

St Luke's Primary School



Computing Curriculum

Programme of Study

	Autumn	Spring	Summer
EYFS	Technology around us · Using devices safely What technology is around us, and how do we use it safely?	Mouse & touch control · Bee-Bots & directions How can I control a device to make it go where I want?	Digital painting · Cameras & recording How can I create and capture pictures and sounds?
Year 1	Technology around us · Digital Painting What is technology, and how can I paint using a computer?	Moving a Robot · Grouping Data How do I give a robot instructions, and how can I group and label data?	Digital Writing · Introduction to Animation How can I write using a computer and animate a story?
Year 2	Information Technology Around Us · Online Safety Where do we see information technology, and how do we stay safe online?	Robot Algorithms · Pictograms How do I write and debug an algorithm, and present data in a pictogram?	Making Music · Introduction to Quizzes How can I make music and build a quiz?
Year 3	Connecting Computers · Stop-frame Animation How do computers connect, and how do I animate frame by frame?	Sequencing Sounds · Branching Databases How can I sequence sounds and sort data by asking questions?	Desktop Publishing · Events & Actions in Programs How do I design a publication and use events to control a program?
Year 4	The Internet · Audio Production How does the internet work, and how do I produce audio?	Repetition in Shapes · Data Logging How does repetition make my programs efficient, and how do I log data over time?	Photo Editing · Repetition in Games How do I edit photographs and use repetition in my games?
Year 5	Systems & Searching · Video Production How do computer systems store, search and share information?	Selection in Physical Computing · Flat-file Databases How does selection let a program decide, and how do I question a database?	Introduction to Vector Graphics · Selection in Quizzes How do I create vector graphics and use selection in a quiz?
Year 6	Communication & Collaboration · Web Page Creation How do we communicate online, and how do I build a web page?	Variables in Games · Introduction to Spreadsheets How do variables and spreadsheets help me build and answer questions?	3D Modelling · Sensing How do I design 3D models, and how do devices sense the world?

Progression of Computational Concepts

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing systems & networks	Recognises the technology around us at home and school	Names the parts of a computer and what each one does	Spots information technology beyond the classroom	Explains how computers connect and share information	Describes how the internet carries information	Explains how systems store, search and share data	Compares tools for communicating and collaborating
Programming	Presses buttons to make a Bee-Bot travel where they want	Gives a robot a short, ordered sequence of instructions	Writes, tests and debugs a simple algorithm	Uses events and actions to control a program	Uses repetition to make programs efficient	Uses selection so a program can decide	Uses variables to track and change values
Creating media	Paints, photographs and records on a screen	Paints, writes and animates using a computer	Records music and builds a branching quiz	Animates frame by frame and designs a publication	Produces audio and edits photographs	Plans and films video, and creates vector graphics	Builds web pages and designs 3D models
Data & information	Sorts and matches objects by one feature	Groups and labels objects by their attributes	Collects data and presents it as a pictogram	Sorts data by asking yes/no questions	Logs data over time and interprets it	Questions a flat-file database to find answers	Models and answers questions with spreadsheets
Online safety	Uses a device with an adult and knows to ask for help	Knows what is safe to share and who to tell	Recognises unkind or unsafe behaviour online	Judges whether online content can be trusted	Protects passwords and personal information	Recognises persuasion and influence online	Manages a positive, lasting digital footprint
Key step this year	From playing with a device to using it on purpose	Instructions become a predictable sequence	Algorithms are planned first, then debugged	Programs respond to input rather than just run	Efficiency and accuracy begin to matter	Programs make decisions from conditions	Pupils design their own solutions end to end

EYFS: Autumn

Key Questions	Key Knowledge and Skills	Vocabulary
- Who can I ask for help if something worries me? - How do we switch a device on and off safely? - What are our rules for using screens? - What technology do we use every day? - What are the parts of a computer called?	- Knows a trusted adult in school and at home; asks for help when unsure. - Knows devices are started up and shut down properly; handles equipment carefully. - Knows simple screen rules and why they exist; takes turns and takes screen breaks. - Knows technology is something we use to do a job; spots examples around school. - Knows the screen, keyboard and mouse and their jobs; points to and names them.	- trusted adult · help - on · off · safe - rule · kind · share - technology · device - computer · screen
EYFS – ELG		
- ELG: Building Relationships (PSED) — seeks help and support from familiar adults. - ELG: Managing Self (PSED) — manages basic needs independently and follows safety rules. - ELG: Managing Self (PSED) — explains the reasons for rules and behaves accordingly. - ELG: Speaking (Communication & Language) — uses new vocabulary to name everyday technology. - ELG: Speaking (Communication & Language) — describes and names the parts of a device.		

Key Questions	Key Knowledge and Skills	Vocabulary
• How do I use a mouse to move things on the screen? • How does a touchscreen know what I want it to do? • How do I follow and give clear instructions? • How can I make a robot go where I want? • Which words describe where something is going?	• Knows the mouse moves the pointer; clicks and drags with growing control. • Knows a touchscreen responds to fingers; taps, swipes and drags accurately. • Knows instructions must be clear and in order; listens, then acts on each step. • Knows a robot only does what it is told; enters and runs a short sequence. • Knows forwards, backwards and turns; describes a route aloud before trying it.	• mouse · click · drag • touch · tap · swipe • instruction · order • Bee-Bot · route · target • forwards · backwards · turn
EYFS – ELG		
• ELG: Fine Motor Skills (Physical Development) — uses small tools with control and confidence. • ELG: Fine Motor Skills (Physical Development) — shows precise hand and finger control. • ELG: Listening, Attention and Understanding (C&L) — follows instructions with several actions. • ELG: Self-Regulation (PSED) — works towards a goal, persevering when a route does not work. • ELG: Speaking (Communication & Language) — uses positional and directional language.		

EYFS: Summer		
Key Questions	Key Knowledge and Skills	Vocabulary
• How can I make a picture on a screen? • Which tools change how my picture looks? • How do I keep my work and find it again? • How can I take a photograph of something? • How can I record and listen back to my own voice?	• Knows a paint app makes marks on screen; draws with a finger or mouse. • Knows different tools change the mark made; picks a colour and brush and undoes mistakes. • Knows work is stored on the device; saves, names and reopens a picture. • Knows a tablet can capture what we see; frames and takes a photograph. • Knows sound can be recorded and replayed; records, listens back and improves it.	• paint · brush · colour • tool · undo • save · open • camera · photograph • record · sound · play
EYFS – ELG		
• ELG: Creating with Materials (Expressive Arts & Design) — safely uses a variety of tools. • ELG: Creating with Materials (Expressive Arts & Design) — explores colour, tools and techniques. • ELG: Managing Self (PSED) — manages own routines and work independently. • ELG: Past and Present (Understanding the World) — records and talks about events in their own life. • ELG: Speaking (Communication & Language) — expresses ideas and listens back to their own voice.		

What is technology, and how can I paint using a computer?							
Unit Sequencing							
Technology around us				Digital Painting			
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7	Lesson 8
DIGITAL LITERACY Making good friendships and noticing when someone feels lonely.	Name everyday technology and its uses	Use a mouse to click and drag	Type my name using the keyboard	DIGITAL LITERACY Basic online-safety rules, keeping personal information private, and getting help	Use different digital brushes and tools	Fill shapes and areas with colour	Compare painting on screen and paper
Key Learning Points				Vocabulary			
- Name everyday technology and say what it is used for at home and school. - Identify the main parts of a computer and control it with a mouse. - Use the keyboard to type and edit simple text, then save my work. - Use different digital brushes and tools. - Fill shapes and areas with colour. - Compare painting on screen with painting on paper.				- technology · computer · device - hardware · screen · keyboard · mouse - click · drag · type · save - brush · tool · fill - colour · shape - screen · paper			
Key Stage One Curriculum Objectives							
Pupils should be taught to: - Store, manipulate and retrieve digital content. - Recognise common uses of information technology beyond school. - Use technology purposefully to create, organise, store, manipulate and retrieve digital content. - Use technology safely and respectfully, keeping personal information private, and know where to go for help.							

How do I give a robot instructions, and how can I group and label data?					
Unit Sequencing					
Moving a Robot			Grouping Data		
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Give a floor robot one instruction	Predict where a sequence of commands ends	Plan and program a short route	Label objects by their properties	Group objects by a shared property	Count and compare the groups
Key Learning Points			Vocabulary		
• Give a floor robot a single instruction. • Predict where a sequence of commands will end. • Plan and program a short route to a target. • Describe objects by their properties and label them. • Group and sort objects by a property they share. • Count and compare the groups to say what the data shows.			• instruction · command • sequence · predict • route · target • object · label · property • group · sort · compare • data · information · count		
Key Stage One National Curriculum Objectives					
Pupils should be taught to: • Understand what algorithms are and that programs follow precise, unambiguous instructions. • Create and debug simple programs. • Use logical reasoning to predict the behaviour of simple programs. • Use technology safely and respectfully, keeping personal information private. • Identify where to go for help with concerns about content or contact online. • Understand that programs follow precise and unambiguous instructions.					

Year 1- Summer - Digital Writing · Introduction to Animation
How can I write using a computer and animate a story?

Unit Sequencing	
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Digital Painting	Introduction to Animation
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Lesson 1	Lesson 2	Lesson 3	Lesson 4
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Lesson 5	Lesson 6	Lesson 7	Lesson 8
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DIGITAL LITERACY Naming feelings, recognising others' feelings, and managing when things are difficult.	Type and edit text on a keyboard	Change how text looks (font, size, bold)	Compare writing on a computer and by hand	DIGITAL LITERACY Using the internet safely to find things out and communicate in everyday life.	Add characters to a ScratchJr project	Use blocks to make a character move	Join blocks into a sequence
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Key Learning Points	
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Vocabulary

- Use different digital brushes and tools.
- Fill shapes and areas with colour.
- Compare painting on screen with painting on paper.
- Add characters and a background to a ScratchJr project.
- Use blocks to make a character move.
- Join blocks into a working sequence.

- brush · tool · fill
- colour · shape
- screen · paper
- ScratchJr · character · background
- block · move · run
- debug · fix

Key Stage One National Curriculum Objectives	
English	By the end of Year 1, children should be able to: - Read with fluency and understanding. - Write simple sentences. - Use punctuation correctly. - Understand and use basic grammar. - Speak clearly and listen attentively.
Mathematics	By the end of Year 1, children should be able to: - Count and understand the relationship between numbers. - Add and subtract. - Measure length, mass, and capacity. - Recognise and draw basic shapes. - Understand the concept of time.
Science	By the end of Year 1, children should be able to: - Identify and name parts of plants and animals. - Understand the life cycle of plants and animals. - Recognise the need for a healthy environment.
History	By the end of Year 1, children should be able to: - Identify and name parts of the British Isles. - Understand the importance of the British Isles.
Geography	By the end of Year 1, children should be able to: - Identify and name parts of the British Isles. - Understand the importance of the British Isles.
Art	By the end of Year 1, children should be able to: - Use a variety of materials and techniques to create art. - Understand the importance of art in society.
Music	By the end of Year 1, children should be able to: - Use a variety of instruments to create music. - Understand the importance of music in society.
Physical Education	By the end of Year 1, children should be able to: - Participate in a variety of physical activities. - Understand the importance of physical activity in society.

Pupils should be taught to: • 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, and know where to go for help.

- 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, and know where to go for help.

Year 2 – Autumn - Information Technology Around Us · Online Safety
Where do we see information technology, and how do we stay safe online?

Unit Sequencing

Information Technology Around Us	Online Safety
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Lesson 1	Lesson 2	Lesson 3	Lesson 4
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Lesson 5	Lesson 6	Lesson 7	Lesson 8
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DIGITAL LITERACY Logging in safely, looking after our Chromebooks, and the same kindness rules online as offline.	Log in to the Chromebook and open a set task	Spot everyday technology and say what a computer is	. Sort things into computer or not a computer	DIGITAL LITERACY Online-safety rules, keeping personal information private, and emergency help	Log in to Purple Mash and start a search safely	Type simple words to search and spot what is safe	Be kind online and tell an adult about worries
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Key Learning Points	
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Vocabulary

- Recognise information technology in school and beyond.
- Explain how information technology helps us.
- Use information technology responsibly.
- Keep personal information private online.
- Recognise unkind behaviour online and report it.
- Know who to tell if something online worries me.

- information technology
- device · purpose
- responsible · rules
- personal information · private
- online · unkind · report
- trusted adult · help

Key Stage One National Curriculum Objectives	
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Pupils should be taught to:

- Recognise common uses of information technology beyond school.
- Use technology safely and respectfully, keeping personal information private, and know where to go for help.
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- Understand what algorithms are and that programs follow precise, unambiguous instructions.
- Create and debug simple programs.
- Use logical reasoning to predict the behaviour of simple programs.

Year 2 – Spring - Robot Algorithms · Pictograms					
How do I write and debug an algorithm, and present data in a pictogram?					
Unit Sequencing					
Robot Algorithms			Pictograms		
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Follow and give simple step-by-step instructions	Press buttons to move a floor robot to a target	Spot and fix a wrong step	Count and record data in a simple table	Click and drag pictures to build a pictogram	Read my pictogram and answer two questions
Key Learning Points			Vocabulary		
- Describe a series of instructions as a sequence. - Explain what happens when the order changes. - Create and test an algorithm for a floor robot. - Collect data and enter it into a pictogram. - Compare totals shown in a pictogram. - Answer questions using the data I have collected.			- algorithm · sequence - instruction · order - program · run · test - data · tally · pictogram - more · fewer · total - compare · answer		
Key Stage One National Curriculum Objectives					
Pupils should be taught to: - Understand what algorithms are and that programs follow precise, unambiguous instructions. - Create and debug simple programs. - Use logical reasoning to predict the behaviour of simple programs. - Use technology safely and respectfully, keeping personal information private, and know where to go for help.					

Year 2 – Summer - Making Music · Introduction to Quizzes
How can I make music and build a quiz?

Unit Sequencing

Making Music	Introduction to Quizzes
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Lesson 1	Lesson 2	Lesson 3	Lesson 4
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Lesson 5	Lesson 6	Lesson 7	Lesson 8
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DIGITAL LITERACY How feelings affect behaviour, recognising others' feelings, and managing difficulty.	Open the music tool and click to make sounds	Click to build a simple pattern of sounds	Save, play back and share my music	DIGITAL LITERACY Using the internet safely, judging whether information is true, and online jobs.	Log in and drag blocks together in ScratchJr	Add a start block to ask one question	Play the quiz and fix a block that is wrong
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Key Learning Points	
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Vocabulary

- Use a computer to experiment with sound and rhythm.
- Create and refine a short piece of digital music.
- Save, retrieve and share my work.
- Find and fix errors in a program.
- Design a simple question-and-answer quiz.
- Explain how my quiz program works.

- sound · rhythm · beat
- compose · edit
- save · retrieve
- debug · error
- quiz · question · answer
- predict · explain

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Pupils should be taught to:

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- Recognise common uses of information technology beyond school.
- Understand what algorithms are and that programs follow precise, unambiguous instructions.
- Use technology safely and respectfully, keeping personal information private, and know where to go for help.

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- Recognise common uses of information technology beyond school.
- Understand what algorithms are and that programs follow precise, unambiguous instructions.
- Use technology safely and respectfully, keeping personal information private, and know where to go for help.

Year 3 – Autumn - Connecting Computers · Stop-frame Animation							
How do computers connect, and how do I animate frame by frame?							
Unit Sequencing							
Connecting Computers				Stop-frame Animation			
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7	Lesson 8
DIGITAL LITERACY Healthy family life and building positive friendships that support wellbeing.	Explain what a computer network is	Name devices that connect to a network	Describe how devices share information	DIGITAL LITERACY Making informed decisions about a balanced, healthy lifestyle.	Plan a short stop-frame animation	Capture frames to show movement	Play back and improve my film
Key Learning Points				Vocabulary			
- Explain how digital devices work as input, process and output. - Recognise how computers are connected in a network. - Explain the benefits of connecting devices in school. - Explain how an animation is made from a series of frames. - Plan, capture and refine a short animation. - Add sound and text to improve my animation.				- input · process · output - network · connect · switch - server · share - frame · onion skinning - animation · capture · playback - edit · refine			
Key Stage Two National Curriculum Objectives							
Pupils should be taught to: - Understand computer networks, including the internet, and the services they provide. - Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data. - Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns. - Use logical reasoning to explain how algorithms work and to detect and correct errors.							

Year 3 – Spring - Sequencing Sounds · Branching Databases					
How can I sequence sounds and sort data by asking questions?					
Unit Sequencing					
Sequencing Sounds			Branching Databases		
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Explore Scratch blocks and the stage	Sequence notes to create a tune	Combine sequences into a project	Sort objects with yes/no questions	Build a branching database	Use my database to identify items
Key Learning Points			Vocabulary		
• Explain that a sequence is a set of ordered commands. • Create a program that plays sounds in order. • Predict the outcome of a sequence before running it. • Create yes/no questions to separate objects. • Build a branching database to identify objects. • Explain why some questions work better than others.			• sequence · command · order • Scratch · sprite · sound • predict · run • attribute · yes/no question • branching database · identify • compare · evaluate		
Key Stage Two National Curriculum Objectives					
Pupils should be taught to:					
• Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts. • Use sequence, selection and repetition in programs; work with variables and forms of input and output. • Use logical reasoning to explain how algorithms work and to detect and correct errors. • Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts. • Use sequence, selection and repetition in programs; work with variables and forms of input and output. • Understand computer networks, including the internet, and the services they provide.					

Year 3 – Summer - Desktop Publishing · Events & Actions in Programs
How do I design a publication and use events to control a program?

Unit Sequencing

Desktop Publishing	Events & Actions in Programs
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Lesson 1	Lesson 2	Lesson 3	Lesson 4
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Lesson 5	Lesson 6	Lesson 7	Lesson 8
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DIGITAL LITERACY Assessing and managing risk, keeping information private, and responding in emergencies.	Combine text and images in a layout	Choose fonts and styles for a purpose	Create a publication (poster or leaflet)	DIGITAL LITERACY Judging the reliability of online sources and how information and data are shared.	Move a sprite in four directions	Use events to start and control actions	Plan and debug a movement program
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Key Learning Points	
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Vocabulary

- Combine text and images in a publication.
- Choose an appropriate layout and template.
- Explain why desktop publishing suits a purpose.
- Use events to control when a program runs.
- Move a sprite using key presses.
- Debug a program that does not work as planned.

- desktop publishing · layout
- text box · image · template
- purpose · audience
- event · trigger
- motion · key press
- debug · test

Key Stage Two National Curriculum Objectives	
English	At the end of year 2, pupils should be able to: Writing write clearly and coherently, using a range of punctuation and grammar to make their writing effective Reading understand and respond to written texts, including fiction and non-fiction
Mathematics	At the end of year 2, pupils should be able to: Number use their understanding of place value to add and subtract numbers Measurement measure length, mass, volume and temperature Geometry identify and describe 2D and 3D shapes
Science	At the end of year 2, pupils should be able to: Life Sciences understand the basic structure and function of plants and animals Earth and Space Sciences understand the basic structure and function of the Earth and the universe
History	At the end of year 2, pupils should be able to: Historical Knowledge and Understanding understand the basic structure and function of the British Empire
Geography	At the end of year 2, pupils should be able to: Geographical Knowledge and Understanding understand the basic structure and function of the world
Art and Design	At the end of year 2, pupils should be able to: Art and Design create and develop their own ideas and designs
Music	At the end of year 2, pupils should be able to: Music create and develop their own ideas and designs
Physical Education	At the end of year 2, pupils should be able to: Physical Education participate in a range of physical activities
Personal, Social and Health Education (PSHE)	At the end of year 2, pupils should be able to: Personal, Social and Health Education (PSHE) understand the basic structure and function of the human body

Pupils should be taught to:

- Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and forms of input and output.
- Use logical reasoning to explain how algorithms work and to detect and correct errors.
- Understand computer networks, including the internet, and the services they provide.
- Use search technologies effectively and be discerning in evaluating digital content.
- Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data.

Year 4 – Autumn - The Internet · Audio Production How does the internet work, and how do I produce audio?
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Unit Sequencing

The Internet	Audio Production
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Lesson 1	Lesson 2	Lesson 3	Lesson 4
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Lesson 5	Lesson 6	Lesson 7	Lesson 8
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DIGITAL LITERACY Managing peer influence, changing friendships, and spotting when a friendship feels unsafe.	Explain that the internet links networks	Describe how web pages are shared	Judge whether online content is reliable	DIGITAL LITERACY Balancing time online, managing habits, assessing risk and keeping information private	Identify input and output devices for sound	Record and edit audio clips	Combine and export a podcast
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Key Learning Points	
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Vocabulary

- Describe how the internet connects networks together.
- Explain how web content is created and shared.
- Judge whether information online can be trusted.
- Record and edit audio for a podcast.
- Combine voice, music and effects in a recording.
- Evaluate my recording and suggest improvements.

- internet · network · router
- world wide web · website
- accurate · reliable · evaluate
- audio · record · track
- edit · trim · volume
- podcast · evaluate

Key Stage Two National Curriculum Objectives	
English	At the end of year 2, pupils should be able to: Writing write clearly and coherently in different genres, using a range of sentence structures and punctuation, and using appropriate language for the purpose and audience. Reading read fluently with accuracy and understanding, and understand the main ideas and themes of texts, and the writer's purpose and audience.
Mathematics	At the end of year 2, pupils should be able to: Number use their knowledge of number to solve problems, and understand the relationship between different units of measurement. Shape and Space understand the properties of 2D and 3D shapes, and use their knowledge to solve problems.
Science	At the end of year 2, pupils should be able to: Life Sciences understand the basic structure and function of living organisms, and the importance of the environment. Physical Sciences understand the basic properties of matter, and the effects of forces and energy.
History	At the end of year 2, pupils should be able to: understand the basic events and people of the British Isles, and the impact of the Roman and Norman invasions.
Geography	At the end of year 2, pupils should be able to: understand the basic features of the Earth, and the effects of climate and weather.
Art and Design	At the end of year 2, pupils should be able to: use a range of materials and techniques to create 2D and 3D artworks, and understand the importance of design and creativity.
Music	At the end of year 2, pupils should be able to: use their knowledge of music to create and perform songs, and understand the basic structure and function of musical instruments.
Physical Education	At the end of year 2, pupils should be able to: participate in a range of physical activities, and understand the importance of health and fitness.

Pupils should be taught to:

- Understand computer networks, including the internet, and the services they provide.
- Use search technologies effectively and be discerning in evaluating digital content.
- Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data.
- Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns.
- Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and forms of input and output.

- Understand computer networks, including the internet, and the services they provide.
- Use search technologies effectively and be discerning in evaluating digital content.
- Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data.
- Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns.
- Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and forms of input and output.

Year 4 - Spring – Repetition in Shapes · Data Logging					
How does repetition make my programs efficient, and how do I log data over time?					
Unit Sequencing					
Repetition in Shapes			Data Logging		
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Use a count-controlled loop to draw shapes	Nest loops to make patterns	Design and debug a shape program	Explain that sensors collect data over time	Use a data logger to record readings	Analyse logged data to answer a question
Key Learning Points			Vocabulary		
• Explain what a loop does in a program. • Use count-controlled loops to draw regular shapes. • Modify a loop to change the shape produced. • Explain that data can be collected automatically over time. • Use a data logger to record readings. • Interpret a graph of logged data and draw conclusions.			• repetition · loop · count • Logo · shape · angle • modify · predict • data · logger · sensor • interval · reading · graph • conclusion · interpret		
Key Stage Two National Curriculum Objectives					
Pupils should be taught to: • Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts. • Use sequence, selection and repetition in programs; work with variables and forms of input and output. • Use logical reasoning to explain how algorithms work and to detect and correct errors. • Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data. • Use search technologies effectively and be discerning in evaluating digital content. • Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns.					

Year 4 – Summer - Photo Editing · Repetition in Games
How do I edit photographs and use repetition in my games?

Unit Sequencing

Data Logging				Repetition in Games			
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7	Lesson 8
DIGITAL LITERACY Predicting and managing risk, protecting private information, and acting in emergencies.	Change the composition of an image	Adjust colour and effects	Judge whether editing improved the image	DIGITAL LITERACY How online information is ranked and targeted, and what is safe to share on social media.	Use repetition to build a game	Set how many times a loop runs	Debug and improve my game

Key Learning Points	Vocabulary
1. The first step in the process is to identify the problem. 2. Once the problem is identified, the next step is to gather information. 3. After gathering information, the next step is to analyze the data. 4. Finally, the next step is to implement the solution.	1. Problem: A situation or issue that needs to be solved. 2. Information: Data or facts that are used to make a decision. 3. Analyze: To examine something carefully and in detail. 4. Implement: To put a plan or idea into effect.

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| <ul style="list-style-type: none">• Change the composition of an image by cropping.• Use tools to retouch and adjust a photograph.• Recognise that images online can be edited and misleading.• Use infinite loops in a game.• Design and build a game that uses repetition.• Debug and improve my finished program. | <ul style="list-style-type: none">• crop · rotate · resize• filter · retouch · adjust• original · edited · misleading• infinite loop · animation• design · algorithm• debug · evaluate |
|---|---|

Key Learning Points	Vocabulary
1. The first step in the process is to identify the problem. 2. Once the problem is identified, the next step is to gather information. 3. After gathering information, the next step is to analyze the data. 4. Finally, the next step is to implement the solution.	1. Problem: A situation or issue that needs to be solved. 2. Information: Data or facts that are used to make a decision. 3. Analyze: To examine something in detail. 4. Implement: To put a plan or idea into action.

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|---|---|
| <ul style="list-style-type: none">• Change the composition of an image by cropping.• Use tools to retouch and adjust a photograph.• Recognise that images online can be edited and misleading.• Use infinite loops in a game.• Design and build a game that uses repetition.• Debug and improve my finished program. | <ul style="list-style-type: none">• crop · rotate · resize• filter · retouch · adjust• original · edited · misleading• infinite loop · animation• design · algorithm• debug · evaluate |
|---|---|

Key Stage Two National Curriculum Objectives	
English At the end of year 6, pupils should be able to: - write clearly, coherently and confidently, using a range of sentence structures and punctuation. - use a range of vocabulary and grammar to express their ideas and feelings. - understand and use the conventions of different types of writing. - understand and use the conventions of different types of writing.	Mathematics At the end of year 6, pupils should be able to: - use their understanding of the four operations to solve problems involving numbers, measures and money. - use their understanding of fractions, decimals and percentages to solve problems. - use their understanding of geometry to solve problems. - use their understanding of statistics to solve problems.

Pupils should be taught to:

- Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and forms of input and output.
- Use logical reasoning to explain how algorithms work and to detect and correct errors.
- Understand computer networks, including the internet, and the services they provide.
- Use search technologies effectively and be discerning in evaluating digital content.
- Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data.

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Year 5 – Autumn - Systems & Searching · Video Production							
How do computer systems store, search and share information?							
Unit Sequencing							
Systems & Searching				Video Production			
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7	Lesson 8
DIGITAL LITERACY Recognising risky online contact, responding to unknown adults, consent and confidentiality.	Explain how a computer system works	Describe how search engines rank results	Search effectively for information	DIGITAL LITERACY Caring for mental health and recognising and managing a range of feelings.	Plan a short video with a storyboard	Film and capture video clips	Edit and export my finished video
Key Learning Points				Vocabulary			
- Explain how a computer system takes input and produces output. - Describe how a search engine finds and ranks results. - Judge how reliable a set of search results is. - Plan a short video using a storyboard. - Film, import and edit video clips. - Evaluate my finished video against its purpose.				- system · input · output - search engine · index · rank - reliable · evaluate - storyboard · shot · angle - film · import · edit - trim · export · audience			
Key Stage Two National Curriculum Objectives							
Pupils should be taught to: - Understand computer networks, including the internet, and the services they provide. - Use search technologies effectively and be discerning in evaluating digital content. - Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data. - Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts. - Use sequence, selection and repetition in programs; work with variables and forms of input and output. - Use logical reasoning to explain how algorithms work and to detect and correct errors.							

Year 5 – Spring - Selection in Physical Computing · Flat-file Databases					
How does selection let a program decide, and how do I question a database?					
Unit Sequencing					
Selection in Physical Computing			Flat-file Databases		
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Explore how a controllable device works	Use a condition with selection	Build a program to control components	Enter records into a database	Search and sort a database	Present findings from my data
Key Learning Points			Vocabulary		
• Explain how a condition controls what a program does. • Use selection to control the outcome of a program. • Connect and control components with a controller. • Create records and fields in a database. • Sort, group and filter records to answer questions. • Present findings from a database clearly.			• selection · condition · if • true · false • Crumble · component · output • database · record · field • sort · group · filter • search · chart · findings		
Key Stage Two National Curriculum Objectives					
Pupils should be taught to: • Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts. • Use sequence, selection and repetition in programs; work with variables and forms of input and output. • Use logical reasoning to explain how algorithms work and to detect and correct errors. • Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts. • Use sequence, selection and repetition in programs; work with variables and forms of input and output. • Use logical reasoning to explain how algorithms work and to detect and correct errors.					

Year 5 – Summer - Introduction to Vector Graphics · Selection in Quizzes							
How do I create vector graphics and use selection in a quiz?							
Unit Sequencing							
Introduction to Vector Graphics				Selection in Quizzes			
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7	Lesson 8
DIGITAL LITERACY Age restrictions, assessing risk, protecting information and emergency response.	Create a drawing using vector shapes	Group and layer objects	Refine and reuse my vector drawing	DIGITAL LITERACY Spotting manipulated media and misinformation, and setting personal goals.			
Key Learning Points				Vocabulary			
- Create images using shapes and drawing tools. - Group, duplicate and layer objects in a drawing. - Explain why vector images can be resized cleanly. - Design an algorithm that uses selection. - Build a quiz that responds to different answers. - Test and debug my program against its design.				- vector · shape · object - group · layer · align - resize · zoom - algorithm · design - quiz · response · score - test · debug · evaluate			
Key Stage Two National Curriculum Objectives							
Pupils should be taught to: - Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data. - Use search technologies effectively and be discerning in evaluating digital content. - Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns. - Understand computer networks, including the internet, and the services they provide. - Use search technologies effectively and be discerning in evaluating digital content.							

Year 6 – Autumn - Communication & Collaboration · Web Page Creation
How do we communicate online, and how do I build a web page?

Unit Sequencing

Communication & Collaboration	Web Page Creation
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Lesson 1	Lesson 2	Lesson 3	Lesson 4
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Lesson 5	Lesson 6	Lesson 7	Lesson 8
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DIGITAL LITERACY Self-respect, treating others respectfully online, and debating issues constructively.	Explain how data is transferred over the internet	Explore how we communicate online	Work collaboratively and safely online	DIGITAL LITERACY Recognising mental-health warning signs, managing setbacks and new responsibilities.	Plan the pages and layout of a website	Build web pages using HTML	Add links and publish the website
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Key Learning Points	
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Vocabulary

- Explain how data is transferred across the internet.
- Compare ways of communicating and collaborating online.
- Identify how to stay safe and report concerns online.
- Plan the structure and navigation of a website.
- Create linked web pages with text and images.
- Consider ownership, copyright and audience online.

- packet · address · transfer
- collaborate · share · comment
- safe · report · concern
- website · page · navigation
- hyperlink · embed · layout
- copyright · ownership · audience

Key Stage Two National Curriculum Objectives	
English At the end of year 6, pupils should be able to: Writing write clearly and coherently, using a range of appropriate punctuation and sentence structures, and using appropriate language for the purpose and audience. Reading understand and respond to a range of texts, including fiction, non-fiction, drama, poetry and media texts, and be able to discuss and evaluate them.	Mathematics At the end of year 6, pupils should be able to: Number use their understanding of the number system to solve problems, including mental calculations and written methods. Measurement use their understanding of measurement to solve problems, including conversions and calculations. Geometry use their understanding of geometry to solve problems, including properties of shapes and angles. Statistics use their understanding of statistics to solve problems, including data handling and probability.

Pupils should be taught to:

- Understand computer networks, including the internet, and the services they provide.
- Use sequence, selection and repetition in programs; work with variables and forms of input and output.
- Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts.
- Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data.
- Use search technologies effectively and be discerning in evaluating digital content.
- Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns.

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- Understand computer networks, including the internet, and the services they provide.
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 - Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data.
 - Use search technologies effectively and be discerning in evaluating digital content.
 - Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns.

Year 6 – Spring - Variables in Games · Introduction to Spreadsheets					
How do variables and spreadsheets help me build and answer questions?					
Unit Sequencing					
Variables in Games			Introduction to Spreadsheets		
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Plan a game that uses variables	Create sprites and control movement	Use variables to score and track lives	Enter data into a spreadsheet	Use formulas to calculate	Create a chart from spreadsheet data
Key Learning Points			Vocabulary		
• Explain what a variable is and how it is used. • Design a game that uses a score variable. • Test, debug and improve my program. • Enter data into cells, rows and columns. • Use formulae to calculate and answer questions. • Produce charts to present and interpret data.			• variable · value · change • score · update · set • test · debug · evaluate • cell · row · column · data • formula · calculate · total • chart · interpret · present		
Key Stage Two National Curriculum Objectives					
Pupils should be taught to: • Enter data into cells, rows and columns. • Use formulae to calculate and answer questions. • Produce charts to present and interpret data. • Understand computer networks, including the internet, and the services they provide. • Use search technologies effectively and be discerning in evaluating digital content. • Select, use and combine software on a range of devices to create content and to collect, analyse, evaluate and present data.					

Year 6 – Summer - 3D Modelling · Sensing

How do I design 3D models, and how do devices sense the world?

Unit Sequencing

3D Modelling	Sensing
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Lesson 1	Lesson 2	Lesson 3	Lesson 4
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Lesson 5	Lesson 6	Lesson 7	Lesson 8
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DIGITAL LITERACY Following age restrictions on media, games and online gaming.	Create 3D objects on screen	Resize, position and combine shapes	Design and build a 3D model	DIGITAL LITERACY Risks of gambling, money and feelings, and routes into future careers.	Use sensors to detect inputs	Use variables with sensor data	Build a program that responds to sensors
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Key Learning Points	
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Vocabulary

- Create and modify 3D objects in a modelling tool.
- Combine and position objects to build a model.
- Evaluate my model against a design brief.
- Explain how sensors provide input to a program.
- Write a program that responds to sensor input.
- Design a project that solves a real problem.

- 3D · object · view
- resize · rotate · position
- group · design brief
- sensor · input · variable
- micro:bit · program · flash
- design · test · evaluate

Key Stage Two National Curriculum Objectives	
English At the end of Year 2, pupils should be able to: Writing write clearly and coherently, using a range of punctuation and sentence structures, and using appropriate language for the purpose and audience. Reading read with fluency and understanding, using a range of strategies to understand and interpret texts, and using appropriate language to discuss and evaluate texts.	Mathematics At the end of Year 2, pupils should be able to: Number understand and use the number system, including the four operations, and understand the relationship between multiplication and division. Geometry understand and use the properties of shapes, including angles, area and perimeter, and understand the relationship between different units of measurement. Statistics understand and use the concepts of probability and statistics, including the collection and analysis of data.

Pupils should be taught to:

- Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and forms of input and output.
- Use logical reasoning to explain how algorithms work and to detect and correct errors.
- Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns.
- Use search technologies effectively and be discerning in evaluating digital content.

- Design, write and debug programs that accomplish specific goals; decompose problems into smaller parts.
- Use sequence, selection and repetition in programs; work with variables and forms of input and output.
- Use logical reasoning to explain how algorithms work and to detect and correct errors.
- Use technology safely, respectfully and responsibly; recognise acceptable behaviour and how to report concerns.
- Use search technologies effectively and be discerning in evaluating digital content.