <p>Know how to connect and control output devices (e.g., LEDs, motors) using a program.</p> <p>Know how to program a microcontroller to respond to input.</p> <p>Know how to plan a project using a detailed drawing or design format.</p> <p>Know how to write an algorithm to outline and control the behaviour of my project.</p> <p>Know how to identify setup code and extend a program.</p> <p>Know how to share my program with others.</p>	<p>Know how to test a program on an emulator and transfer it to a controllable device.</p> <p>Know how to identify conditions and examples of changing information (variables) in the real world.</p> <p>Know that a variable is a placeholder in memory for a value and that its change can be defined.</p> <p>Know how to experiment with different physical inputs.</p> <p>Know how to choose and create artwork for my project and explain my design choices.</p>	

	<p>Programming Disciplinary knowledge</p> 	<p>Tries simple instructions and notices when things do or don't work.</p> <p>Begins to spot patterns in actions (e.g., move → stop → move).</p>	<p>Gives simple step-by-step instructions and adjusts if the outcome is not correct.</p> <p>Notifies that instructions must be in the right order to work.</p>	<p>Predicts the outcome of short sequences and checks predictions by testing.</p> <p>Begins to debug by changing a command when something goes wrong.</p>	<p>Creates and tests algorithms for simple goals, improving them when needed.</p> <p>Explains what went wrong in a sequence and how it was fixed.</p>	<p>Uses logical reasoning to make predictions about programs.</p> <p>Decomposes tasks into smaller steps to design sequences of commands.</p>	<p>Uses repetition and patterns in code to refine and improve efficiency.</p> <p>Evaluates where a program is likely to go wrong and selects appropriate debugging strategies.</p>	<p>Uses selection (if/then/else) to control the flow of a program and compares different solutions.</p> <p>Debugs systematically, explaining reasoning and evaluating efficiency.</p>	<p>Plans, designs and evaluates algorithms that include variables and inputs.</p> <p>Chooses between multiple algorithmic approaches, justifying the most efficient or reliable.</p>
		Nursery	Reception	Y1	Y2	Y3	Y4	Y5	Y6
	<p>Data and information Substantive knowledge</p> <p>Pupils will know....</p> 	<p>Some objects share similarities and differences.</p> <p>Simple patterns can be noticed and described.</p>	<p>Objects can be sorted into groups in different ways.</p> <p>Questions can be answered with yes or no.</p> <p>Data can be shown using simple pictures (pictograms).</p> <p>The internet is a place to find information.</p> <p>Some devices can connect to the internet.</p> <p>Technology is used in everyday life (e.g., phones, tablets, computers).</p>	<p>Objects can be grouped by shared properties.</p> <p>Labels are used to identify groups.</p> <p>Groups can be compared using counts.</p> <p>The same set of objects can be grouped in more than one way.</p> <p>Data can be recorded and shared to answer questions.</p>	<p>Data can be collected and organised using tally charts and pictograms.</p> <p>Totals can be compared using terms such as more, less, most and least.</p> <p>Computers can store, present and share data in different formats.</p> <p>Some information should be kept private and not shared online.</p>	<p>Data can be gathered over time and used to answer questions.</p> <p>Sensors are devices that collect data automatically.</p> <p>Data loggers can record and store data at set intervals.</p> <p>Data sets can be viewed and interpreted using computer software.</p>	<p>Yes/no questions can be used to classify objects.</p> <p>Branching databases sort information by attributes.</p> <p>Questions must be chosen carefully so groups can be separated clearly.</p> <p>Branching databases can be used to identify and compare objects.</p>	<p>Information can be stored and organised in a database using fields and records.</p> <p>Data can be sorted, grouped and filtered to answer more complex questions.</p> <p>Charts and graphs help us visualise and compare data.</p> <p>Digital tools allow us to refine searches and represent data efficiently.</p>	<p>Spreadsheets store data in cells, rows and columns.</p> <p>Data types and headings help organise information clearly.</p> <p>Formulas can be used to calculate and change data automatically.</p> <p>Graphs and tables present data in ways that help us interpret results.</p> <p>Changing inputs changes the outputs produced by formulas.</p>

Data and information
Sticky knowledge



Procedural knowledge

Declarative knowledge

Know and spot simple patterns.

Know to sort objects into groups.

Know questions can be answered using yes or not.

Know different ways things can be sorted.

Know data can match a simple pictogram.

Know we can find information on the internet.

Know which devices will allow us to go on the internet.

Know different types of computer hardware.

Know everyday uses of technology.

Know different ways that I can put things on the internet.

Know how to match objects to groups.

Know how to identify the label for a group of objects.

Know how to count objects.

Know how to group objects.

Know how to count a group of objects.

Know how to describe an object.

Know how to describe a property of an object.

Know how to find objects with similar properties.

Know how to group similar objects.

Know how to count how many objects share a property.

Know how to choose how to group objects.

Know how to describe groups of objects.

Know how to record how many objects are in a group.

Know how to enter data onto a computer

.Know how to use a computer to view data in different formats.

Know how to answer more than / less than / most / least questions about data.

Know how to choose a suitable attribute to compare objects or people.

Know how to collect the data needed for a task.

Know how to create a pictogram.

Know how to find out what a pictogram shows.

Know how to use a computer program to present information in different ways.

Know how to share what has been found out using a computer.

Know that some information should not be shared.

Know how to choose a data set to answer a question.

Know how to suggest questions that can be answered using a data set.

Know how to use a computer to view data in different ways.

Know how to use a computer program to sort data.

Know that data gathered over time can be used to answer questions.

Know data that can be gathered over time.

Know how to talk about the data that has been captured.

Know how to propose a question that can be answered using logged data.

Know how to draw conclusions from collected data.

Know the benefits of using a data logger.

Know how to create two groups of objects separated by one attribute.

Know how to select an attribute to separate objects into groups.

Know how to create a group of objects within an existing group.

Know how to compare two branching database structures.

Know and explain that questions need to be ordered carefully to split objects into similarly sized groups.

Know how information can be recorded.

Know how information can be grouped.

Know how to group information to answer questions.

Know how to combine grouping and sorting to answer more specific questions.

Know how to refine a search in a real-world context.

Know which field to sort data by to answer a question.

Know which field and value are needed to answer a question.

Know how to use an appropriate chart to compare data visually.

Know how to refine a chart by selecting a filter.

Know the benefits of using a computer to create graphs.

Know how to ask questions that need more than one field to answer.

Know how to answer questions using an existing data set.

Know how to apply a number format to a cell.

Know how to build a data set in a spreadsheet.

Know how to construct a formula in a spreadsheet.

Know how to create a formula that uses a range of cells.

Know how to apply a formula to multiple cells by duplicating it.

Know how to use a spreadsheet to answer questions.

Know how to produce a graph.



Know how to use a graph to show the answer to questions.

Know how to ask questions that can be answered using data.

Know what an item of data is.

Know the relevance of a cell's data type.

				<p>Know how to compare groups of objects.</p> <p>Know and identify how objects have been grouped. Know labels are used to identify a group.</p>					<p>Know that changing inputs changes outputs.</p> <p>Know that data can be calculated using different operations.</p> <p>Know how to use a formula to calculate the data needed to answer questions.</p>
<p>Data and information Fingertip knowledge</p>  <p>Procedural knowledge</p> <p>Declarative knowledge</p>			<p>Know how to describe objects using labels.</p> <p>Know how to group objects in more than one way.</p> <p>Know how to record and share what I have found.</p> <p>Know how to decide how to group objects to answer a question.</p>	<p>Know how to tally objects using a common attribute and organise the data in a tally chart.</p> <p>Know how to represent tally counts as totals and compare those totals.</p> <p>Know how to use a tally chart to create a pictogram.</p> <p>Know how to create a pictogram to show objects by an attribute and answer questions about the data.</p> <p>Know how to draw simple conclusions from a pictogram.</p>	<p>Know that sensors are input devices.</p> <p>Know how to use data from a sensor to answer a given question</p> <p>Know that data from sensors can be recorded.</p> <p>Know a suitable place to collect data.</p> <p>Know the intervals used to collect data.</p> <p>Know how to import a data set.</p> <p>Know to plan how to collect data using a data logger.</p>	<p>Know how to make and investigate yes/no questions about a set of objects.</p> <p>Know how to group and arrange objects in a branching (tree) structure using yes/no questions and given attributes.</p> <p>Know how to create and use a branching database to answer questions and explain what it shows.</p> <p>Know how to select a theme with a variety of objects for my branching database.</p> <p>Know how to compare two different ways of presenting information.</p>	<p>Know how to create multiple questions about the same field.</p> <p>Know how to order, sort, and group my data cards.</p> <p>Know how to navigate a flat-file database to compare different views of information.</p> <p>Know what a 'field' and a 'record' is in a database.</p> <p>Know how 'AND' and 'OR' can be used to refine data selection</p> <p>Know to choose multiple criteria to answer a given question.</p>	<p>Know and explain the relevance of data headings.</p> <p>Know and explain why data should be organised.</p> <p>Know when to use a table or graph</p>	

	<p>Data and information Disciplinary knowledge</p> 	<p>Notices simple similarities and differences when objects are grouped.</p>	<p>Sorts objects and begins to describe groups using simple language.</p> <p>Recognises that information can answer simple questions.</p>	<p>Chooses ways to group objects to answer a question and describes findings.</p>	<p>Collects data, represents it using tallies/pictograms and draws simple conclusions from it.</p>	<p>Suggests questions data could answer and uses digital tools to represent patterns.</p> <p>Begins to interpret data over time (data logging).</p>	<p>Designs branching databases and explains how yes/no questions sort information.</p>	<p>Selects criteria and uses database searches to refine information with increasing accuracy.</p>	<p>Designs and uses spreadsheets and formulae to model, calculate and answer questions.</p> <p>Evaluates validity and reliability of data before drawing conclusions.</p>
		Nursery	Reception	Y1	Y2	Y3	Y4	Y5	Y6
	<p>Computer systems and networks</p> <p>Pupils will know....</p> <p>Substantive knowledge</p> 	<p>Some digital devices are used at home and in school (e.g., tablet, interactive whiteboard).</p> <p>Digital devices have controls that make them work.</p> <p>Screens can be touched to make choices or interact with content.</p>	<p>Computers can be used for typing, drawing, playing, and finding information.</p> <p>A mouse or trackpad can be used to move and select objects on a screen.</p> <p>Logging in keeps information private and passwords should not be shared.</p> <p>The internet can be used to communicate with people we know.</p>	<p>Technology helps us in school and at home (e.g., printer, camera, tablet, laptop).</p> <p>A computer has key parts (keyboard, mouse, screen).</p> <p>Digital work can be created, saved, and opened again.</p> <p>Rules help keep us safe and healthy when using technology.</p>	<p>A computer is a type of information technology.</p> <p>Information technology is used in places like shops, homes, and schools.</p> <p>Digital information, including photos, must be shared safely and with permission.</p> <p>Technology can help people, but some online content may not be suitable.</p>	<p>Digital devices have inputs, processing, and outputs.</p> <p>A network is made of connected devices that can share information.</p> <p>Switches, servers, and wireless access points help devices connect.</p> <p>Devices in a network can send messages and data to each other.</p>	<p>The internet connects many networks around the world.</p> <p>The World Wide Web contains websites and webpages.</p> <p>Websites are created by people and have owners.</p> <p>Not all online information is reliable, honest, or safe to share.</p>	<p>Search engines follow rules (algorithms) to order results.</p> <p>Search results can be influenced by keywords and filters.</p> <p>Web crawlers gather and index information from websites.</p> <p>Computer systems are made of multiple parts that work together.</p>	<p>Data travels across networks using agreed rules and addressing systems.</p> <p>The internet allows sharing of text, images, sound, and video.</p> <p>Online collaboration can be public or private.</p> <p>Communication online is not always secure or private, and sharing requires careful choices.</p> <p>Data sent across the internet is broken into packets before transmission.</p>

Computer systems and networks

Sticky knowledge



Procedural knowledge

Declarative knowledge

Know how to use an interactive whiteboard for simple interactive games and paint programme.

Know how to touch a screen, selecting intended options.

Know how to turn an Ipad.

Know different ways some digital devices work.

Know the names of some digital devices at home and school.

Know that devices have controls which make them work

Know how to move a mouse.

Know how to click a mouse.

Know how to drag objects moving a mouse.

Know different uses of a computer.

Know what logging in and logging out means.

Know the importance of passwords.

Know we can find information on the internet.

Know examples of how I might use technology to communicate with people I know e.g. phone, email.

Know examples of technology in the classroom.

Know how to switch on and log into a computer.

Know how to use a mouse to click and drag.

Know how to use a mouse to open a program.

Know how to click and drag to make objects on a screen.

Know how to use a mouse to create a picture.

Know how to save my work to a file.

Know how to type my name on a computer.

Know how to open my work from a file.

Know how to use the arrow keys to move the cursor.

Know how to use delete and backspace to get rid of letters.

Know how to open a file.

Know how to move and resize images.

Know how information technology is used in a shop.

Know there are examples of different computers.

Know and explain the purpose of information technology in the home.

Know and talk about uses of information technology.

Know and explain how information technology helps people.

Know different uses of information technology.

Know not to use a device late at night.

Know to watch age-appropriate videos.

Know to play age-appropriate games.

Know to ask permission before

Know how to classify input and output devices.

Know how to recognise different connections.

Know how messages are passed through multiple connections.

Know that digital devices accept inputs.

Know that digital devices produce outputs.

Know that a computer network is made up of several devices.

Know and can demonstrate how information can be passed between devices.

Know and can identify the benefits of computer networks.

Know how to access websites on the WWW.

Know how to create media which can be found on websites.

Know that information is shared across the internet.

Know why a network needs protecting.

Know that the internet allows us to view the World Wide Web.

Know that the World Wide Web is the part of the internet that contains websites and web pages.

Know the types of media that can be shared on the World Wide Web (WWW)

Know that I can add content to the WWW.

Know that new content can be created online.

Know that there are rules to protect content.

Know that not everything on the World Wide Web is true.

Know why some information I find

Know how to complete a web search to find specific information.

Know that a search engine follows rules to rank relevant pages.

Know some of the ways that search results can be influenced.

Know some of the criteria that a search engine checks to decide on the order of results.

Know that search results are ordered.

Know the benefits of a given computer system.

Know how to access shared files stored online.

Know how to send information over the internet in different ways.

Know that the internet allows different media to be shared.

Know different ways of working online together.

Know that working together online can be public or private.

Know how the internet enables effective collaboration.



Know the different ways in which people communicate.

Know that there are a variety of ways of communicating over the internet.



Know when I should and should not share.

Know that communication on the internet may not be private.

					<p>taking photographs.</p> <p>Know photos should only be taken of those you have permission of.</p>		<p>online may not be honest, accurate, or legal.</p> <p>Know why I need to think carefully before I share or reshare content.</p>		
<p>Computer systems and networks Fingertip knowledge</p>  <p>Procedural knowledge</p> <p>Declarative knowledge</p>		<p>Know what a keyboard is for.</p> <p>Know that a computer has different parts</p>	<p>Know technology is something that helps us.</p> <p>Know how this technology helps us.</p> <p>Know the names of the main parts of a computer.</p> <p>Know what a keyboard is for.</p> <p>Know how we benefit from these rules.</p>	<p>Know and describe some uses of computers.</p> <p>Know that a computer is a part of information technology.</p> <p>Know how to find examples of information technology.</p> <p>Know and compare types of information technology.</p> <p>Know how information technology is used in a shop.</p>	<p>Know that a process is a set of steps to follow and show.</p> <p>Know that digital devices are designed for different purposes and activities.</p> <p>Know similarities and differences between digital and non-digital tools.</p> <p>Know that a switch connects devices so they can share information.</p> <p>Know the role of a switch, server, and wireless access point in a network.</p> <p>Know how devices are connected in a network and identify networked devices around me.</p>	<p>Know the internet is a network of networks.</p> <p>Know the different networked devices and how they connect.</p> <p>Know where websites are stored when uploaded to the WWW</p> <p>Know that websites and their content are created by people</p> <p>Know who owns the content on websites</p>	<p>Know that systems are built using several parts.</p> <p>Know tasks that are managed by computer systems.</p> <p>Know the human elements of a computer system.</p> <p>Know what Boolean operators are and how they can help refine a search.</p> <p>Know the role of web crawlers in creating an index.</p> <p>Know some of the limitations of search engines.</p> <p>Know how search engines make money</p>	<p>Know that data is transferred using agreed methods (protocols).</p> <p>Know that internet devices have unique addresses used to access websites.</p> <p>Know that data is sent across networks in packets.</p> <p>Know the main parts of a packet (header and content/payload).</p> <p>Know to choose communication methods that suit different purposes.</p> <p>Know how to compare ways of communicating online (e.g., email, messaging, video calls).</p>	

	<p>Computer systems and networks Disciplinary knowledge</p> 	<p>Recognises common digital devices and that they are used for different purposes.</p>	<p>Understands that information can be found using technology and that devices connect to the internet.</p>	<p>Identifies parts of a computer and explains simple rules for safe and responsible use.</p>	<p>Explains how information technology helps in everyday life and recognises risks in different contexts.</p>	<p>Understands that devices in a network can share information and identifies input/output processes.</p>	<p>Explains that the internet is a network of networks and understands what the World Wide Web is and is not.</p>	<p>Understands how search engines index and rank information and explains limits and biases in results.</p>	<p>Explains how data travels across networks in packets and evaluates communication tools for purpose, privacy and security.</p>
		<p>Nursery</p>	<p>Reception</p>	<p>Y1</p>	<p>Y2</p>	<p>Y3</p>	<p>Y4</p>	<p>Y5</p>	<p>Y6</p>
	<p>Creating media Substantive knowledge</p> <p>Pupils will know....</p> 	<p>A photo shows what a camera is pointed at.</p>	<p>A digital photo or video can be altered (e.g., cropped or filtered).</p> <p>Simple digital editing changes what the media looks like.</p>	<p>Different paint tools make different types of marks.</p> <p>Shapes, lines, colours and brush sizes can be changed.</p> <p>Digital artwork can be created in the style of an artist.</p> <p>Painting on a computer is similar to and different from painting on paper.</p>	<p>A photograph can be taken in different orientations (portrait/landscape).</p> <p>Light affects the quality of a photograph.</p> <p>Images can be changed and may not always be real.</p> <p>Music can be created digitally using patterns of notes or sounds.</p>	<p>An animation is made from a sequence of images (frames) with small changes.</p> <p>A storyboard helps plan a sequence of scenes, characters and actions.</p> <p>Text and images can be combined for a purpose (e.g., poster, presentation).</p> <p>Fonts, colours and sizes can change the meaning or impact of text.</p>	<p>The web contains different types of media (text, images, video, audio).</p> <p>Online content has owners and rules protect people's work.</p> <p>Not all online information is reliable or accurate.</p> <p>Sharing or resharing media can have consequences.</p>	<p>Search engines rank results using rules (algorithms).</p> <p>Results can be refined using keywords and filters (e.g., Boolean tools).</p> <p>Online media can be influenced by adverts, popularity and commercial interests.</p> <p>Computer systems use multiple components to create and share digital work.</p>	<p>Digital files can be stored and accessed online.</p> <p>People can collaborate on shared media, publicly or privately.</p> <p>Communication online is not always secure or private.</p> <p>Data sent online is broken into packets and uses addressing systems.</p>

INFORMATION TECHNOLOGY	<p>Creating media Sticky knowledge</p>  <p>Procedural knowledge</p> <p>Declarative knowledge</p>	<p>Know how to find the camera app on an Ipad.</p> <p>Know how to take a simple video or photograph.</p>	<p>Know how to manipulate a simple video or photograph.</p>	<p>Know how to draw lines on a screen and explain which tools were used.</p> <p>Know how to use paint tools to draw pictures</p> <p>Know how to use the shape tool and the line tools</p> <p>Know how to make marks with the square and line tools</p> <p>Know how to use the shape and line tools effectively</p> <p>Know how to change the colour and brush size.</p>	<p>Know how to take clear photos (portrait/landscape).</p> <p>Know which devices take photos.</p> <p>Know that light affects photos and why pictures may be unclear.</p> <p>Know that images can be changed and spot edited/real photos.</p> <p>Know basic photography skills to capture a good photo.</p>	<p>Know how to plan a story using settings, characters, events.</p> <p>Know how to create and review a storyboard/frames.</p> <p>Know how to add and edit text and images.</p> <p>Know that small frame changes make animation work.</p> <p>Know ways to improve an animation and why media is added.</p>	<p>Know how to record, save, open and edit audio.</p> <p>Know devices, inputs and outputs used for recording.</p> <p>Know that audio can be altered and improved.</p> <p>Know that images can be changed and how to spot fake/edited images.</p> <p>Know positive and negative effects of image editing.</p>	<p>Know how to move, resize, rotate and duplicate objects.</p> <p>Know how to use drawing tools, layers, zoom and shortcuts.</p> <p>Know that objects can be grouped and modified to create new images.</p> <p>Know that alignment tools improve consistency.</p>	<p>Know features of web pages and types of online media.</p> <p>Know what navigation paths are and why they are useful.</p> <p>Know copyright-free images, fair use and content ownership.</p> <p>Know how to select, move, rotate, resize and duplicate 3D objects.</p> <p>Know how to modify 3D objects and position them accurately.</p>
	<p>Creating media Fingertip knowledge</p>  <p>Procedural knowledge</p> <p>Declarative knowledge</p>		<p>Know how to make marks on a screen using tools and colours.</p> <p>Know that pictures can be created in different styles, including in the style of an artist.</p> <p>Know how to use dots/paint tools to create digital art.</p> <p>Know that pictures can be made in different ways and compare computer painting with paper painting.</p>	<p>Know how to take and improve a digital photo.</p> <p>Know that light affects a photograph.</p> <p>Know that photos and sounds can be created and changed on a computer.</p> <p>Know how to create, refine, save and reopen a simple musical pattern.</p>	<p>Know how animation works using small frame changes.</p> <p>Know how to create and improve a stop-frame animation.</p> <p>Know how branching stories/slides work using links and choices.</p> <p>Know how to check and improve digital work.</p>	<p>Know how to plan, record, edit and export a digital audio recording.</p> <p>Know that images can be changed and retouched.</p> <p>Know how to change or combine images for a purpose.</p> <p>Know how to compare edited images with originals and explain changes.</p>	<p>Know how to plan, film, edit and improve a video.</p> <p>Know that camera angles, microphones and techniques affect video quality.</p> <p>Know that vector drawings are made from shapes and layers.</p> <p>Know how to reuse, move, resize and rearrange objects in a vector drawing.</p>	<p>Know that websites are written in HTML and can include different media.</p> <p>Know how to design, create and link web pages using hyperlinks.</p> <p>Know how to evaluate a website's usability on different devices.</p> <p>Know how to plan, build, modify and improve a 3D model made from digital shapes.</p>	

	<p>Creating media Disciplinary knowledge</p> 	<p>Explores simple digital tools and notices differences from real-world tools.</p>	<p>Selects basic media tools with purpose (e.g., colours, shapes, camera use).</p> <p>Talks about choices made when creating digital work.</p>	<p>Chooses digital tools to achieve a desired artistic effect and evaluates whether the outcome matches intention.</p>	<p>Evaluates photographs, identifying what makes them clear or unclear.</p> <p>Improves work by retaking, editing or refining media choices.</p>	<p>Uses storyboards and planning to structure animation or multimedia work.</p> <p>Reviews drafts and makes purposeful improvements to design decisions.</p>	<p>Understands that online content is created by people and must be assessed for accuracy and ownership.</p> <p>Selects appropriate media formats for audience and purpose.</p>	<p>Designs digital content using combinations of media, considering audience and usability.</p> <p>Evaluates digital creations against success criteria and adapts based on feedback.</p>	<p>Uses advanced digital tools to create purposeful, original media.</p> <p>Reflects critically on impact, audience and ethical use of digital content.</p>
		Nursery	Reception	Y1	Y2	Y3	Y4	Y5	Y6
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">DIGITAL LITERACY</p>	 <p>Substantive Knowledge</p> <p>Pupils will know....</p>	<p>Digital devices must be handled carefully.</p> <p>We take turns when using shared technology.</p>	<p>Some personal information should only be shared with trusted adults.</p> <p>People can be unkind online and this can affect feelings.</p> <p>Rules help keep us safe when using technology.</p>	<p>Personal information should not be shared without a trusted adult.</p> <p>Passwords help to keep information private.</p> <p>We can find information online, but some things may be real and some may not be.</p>	<p>People may behave differently online from real life.</p> <p>Online information can be shared widely and last a long time.</p> <p>Bullying can happen online and help should be sought from trusted adults.</p>	<p>People can present different identities online.</p> <p>We must be careful about what we share about ourselves and others.</p> <p>Some online information may be untrue, and we should check with trusted sources.</p>	<p>People can pretend to be others online and may have different motives.</p> <p>Not all online content is accurate, respectful or legal.</p> <p>The things we share can affect others and our reputation.</p>	<p>Online information can be copied, edited, targeted or commercial.</p> <p>Search results and online content may be influenced by advertising or algorithms.</p> <p>A strong password and privacy controls help keep information secure.</p>	<p>Content online can be persuasive, biased, misleading or deliberately false.</p> <p>Online actions have consequences for ourselves and others, including reputation.</p> <p>There are ways to report concerns, manage privacy, and protect wellbeing online.</p>

DIGITAL LITERACY  Sticky knowledge Procedural knowledge Declarative knowledge	Know that care need is needed when using technology Know how to hold a device carefully. Know when to take turns using an ipad with your partner.	Know who they can share personal information with (trusted adults only). Know simple examples of personal information (name, birthday, address). Know they can say no/stop if something makes them sad or worried online/offline. Know that the work they create using technology belongs to them and can be named. Know that people can be unkind online and this can hurt feelings. Know rules help keep them safe when using technology.	Know they must ask a trusted adult before sharing personal information online. Know how to behave kindly online and that online actions can upset others. Know simple ways to find information (e.g., voice search, search engines). Know they may see things online that are real, not real, liked, or disliked. Know they should get help from a trusted adult if something online worries them. Know passwords protect devices and information. Know their digital work belongs to them and should be saved with their name.	Know people may look or behave differently online than offline. Know communication with people they do not know offline may be risky. Know they can give, refuse, or withdraw permission online. Know information online can last a long time and be seen by others. Know what bullying is, how it feels, and how to get help. Know some online information may be untrue, made-up, or private. Know personal information must be kept private (e.g., passwords). Know they must ask permission before taking or sharing photos.	Know what identity means and that people present identity differently online. Know what it means to trust someone online and why trust needs to be careful. Know they should ask a trusted adult if unsure about sharing information online. Know respectful behaviour is important online. Know what online bullying looks like and how to get support. Know the difference between a belief, opinion and fact online. Know spending too much time on technology can have positive and negative effects. Know why some online activities have age restrictions. Know simple strategies for creating and keeping passwords private. Know copying someone's work from the internet without permission is unfair.	Know online identity can be different to offline identity. Know positive and respectful interaction helps shape online reputation. Know people can pretend to be someone else online and why they may do this. Know strategies for staying safe in online social spaces (e.g., livestreams, gaming). Know what online bullying looks like across images, video, text and chat. Know that not all online information is accurate, reliable or true. Know what fake news is and why people create it. Know technology can distract and may need to be limited. Know personal information is never fully private online and may be monitored. Know to check who owns online content before reusing it.	Know online identity can be copied, changed or used to cause harm. Know how to support others online and get help for online bullying. Know how to judge if online content is trustworthy (facts vs opinions, stereotypes, fake news, hoaxes). Know technology affects health and wellbeing and ways to use it safely. Know apps, games and websites may collect information or request payments, and they must check with a trusted adult. Know how to create strong passwords and protect personal information online. Know to consider ownership before reusing online content.	Know how to challenge harmful or inaccurate online content and seek help if worried. Know sharing online can affect reputation and relationships, and private content can spread. Know how to build and protect a positive online reputation and report/record online bullying. Know how search engines and targeted online content influence what people see and believe (persuasion, misinformation, disinformation). Know how to keep safe and well when using technology, manage passwords, apply privacy settings and recognise scams. Know online content and services are governed by rules, including age ratings and terms and conditions.
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Digital Literacy

Fingertip knowledge

Procedural knowledge

Declarative knowledge

<p>Know how to behave online in ways that do not upset others and can give examples.</p>	<p>Know to use simple keywords when searching online.</p>	<p>Know how to search for information about others online.</p>	<p>Know some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online.</p>	<p>Know examples of technology-specific forms of communication (e.g. emojis, memes and GIFs).</p>	<p>Know the use of search tools to find and access online content which can be reused by others.</p>
<p>Know simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching.</p>	<p>Know how to navigate a webpage using basic features (home, back/forward, links, tabs).</p>	<p>Know what autocomplete is and how to choose the best suggestion.</p>	<p>Know some simple examples of content which I must not use without permission from the owner, e.g. videos, music, images.</p>	<p>Know how to search for information about an individual online and summarise the information found.</p>	<p>Know how to make references to and acknowledge sources I have used from the internet.</p>
<p>Know to save my work under a suitable title or name so that others know it belongs to me (e.g. filename, name on content).</p>	<p>Know that voice-activated tools (e.g., Alexa, Siri, Google) can help search for information and are not real people.</p>	<p>Know why the internet can be used to sell and buy things</p>	<p></p>	<p>Know ways of identifying when online content has been commercially sponsored or boosted, (e.g. by commercial companies or by vloggers, content creators, influencers).</p>	<p></p>
<p></p>	<p>Know simple rules for using technology safely in different places (home, school, public spaces).</p>	<p></p>	<p></p>	<p>Know examples of content that is permitted to be reused and know how this content can be found online.</p>	<p></p>
<p></p>	<p>Know these rules help keep everyone safe when using online technology.</p>	<p></p>	<p></p>	<p></p>	<p></p>
<p></p>	<p>Know some devices in the home can connect to the internet (e.g., lights, TVs, toys, fridges).</p>	<p></p>	<p></p>	<p></p>	<p></p>
<p></p>	<p>Know that content found online may belong to someone else.</p>	<p></p>	<p></p>	<p></p>	<p></p>
<p></p>	<p>Know why other people's online work belongs to them and should not be used without permission.</p>	<p></p>	<p></p>	<p></p>	<p></p>

 <p>Digital Literacy</p> <p>Disciplinary knowledge</p>	<p>Knows technology must be used with care and shares devices politely.</p>	<p>Recognises personal information and knows not to share it without a trusted adult.</p>	<p>Explains what to do if something online makes them uncomfortable and understands why passwords keep information safe.</p>	<p>Understands online communication may involve people they do not know and knows how to report concerns.</p>	<p>Explains online identity and trust, recognising that not everything online is reliable or true.</p>	<p>Analyses online behaviour and understands respect, reputation and the impact of sharing content.</p>	<p>Evaluates reliability, bias, advertising, persuasion and misinformation online.</p>	<p>Critically assesses online content, influence, manipulation, and strategies to protect wellbeing, privacy and reputation.</p>
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COMPUTING – Curriculum End Goals

Curriculum End Points

The KCPs are the input to the curriculum. The curriculum end points are the output. Curriculum end points capture the knowledge, skills and understanding that children should have at the end of each year. They build progressively over time so that children leave Year 6 well-prepared for the next stage of education as competent and capable geographers.

For subject leaders, they provide a clear overview of the end of year expectations for each year group, which will support the planning and assessment of the curriculum.

For teachers, they provide further clarity around what children should be able to do at the end of each year, using the knowledge they have gained from being taught the KCPDs. They support teachers to plan activities that help to develop children as effective geographers. They should be used to check what children know and how well they can apply this knowledge across the curriculum.

For children, they ensure that they receive an equitable curriculum which gives them the substantive, procedural and disciplinary knowledge needed to be successful in their future studies.

Nursery	Reception	Y1	Y2	Y3	Y4	Y5	Y6
Children should be able to:	Children should be able to:	Children should be able to:	Children should be able to:	Children should be able to:	Children should be able to:	Children should be able to:	Children should be able to:
Recall the knowledge specified within the KKPDs for Nursery	Recall the knowledge specified within the KKPDs for Reception	Recall the knowledge specified within the KKPDs for Year 1	Recall the knowledge specified within the KKPDs for Year 2	Recall the knowledge specified within the KKPDs for Year 3	Recall the knowledge specified within the KKPDs for Year 4	Recall the knowledge specified within the KKPDs for Year 5	Recall the knowledge specified within the KKPDs for Year 6
Handle digital devices carefully and use simple controls with support	Follow and give simple instructions to control a device (early algorithms)	Create simple programs by joining commands into a sequence	Explain what an algorithm is and create simple sequences to control a robot or sprite	Explain how sprites respond exactly to the code given and create programs with multiple sequences	Use repetition/loops to make programs more efficient and improve outcomes	Use selection (if/then/else) to control the flow and outcomes of a program	Use variables in programs and explain how they influence outcomes
Use touchscreens and simple digital tools (e.g., camera, drawing tools) to create content	Use simple paint, camera and media tools to create digital content with support	Predict the outcome of short sequences and begin to debug them	Debug sequences when outcomes do not match predictions	Design and create simple animations or multimedia content using frames and text	Distinguish between the internet and the World Wide Web and navigate websites safely	Refine searches using keywords and understand how search engines rank results	Explain how data travels across networks in packets and how devices are uniquely addressed
Follow simple spoken steps and notice cause-and-effect on digital devices	Identify some personal information and explain that it should be kept private	Give and follow directions on a digital device using simple movement commands	Take clearer digital photos using choices about light, focus and orientation	Use sensors or digital tools to gather data over time and draw conclusions from it	Create and use a branching database to classify and identify objects	Use fields and records to filter and sort information in a flat-file database	Use spreadsheets and formulae to calculate, model and present information to answer questions
Use early directional words (e.g., forward, stop) during physical and digital play	Use technology respectfully, taking turns and asking for help when unsure	Use basic computer parts (mouse, keyboard, screen) confidently	Collect simple data and represent it using tally charts or pictograms	Describe how devices in a network can share information	Evaluate online content for reliability and explain why content belongs to its creator	Combine different media (text, images, audio, video) for a specific purpose and audience	Plan, create and evaluate complex digital content with a clear purpose and intended audience
Notice simple patterns and group objects in basic ways	Sort objects or information into groups for a purpose	Create, save and open a simple digital picture using shape, line and colour tools	Explain how information technology helps in everyday life	Recognise that people may present different identities online and begin to evaluate trust	Explain how online behaviour can affect others and contribute to digital reputation	Explain how persuasion, advertising and stereotypes influence online behaviour	Judge the reliability, accuracy and intent of online content and explain strategies to protect wellbeing, privacy and reputation
Take turns and share devices responsibly		Group objects using labels and count to answer questions	Identify online information that may not be true and explain when to ask for help				
		Recognise personal information and explain why passwords help keep information private					

Progressive Summary

In Nursery, children begin by understanding that digital devices exist for different purposes at home and school, and that they must be used carefully. They experience early interactions with technology such as cameras and touchscreens, and start to recognise patterns and group objects — foundations for later data handling. Simple action words like forward or stop introduce the earliest idea that devices can be controlled.

In Reception, children start to connect their actions to digital outcomes. Early directional language develops into understanding that devices follow instructions, giving them their first experience of algorithms. Their awareness of different technologies grows to include communication tools such as phones and email. Early safety ideas expand into recognising that some personal information must be kept private. Sorting objects or information continues to build the foundations of data grouping and classification. They also create simple digital content using paint, cameras and media tools, and recognise that the internet can be used to find information.

By Year 1, children move from simple instructions to understanding commands and how they join together to make a program. Their developing sense of movement and directions transfers to controlling digital devices. Early experiences with devices become more formal as they identify parts of a computer and their functions. Their digital creativity progresses into creating and saving digital pictures using basic tools. Sorting now includes grouping objects using labels and counting, linking to early data handling. Their safety understanding extends to identifying personal information and using passwords to protect it.

In Year 2, children deepen their programming knowledge by understanding algorithms more clearly and recognising that programs follow a sequence. Their early commands now develop into debugging simple programs. Their digital content creation progresses as they learn to take clearer photographs using decisions about light and orientation. Early grouping and counting develop into collecting data and representing it using tally charts and pictograms. Their understanding of technology widens further into recognising information technology in everyday life, and their online safety knowledge grows to include recognising false information and knowing who to ask for help.

By Year 3, children connect earlier ideas of commands and sequences to understanding how sprites and actions respond precisely to code. Their digital creation skills expand from simple photos to multimedia and animation using frames and text. Early tallying develops into data logging, where sensors collect data over time to answer questions. Their understanding of devices broadens into the concept of a network, recognising how connected digital devices share information. Their online safety knowledge connects identity, relationships and trust, recognising that people may present themselves differently online.

In Year 4, children deepen their understanding of programming by learning how repetition and loops improve efficiency — building on their earlier understanding of sequences. Their knowledge of networks expands into distinguishing the internet from the World Wide Web, showing a deeper grasp of how information moves. Early grouping concepts now progress into creating and using branching databases for identification and classification. Their understanding of false information extends into evaluating online reliability and recognising that digital content belongs to its creator. Online behaviour concepts now link clearly to reputation and impact on others.

By Year 5, pupils broaden their computational thinking through selection (if/then/else), enabling more sophisticated control of programs. Their understanding of information online grows into knowing how search engines index, rank and retrieve content, and how searches can be refined. Early data grouping and branching databases now develop into understanding flat-file databases, including fields and records. Their digital creation skills now involve combining different media for a specific purpose and audience. Their safety awareness connects online behaviour with persuasion, advertising and stereotypes.

In Year 6, children draw together their programming knowledge by learning about variables, understanding how stored values can change program outcomes — a culmination of their work with sequences, repetition and selection. Their conceptual understanding of networks deepens into how data travels via packets, supported by unique device addresses. Their data-handling skills progress to spreadsheets and formulae to calculate, model and present information. Their digital content creation becomes more advanced, evaluating effectiveness for a specific audience and purpose. Their online safety understanding reaches a high level: recognising how information can be manipulated, and using strategies to judge reliability, protect wellbeing and maintain a positive digital reputation.