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Cavendish Close Junior Academy

Computing Intent and Implementation

At Cavendish Close Junior Academy, we aim to deliver a curriculum that helps children to **Aspire, Collaborate and Experience** a variety of opportunities.

Intent

1	Confident and knowledgeable users of technology
2	Be confident, effective and creative ICT users
3	To design, write and debug programs
4	Responsible, safe, and ethical digital citizens
5	Apply computing across the curriculum

Intent explanation

1	It is our intention that all our pupils become confident safe, respectful and efficient users of technology who understand how computer systems work and how technology affects the world around them and recognise how to work together safely using digital tools.
2	It is our intention that all children become confident, effective and creative ICT users through a sequenced KS2 curriculum that develops understanding of programming, algorithms, and data handling, enabling pupils to design, create, and debug programs to solve problems.
3	It is our intention that all children design, write, adapt and debug programs using sequencing, repetition, selection, variables and inputs across a progressive range of programming environments
4	It is our intention that all children become responsible and reflective users of technology who understand the impact of digital systems on individuals and society. They will learn how to communicate and collaborate effectively online, understanding how shared files, cloud tools and digital communication platforms support teamwork.
5	It is our intention that all children apply computing skills across the curriculum, using tools such as data logging, spreadsheets, web creation and media production

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ACE Curriculum Statement

"Children should grow up not just being consumers of technology, but also the creators of technology." – Steve Jobs

At Cavendish Close Juniors, our ACE computing curriculum enables children to aspire to become confident, capable, and creative users of technology who are prepared for an increasingly digital world. Computing is thoughtfully interwoven throughout the curriculum, allowing pupils to develop secure knowledge of computer systems, networks, programming, and digital tools while applying these skills meaningfully across subjects. Through access to individual iPads as part of HTML (Harnessing Technology, Maximising Learning), children experience consistent opportunities to explore, practise, and extend their computing skills both in school and at home.

Pupils are taught to design, write, adapt, and debug programs using sequencing, repetition, selection, variables, and inputs across a progressive range of programming environments. They engage with a wide variety of age-appropriate hardware and software, including animation, green-screen technology, digital publishing, and creative media, enabling them to communicate ideas effectively and express their learning in innovative ways. Computing lessons and cross-curricular projects encourage collaboration, allowing children to work together using digital technologies to plan, create, and solve problems, developing teamwork and communication skills that support learning beyond the classroom.

Online safety and digital responsibility underpin all aspects of computing. Children develop an understanding of how to use technology safely, respectfully, and ethically, recognising both the opportunities and challenges of the digital world. Through positive and engaging experiences, pupils become fluent in selecting the most appropriate tools to support their learning, share their work creatively, and apply computing skills confidently across the curriculum.

Through aspirational learning, collaborative opportunities, and hands-on experiences, children leave Cavendish Close Juniors as ACE computing technicians — confident and knowledgeable users of technology, creative problem-solvers, responsible digital citizens, and learners equipped with skills that will support them throughout their education and into the future.

Through all of these, our children are able become ACE computing technicians.

Our ACE Curriculum

Aspire★Collaborate★Experience

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Implementation

Long term curriculum coverage

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer
3	Computing Networks	Stop-Frame animation	Programming Sequences using sound	Organising data using databases	Desktop publishing	Events and actions in programs
4	The internet	Audio Production	Repetition in Programs	Data logging	Photo editing	Using repetition to create a game
5	Computer Systems	Video production	Exploring selections in physical computing	Flat-file databases	Introduction to Vector graphics	Programming to develop a quiz
6	Communication and the internet	Web page creation	Using variables to develop a game	Spreadsheets	3D Modelling	Sensing movement with physical computing.

Key Concepts

	Year 3	Year 4	Year 5	Year 6
Algorithms and data structures	✓		✓	
Computing systems	✓			
Creating media	✓	✓	✓	✓
Data and information	✓	✓	✓	✓
Design and development	✓	✓		✓
Effective use of tools	✓	✓	✓	✓
Networks	✓	✓	✓	
Programming	✓	✓	✓	✓
Safety and security.		✓		✓

- All pupils complete iPad refresher lessons at the beginning of each academic year which recap online safety alongside online safety awareness days and PSHE units across the year.

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Skills progression

Skill	Year 3	Year 4	Year 5	Year 6
Computer Systems and Networks	Pupils learn that digital devices have inputs, processes, and outputs, and understand how computers form networks. They identify physical components of networks such as switches, routers, servers, and see how devices communicate. Pupils describe digital devices and simple networks. (local networks)	Pupils learn the internet is a network of networks and that data is shared between devices across interconnected systems. They explore how information is sent between devices using routes and that different services run over the internet. They begin to differentiate the Internet vs the World Wide Web and how content becomes available online. (global experts)	Pupils learn how search engines use web crawlers and indexes to organise and retrieve information. They explore how results are ranked and why ranking matters to users and organisations. They evaluate the effectiveness of different online working methods, building an understanding of system-level collaboration. (large computer systems/search engines)	Pupils study internet addresses and data packets, learning how data is broken down, routed and reassembled. They learn how people collaborate online, how shared documents and cloud systems support teamwork, and evaluate communication tools. Pupils further consider responsible communication, strengthening their understanding of systems reliability and safety. (how systems operate and collaborate).
Data and Information	Pupils create questions with yes/no answers, group objects, and build branching databases. They identify attributes and explain how grouping and sorting can answer questions.	Pupils explain that data gathered over time can answer questions. They use digital devices and sensors to collect data automatically. They learn that a data logger collects data points at	Pupils navigate and sort computer-based databases using different views. They use grouping, sorting and search tools (AND/OR) to answer complex questions.	Pupils collect and organise data in spreadsheets with accurate structure. They identify cell types and apply formatting to support calculations.

	They learn that database structure affects how easily data can be interpreted. Children begin understanding classification, grouping, sorting, and simple databases.	intervals to show patterns or changes. They analyse data using computer tools Children learn sensing, measurement, continuous data collection, and interpreting patterns.	They create charts to compare data visually and interpret results. They apply these skills using real-world databases (e.g., flight search). Children now work with structured digital databases, queries, searches, and visualisation	They use formulas and functions to calculate new data across ranges. They plan an event using spreadsheet calculations. They present information clearly using charts. Children progress to data modelling, formulas, functions, and efficient digital data manipulation.
Programming	Pupils explain how a sprite moves through events and actions. They create programs to move sprites in four directions, introducing sequencing. They adapt programs to new contexts, add features, and debug simple errors. They design and evaluate simple projects like maze-based games. Introduction to sequence, simple events, predicting	Pupils type commands accurately in a text-based language (Logo) They create algorithms and write programs using repetition (count-controlled loops). They learn to modify loops and recognise efficient solutions. Pupils decompose tasks into smaller steps and build projects using repeated patterns.	Pupils explain how selection changes the flow of a program. They explore how conditions connect to outcomes using conditional statements. They design and build programs (e.g., quizzes) that respond differently depending on user input. They evaluate and improve programs by refining conditional logic.	Pupils define variables as changeable values. They update variables and use them to improve games (e.g., score, lives). Physical Computing (micro:bit) Pupils create programs to run on a controllable device. They use inputs, outputs, and selection to control device actions. They use conditional statements and update

	outcomes, and basic debugging.	Development of repetition, loop structures, decomposition and text-based programming.	Introduction to selection, branching, and conditional logic, following the "Use–Modify–Create" model.	variables based on sensor input. They design and build real physical systems (e.g., step counters). Higher-level programming with variables, inputs/outputs, and physical computing.
Creating Media	Pupils use text and images to communicate ideas and change fonts for purpose. They plan layouts, use templates, and understand how composition affects clarity. They begin to edit and improve digital documents based on feedback.	Pupils use a range of tools to change images, crop, recolour, adjust tone, and evaluate improvements. They explore cloning and combining images for creative or purposeful outcomes. Pupils identify devices used to record/play audio and create their own recordings. They edit and combine tracks, recognise podcast features, and export final audio.	Pupils recognise vector artwork as shape-based, use line/shape tools, combine objects, apply layers, and group elements. They adapt vector drawings and create their own for specific purposes. Pupils follow the full production process: storyboarding, filming, reshooting, editing, and evaluating. They add multimedia elements and understand how choices impact the final video.	Pupils identify features of good websites, plan layouts, and add content ethically. They use navigation, sub-pages, and hyperlinks while evaluating usability. Pupils recognise 3D environments, adapt digital objects, combine components, and design purposeful 3D models. They evaluate and improve their models based on feedback or purpose.

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Key Lesson Outcomes
Autumn term 1

Year Group	Year 3	Year 4	Year 5	Year 6
Unit Title and description	Computing Networks	The internet	Introduction to computer systems	Communication and the internet
Crucial Curriculum Content	• Digital devices use inputs, processes, and outputs to function. • Digital devices can connect to form networks and share information • A network has key physical components with specific roles (server, router, switch, wireless access).	• Understand how networks and the internet connect devices globally. • Describe how data travels and how the WWW works. • Recognise ownership and reliability of online content	• Understand computer systems and how their parts work together. • Know how search engines work and how to use them effectively. • Understand how search results are selected, ranked, and why order matters.	• Understand how the internet works and why it matters. • Know how data is transferred and how collaboration happens online. • Evaluate online communication methods and ways of working together.
Key Concepts	Computing systems Networks	• Networks • Safety and security	• Networks	• Effective use of tools • Safety and security
Lesson outcomes	1. To describe how digital devices work. 2. To design a digital device	1. Can explain how networks are connected together and why they are important to protect.	1. Describe how systems are made up of different parts that work together.	1. Can explain the importance of the internet.

	3. Explain how digital devices can be used for different activities 4. Explain how computer networks can be used to share information 5. Explain how digital devices can be connected. 6. Can identify physical components of a network.	2. Describe how information is sent between networked devices. 3. Outline how websites or the WWW are shared via the internet. 4. Explain how content is made available on the WWW 5. Recognise that the WWW is made of content created and owned by many people. 6. Evaluate the reliability of content on the web.	2. Recognise the role of computer systems in out lives. 3. Identify how to use a search engine effectively. 4. Describe how search engines select results. 5. Explain how search results are ranked. 6. Recognise why the order of results is important and to whom.	2. Explain how data is transferred across the internet. 3. Recognise how sharing information online can help people to work together. 4. Evaluate different ways of working together online. 5. Describe how we communicate using technology. 6. Evaluate different methods of online communication.
Key Vocabulary	Digital device, Input, Process, Output, Network, Connection, Router, Switch	Network, internet, router, data, route. World Wide Web, website/webpage, reliability.	System, search engine, search term, index, web crawler, ranking, relevance.	Internet, Data packet, addressing, online communication, collaboration. Media, cloud storage, methods.
ACE (Aspire, Collaborate, Experience) links	**Aspire-** Design their own digital device. **Collaborate**- Complete Network- mapping activities together. **Experience-** How information moves through a network	**Aspire-** Build confidence evaluating online content, aiming to become informed and critical digital citizens**.** **Collaborate-** work together to analyse websites, consider ownership, and evaluate trustworthiness.	**Aspire-** become confident and responsible information seekers. **Collaborate-** group tasks exploring how systems work and why they matter**.**	**Aspire-** use online tools effectively to communicate and collaborate. **Collaborate-** how information sharing online helps teams work efficiently **Experience-** est and compare communication

		Experience- experience real-world digital literacy by exploring how websites	**Experience-** how changing search terms affects results and rankings.	methods to understand their impact.

Autumn term 2

Year Group	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Unit Title and description	Stop-Frame animation	Audio production	Video production	Web page creation
Crucial Curriculum Content	• Animation is created from a sequence of still images • Storyboards help plan an animation effectively. • Consistency and careful frame-making improve animation quality.	• Understand how audio is created, played, and edited. • Combine and structure multiple audio tracks to create a podcast. • Produce, export, and evaluate a complete podcast	• Understand and apply the process of planning and capturing video. • Use digital devices confidently to record, organise and refine footage. • Consider how choices in filming and editing affect the final video.	• Understand what makes an effective website and how web pages are created. • Design and create purposeful, copyright-aware web pages. • Build navigable websites with meaningful links
Key Concepts	• Effective use of tools	• Creating media • Effective use of tools	• Creating media • Effective use of tools	• Creating media • Design and development

Lesson outcomes	1. Explain that animation is a sequence of pictures 2. Relate animated movements toa sequence of pictures 3. Plan an animation using a storyboard. 4. Identify the need to work consistently and carefully in frames. 5. Review and improve an animation 6. Evaluate the effect of adding another media to an animation.	1. Can name devices used to listen and play audio and create their own audio. 2. Can edit and combine tracks to make new audio. 3. Recognise the features of a podcast and plan their own. 4. Record the voice parts of a podcast based on a plan. 5. Can export a completed podcast for listening on other digital devices. 6. Evaluate how effective a podcast is.	1. Identify the process for making videos. 2. Use a digital device to record video 3. Can use a storyboard to help me record videos and review them. 4. Can create a storyboard to plan scenes for a video. 5. Identify that a video can be improved through reshooting and editing. 6. Consider the impact of the choices made when making video.	1. Identify the features of a good website and know how web pages are created. 2. Can design my own web page for a purpose. 3. Can consider the ownership and copyright of images when searching for images online. 4. Add suitable content to a web page and check its compatibility on a range of devices. 5. Explain the need for navigation. 6. Add external hyperlinks to a web page, whilst considering the implications of doing so.
Key Vocabulary	Frame, Sequence, Animation , Storyboard, Consistency, Media, Evaluate	Microphone, speaker, audio, track edit, podcast, quality, export.	Scene, import, export, transition, storyboard, edit, reshoot.	Website, layout, copyright, navigation, hyperlink, compatibility, fait use.
ACE (Aspire, Collaborate,	**Aspire-** To create a flowing animation.	**Aspire-** Designing a podcast with clear structure and purpose.	**Aspire-** improve their footage through reshooting and thoughtful editing.	**Aspire-** creating visually appealing, purposeful web pages

Experience) links	**Collaborate-** support each other to create consistent frames. **Experience-** Creating a stop-frame animation.	**Collaborate-** Sharing recording responsibilities. **Experience-** Using real audio equipment and software	**Collaborate-** work together to plan scenes. **Experience-** hands-on use of filming equipment and editing software.	**Collaborate-** testing site navigation and ensuring pages work across devices **Experience-** review their pages across different devices to understand responsive design.

Spring term 1

Year Group	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Unit Title and description	Programming sequences using sound	Repetition in programs	Exploring selection in physical computing	Using variables in programming to develop a game
Crucial Curriculum Content	• Programs are made by sequencing commands, and the order affects the outcome. • Events can be used to start or trigger sequences in a program. • Pupils can design and implement a complete program using sprites, sequences, and multiple code blocks	• Write accurate text-based programs using typed commands. • Understand and apply repetition through count-controlled loops. • Use decomposition and loops to design and create complete programs	• Understand and control physical computing systems. • Use repetition and conditional logic to control hardware. • Design and create physical computing projects using selection.	• Understand what variables are and why programs use them. • Apply variables to improve and control a game. • Design, create, evaluate, and refine a variable-based project.

Key Concepts	• Design and development • Programming	• Algorithms and data structures • Programming	• Programming	• Programming
Lesson outcomes	1. To use sprites in scratch and customise them 2. Can identify that commands have an outcome 3. To explain that programs run sequences, which can be triggered by and event. 4. Recognise that the order of commands in a program can affect the output. 5. To design a program that will combine different types of code block 6. Can implement an algorithm as code to create a project from a design	1. Can type programming commands accurately. 2. Can create a program in a text-based language. 3. Can describe repetition 4. Can modify a count-controlled loop to produce a given outcome. 5. Can decompose a task into small steps. 6. Create a program using count-controlled loops to produce a given outcome.	1. Control a simple circuit connected to a computer. 2. Can write a program which uses multiple output. 3. Write a program which contains a conditional loop. 4. Use a loop to repeatedly check whether a condition has been met. 5. Design a physical project that includes selection. 6. Create a physical project that includes selection.	1. Can define variables as something that is changeable. 2. Explain why a variable is used in a program. 3. Choose how to improve a game by using variables. 4. Design a project that builds on a given example. 5. Follow a design to create a program that uses variables. 6. Evaluate and improve my coding project.
Key Vocabulary	Sprite, command, outcome, sequence, event, algorithm, code block, design.	Command, text-base language, algorithm,, repetition, count-	Circuit, microcontroller, output, conditional loop, selection, sensor, algorithm.	Value, update, event, algorithm, design, debug, enhance, improve.

		controlled, decomposition, procedure, outcome.		
ACE (Aspire, Collaborate, Experience) links	**Aspire-** Make complex sequence **Collaborate-** Supporting each other in debugging when commands **Experience-** experimenting with sequences, events and outcomes in real time.	**Aspire-** Striving for accuracy in typed commands. **Collaborate-** Supporting each other through debugging challenges. **Experience-** Seeing how repetition makes programs more efficient and powerful.	**Aspire-** designing a functioning physical project using real hardware. **Collaborate-** support one another during debugging, comparing how conditions and loops behave. **Experience-** test, adapt and refine their projects like real engineers.	**Aspire-** build confidence by turning their own designs into fully working programs. **Collaborate-** test variables in different parts of a program, spotting where values need updating. **Experience-** real game-development workflow: design → code → test → improve.

Spring term 2

Year Group	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Unit Title and description	Organising data using databases.	Data logging	Flat-file databases	Spreadsheets

Crucial Curriculum Content	Create yes/no questions to classify and sort objects. Classify objects using attributes to build branching databases. Construct well-structured branching databases and identification tools.	Understand that data gathered over time helps answer questions. Know how computers and sensors automatically collect and analyse data. Select relevant data and use it to answer questions.	Understand how databases store, display, and organise data. Develop skills in grouping, sorting, selecting, and visually comparing data. Apply database skills to real-world questions	Understand how to collect, organise, and format data in a spreadsheet. Use formulas and functions to calculate and analyse data. Apply spreadsheet skills to real-world tasks and present data effectively.

Key Concepts	• Data and information	• Data and information • Effective use of tools	• Data and information • Effective use of tools	• Data and information • Effective use of tools
Lesson outcomes	1. Create questions that have yes/no answers. 2. Can identify the attributes to collect data about an object. 3. Can create branching databases. 4. Explain why it is helpful for a database to be well structured. 5. Plan the structure of a branching database. 6. Independently create an identification tool.	1. Can explain that data gathered over time can be used to answer questions. 2. Can use a digital device to collect data. 3. Can explain that a data logger collects data points from sensors over time. 4. Can recognise how a computer can help to analyse data. 5. Can identify data needed to answer questions 6. Use data from a sensor to answer questions.	1. Use a paper database to record data. 2. Navigate and sort data in a computer-based database using different views. 3. Outline how to answer questions by grouping and then sorting data. 4. Explain that tools can be used to select specific data. 5. Explain that computer programs can be used to compare data visually. 6. Use real-world database to answer questions.	1. Collect data and organise it in a spreadsheet. 2. Identify cells in a spreadsheet and how the data has been formatted. 3. Calculate new data in a spreadsheet using formulas. 4. Use spreadsheets functions that work with a range of cells. 5. Use spreadsheets to plan an event. 6. Present data so that it is easier to understand and use.
Key Vocabulary	Group, Attributes, Group, Branching database, Order, identify, tool.	Data, Data set, sensor, logger, analyse, interval, question.	Record, field, view, grouping, sorting, filter, chart, graph.	Spreadsheet, cell, format, formula, function, range, chart, planning.
ACE (Aspire, Collaborate,	**Aspire-** Developing well-structured branching databases.	**Aspire-** for accuracy when collecting and interpreting sensor data.	**Aspire-** organise and analyse data accurately	**Aspire-** produce accurate calculations and

Experience) links	**Collaborate-** Comparing different database designs and explaining choices. **Experience-** Creating physical and digital branching databases.	**Collaborate-** Working together to collect data using shared digital devices. **Experience-** Using real data-logging equipment and sensors.	**Collaborate-** share reasoning when grouping/sorting information and evaluating charts **Experience-** how visual comparison through charts helps make sense of large data sets.	well-formatted spreadsheets **Collaborate-** collect data, compare formulas, and support each other in problem-solving **Experience-** authentic tools such as formulas, functions, and charts.

Summer term 1

Year Group	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Unit Title and description	Desktop publishing	Photo editing	Introduction to vector graphics	3D Modelling
Crucial Curriculum Content	• Use text, images, and suitable formatting to communicate clearly. • Plan and create documents using templates. • Edit and improve documents based on feedback.	• Understand and apply tools that change the appearance and composition of digital images. • Recognise how colours, cloning, and combining images affect meaning and impact. • Create purposeful edited images and evaluate improvements made.	• Understand how vector drawings are created and structured. • Create and adapt vector drawings using software tools. • Compare and evaluate vector drawings.	• Understand how 3D modelling software works and how objects can be modified. • Combine and construct objects to create purposeful 3D models. • Design, create, and improve their own 3D models

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Key Concepts	• Creating media • Effective use of tools	• Creating media • Effective use of tools	• Creating media • Effective use of tools	• Creating media • Effective use of tools
Lesson outcomes	1. Using text and images to communicate 2. Change the font of text to make it suitable. 3. Plan and layout of a document. 4. Copy content into a template. 5. Plan, create and use a template for a specific purpose. 6. Can edit and improve a document based on feedback.	1. Use a range of tools to change a digital image and its composition. 2. Explain the impact of changing the colours in a digital image. 3. Explain how cloning can be used to change digital images. 4. Can describe how images can be combined. 5. Create a new image using parts of other images 6. Evaluate how change can improve and image.	1. Recognise vector drawings and use shape and line tools. 2. Create a vector drawing by combining shapes. 3. Use software tools to adapt a vector drawing. 4. Recognise that vector drawings consist of layers of objects. # 5. Can group objects to make them easier to work with. 6. Can create and compare vector drawings.	1. Recognise that you can work in three dimensions on a computer. 2. Identify that digital 3D objects can be modified. 3. Recognise that objects can be combined in a 3D model. 4. Create a 3D model for a given purpose. 5. Create a plan for my own 3D model. 6. Create their own 3D model and make suggestions on how it could be improved.
Key Vocabulary	Text, image, font, template, placeholder, orientation, layout, edit.	Edit, crop, rotate, composition, colour effect, clone, combine, purpose.	Vector, object, layer. Group, duplicate, adapt, shape tool.	3d Model, object, combine, modify, layer, structure. Design, evaluate.
ACE (Aspire, Collaborate, Experience) links	**Aspire-** create clear, professional-looking documents **Collaborate-** Providing and receiving constructive	**Aspire-** Exploring advanced tools. **Collaborate-** Sharing feedback on composition and colour choices.	**Aspire-** produce polished, well-structured vector drawings **Collaborate-** discuss tool choices and support each	**Aspire-** use increasingly complex tools and combinations of objects. **Collaborate-** compare completed models and

	feedback to improve documents. **Experience-** Experimenting with templates, placeholders and different layouts.	**Experience-** Experimenting with recolouring, cloning and layering images	other in adjusting layers or grouping objects **Experience-** explore how layering, combining shapes, and adapting objects form complex illustrations	provide constructive feedback to peers. **Experience-** explore how digital objects behave in three dimensions.

Summer term 2

Year Group	Year 3	Year 4	Year 5	Year 6
Unit Title and description	Events and actions programming	Repetition in programming to create a game	Selection Programming to develop a quiz.	Sensing movement with physical computing.
Crucial Curriculum Content	• Create and adapt programs that control a sprite's movement. • Develop and improve programs by adding new features and debugging. • Design, build, and evaluate a simple maze-based game	• Understand and apply repetition using count-controlled loops. • Distinguish between count-controlled and infinite loops and modify loops appropriately. • Design and create programs that include repetition.	• Understand how selection and conditional statements control program behaviour. • Know how selection directs the flow of a program. • Design, create, test and improve programs using selection.	• Understand how controllable devices use programs, inputs, and outputs. • Apply selection and variables to guide program behaviour. • Design, develop, and improve physical computing projects.
Key Concepts	• Programming	• Design and development • Programming	• Algorithms and data structures • Programming	• Programming

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Lesson outcomes	1. Can explain how a sprite moves in programming project. 2. Can create a program to move a sprite in four directions. 3. Can adapt a program to a new contract. 4. Can develop my program by adding features. 5. Fix the bugs that I find in a program. 6. Can create and evaluate a maze-based game.	1. Can use count-controlled loops. 2. Tell the difference between count-controlled loops and infinite loops. 3. Develop a design that included two or more loops. 4. Modify an infinite loop in a given program. 5. Design a project that includes repetition. 6. Create a project that includes repetition.	1. Explain how selection is used in computer programs. 2. Explain that a conditional statement can connect a condition to an outcome. 3. Explain how selection directs the flow of the program. 4. Design a program that uses selection. 5. Create a program that uses selection. 6. Evaluate and improve a program.	1. Create a program to run on a controllable device. 2. Explain that selections can control the flow of a program. 3. Update a variable based on the state of an input. 4. Use a conditional statement to compare a variable to a value. 5. Design a project that uses inputs and outputs on a controllable device. 6. Develop a program to use inputs and outputs on a controllable device.
Key Vocabulary	Sprite, event, duplicate, extension block, debug, maze, algorithm, action.	Repetition, Algorithm, command, decomposition, outcome, pattern, count-controlled, infinite.	Selection, condition. Flow, outcome, debug, evaluate, statement.	Controllable, selection, variable, input, output, conditional. Project, microcontroller.
ACE (Aspire, Collaborate, Experience) links	**Aspire-** Improving their work through debugging and refinement. **Collaborate-** Testing each other's maze games and giving feedback.	**Aspire-** design projects that include multiple loops **Collaborate-** Helping peers debug infinite loops and modify count-controlled loops.	**Aspire-** to create a fully functioning quiz that behaves reliably. **Collaborate-** to improve and refine coding choices. **Experience-** programming practice by designing, coding, testing, and	**Aspire**- challenge themselves to use inputs, outputs, variables, and selection in combination**.** **Collaborate-** discuss how selection and variables affect outcomes and share debugging strategies.

	Experience- Programming sprites to move within a maze environment.	**Experience-** Seeing how repetition improves efficiency in programming.	evaluating a selection-based project.	**Experience-** explore how sensors, inputs, and outputs work in everyday technology.

How each intention is met across units of work

Intention 1: Confident and knowledgeable users of technology			
Year 3	**Year 4**	**Year 5**	**Year 6**
Pupils begin to develop confidence in using technology by exploring how digital devices work and how computers are used in school and everyday life. Through activities such as identifying the key parts of a computer and exploring how digital devices input, process, and output information, pupils begin to understand that computers carry out tasks for humans and must be given clear instructions.	Pupils build on prior learning by developing a clearer understanding of computer systems and introducing the concept of networks. Through exploration activities, pupils learn how devices are connected locally and begin to understand how information is shared between computers, developing a more secure understanding of how technology supports communication.	Pupils develop increasing independence in their use of technology and deepen their understanding of computer networks, including how data is transferred across the internet. Through practical examples, pupils begin to appreciate how technology connects people and services globally.	Pupils consolidate their understanding of computing systems, networks, and digital tools, using technology independently and confidently. They demonstrate a secure understanding of how digital systems work and how technology impacts individuals and society.

Intention 2: Be confident, effective and creative ICT users			
Year 3	**Year 4**	**Year 5**	**Year 6**
Pupils experience using digital tools to create and present content, such as producing	Pupils use a wider range of digital tools to create purposeful content, such as digital stories,	Pupils confidently use digital tools to create more complex media, such as audio-enhanced	Pupils independently select and combine tools to create high-quality digital outcomes

simple digital posters or presentations that combine text and images. Through structured tasks, they begin to explore how technology can be used creatively to share learning in different subjects and begin to select appropriate tools for specific purposes.	presentations, or simple animations. They begin to evaluate their work, considering how well their digital creations meet the needs of an audience and how tools can be used effectively and creatively.	presentations, stop-frame animations, or multimedia reports. They make informed choices about which tools best suit their purpose, supporting both creativity and effectiveness.	such as multimedia presentations, digital portfolios, or information campaigns. Creativity and technical skill are demonstrated through purposeful design choices and effective communication.

Intention 3: To design, write and debug programs			
Year 3	**Year 4**	**Year 5**	**Year 6**
Pupils are introduced to block-based programming through simple projects such as creating animations or directing a character through a maze. They learn to create programs using sequencing and begin to predict what a program will do. When outcomes are not as expected, pupils start to identify and	Programming develops to include repetition and selection. Pupils design and write programs such as quizzes or games that respond to user choices. They test their programs systematically, identify logical errors, and refine their code, strengthening their ability to debug and improve their work.	Programming knowledge is extended through the use of variables and user input. Pupils create projects such as interactive games or simulations that respond to player choices and changing values. They debug more complex programs by testing sections of code and refining logic to improve performance.	Pupils confidently design, write, adapt, and debug programs using sequencing, repetition, selection, variables, and inputs. Projects may include games, simulations, or problem-solving programs that require logic, planning, and evaluation. Pupils test, debug, and refine their solutions, explaining how and why changes improve outcomes.

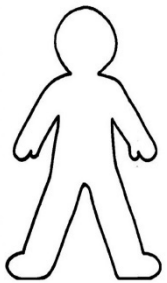
correct simple errors, developing early debugging skills.			

Intention 4: Responsible, safe, and ethical digital citizens			
Year 3	**Year 4**	**Year 5**	**Year 6**
Pupils begin to develop awareness of online safety by learning about keeping personal information private and recognising trusted adults and websites. Through discussion and scenarios, they learn that technology should be used respectfully and that not all information online is suitable or reliable.	Pupils learn about appropriate online communication and begin to recognise that digital content can be shared widely. They explore scenarios linked to online behaviour and start to understand the importance of being respectful and making responsible choices when communicating digitally.	Pupils explore digital identity and online reputation, developing an understanding of digital footprints and the long-term impact of online behaviour. They learn strategies for managing information safely and respectfully in online spaces.	Pupils demonstrate a mature understanding of online safety, ethics, and responsibility. They evaluate the reliability of online information, understand the consequences of digital actions, and show readiness to use technology safely and respectfully in secondary school and beyond.

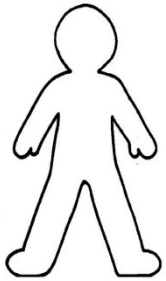
Intention 5: Apply computing across the curriculum			
Year 3	**Year 4**	**Year 5**	**Year 6**
Computing is applied to support learning across subjects, for example by using digital tools to present work in history or geography or by collaborating	Technology is increasingly used across subjects to support research, collaboration, and presentation. Pupils may, for example, use digital tools to	Pupils apply computing skills confidently across subjects, for example using spreadsheets to analyse data in mathematics or creating digital presentations to	Computing is embedded seamlessly across the curriculum. Pupils use technology to collaborate, communicate, analyse information, and present

with peers to create shared digital outcomes. These experiences help pupils understand that technology can support learning beyond computing lessons.	organise information in science or work collaboratively on shared documents, reinforcing the role of computing as a cross-curricular tool.	explain scientific processes. Technology is used purposefully to support enquiry, collaboration, and communication.	learning independently across a range of subjects, ensuring they leave KS2 well prepared for further study.

End Points/Impact

1. <u>Confident and knowledgeable users of technology</u> Can recognise that computers and digital devices follow instructions to carry out tasks. They will identify basic parts of a computer system and use appropriate vocabulary to describe how technology is used in school and everyday life.	**<u>A great Computer Technician in Year 3</u>** 	4. <u>Responsible and safe.</u> Will understand how to keep personal information private and recognise appropriate behaviour when using technology. They will know who to ask for help if they feel unsure or unsafe online.
2. <u>Effective and creative ICT users</u> Will use simple digital tools to create and present content, combining text and images. They will begin to use technology creatively to share ideas and learning outcomes with support.		5. <u>Apply computing across the curriculum</u>. Will use technology to support learning in other subjects, such as creating simple digital presentations or collaborating with peers on shared tasks.
3. <u>Design, write and debug programs.</u> Will design and write simple programs using sequencing. They will predict what their		

program will do and identify and fix simple errors when outcomes are not as expected.		

1. <u>Confident and knowledgeable users of technology</u> Will demonstrate an emerging understanding of computer systems and networks, explaining how devices can connect and share information using appropriate computing vocabulary.	**<u>A great Computer Technician in Year 4</u>** 	4. <u>Responsible and safe.</u> Demonstrate respectful online communication and understand that digital content can be shared widely. They will begin to recognise the importance of reliable information and positive online behaviour.
2. <u>Effective and creative ICT users.</u> Create purposeful digital content for different audiences, using a range of tools effectively. They will begin to evaluate their digital work and suggest improvements.		5. <u>Apply computing across the curriculum.</u> Use computing to research information, organise ideas, and collaborate with others across subjects, recognising technology as a tool for learning.
3. <u>Design, write and debug programs.</u> Design, write, and debug programs that include sequencing, repetition, and selection. They will test their programs systematically and make improvements to increase accuracy and effectiveness.		

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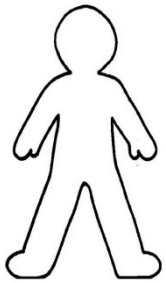
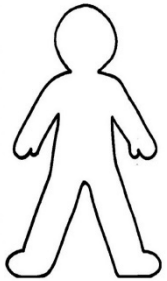
1. <u>Confident and knowledgeable users of technology.</u> Demonstrate a clear understanding of computer networks and how data is transferred between devices. They will explain how technology connects people and systems locally and globally.	**<u>A great Computer Technician in Year 5</u>** 	4. <u>Responsible and safe.</u> Understand digital identity and online reputation, explaining how online actions can have long-term consequences. They will demonstrate responsible behaviour when sharing information online.
2. <u>Effective and creative ICT users.</u> confidently create high-quality digital outcomes using a range of tools and media. They will make informed and creative choices to meet a specific purpose or audience.		5<u>. Apply computing across the curriculum.</u> Apply computing skills across subjects, using tools such as spreadsheets, presentations, and digital media to analyse information, communicate ideas, and collaborate effectively.
3. <u>Design, write and debug programs</u> Will design, write, adapt, and debug programs using variables, inputs, and control structures. They will use logical reasoning to identify errors and refine programs to improve functionality.		

1. <u>Confident and knowledgeable users of technology.</u> Demonstrate a secure understanding of computing systems, networks, and digital	**<u>A great Computer Technician in Year 6</u>**	<u>4 Responsible and safe.</u> Demonstrate a mature understanding of online safety, digital ethics, and the responsible use of technology. They will be

tools. They will confidently explain how technology works and how it impacts individuals and society.		prepared to manage digital risks independently and make informed choices online.
2. <u>Effective and creative ICT users.</u> Independently select and combine digital tools to create high-quality outcomes that communicate ideas effectively. They will demonstrate creativity, technical accuracy, and thoughtful design.		5. <u>Apply computing across the curriculum.</u> Apply computing seamlessly across the curriculum, using technology independently to collaborate, problem-solve, analyse information, and present learning in preparation for secondary school.
3. <u>Design, write and debug programs.</u> Confidently design, write, adapt, and debug programs using sequencing, repetition, selection, variables, and inputs. They will evaluate and improve solutions through systematic testing and reflection.		

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National Curriculum for KS2

Key stage 2

Pupils should be taught to:

- 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.

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What the subject looks like at Cavendish Close

Computing at Cavendish Close Junior Academy is taught as a practical, progressive, and inclusive subject that enables children to aspire, collaborate, and experience technology in purposeful and meaningful ways. Through a carefully sequenced curriculum aligned with the Oak National Academy KS2 computing framework, pupils develop the knowledge, skills, and confidence needed to become effective, creative, and responsible users of technology.

Across the school, pupils receive one computing lesson per week, taught using Oak Academy resources to ensure high-quality, well-structured, and progressive learning. Lessons focus on developing pupils' understanding of computer systems, programming, data and information, digital media, networks, and online safety. Learning builds year on year, allowing pupils to revisit and extend knowledge, vocabulary, and skills as their confidence and technical understanding grow.

Computing at CCJA is highly practical. Pupils are given regular opportunities to design, write, adapt, and debug programs, create digital content, analyse data, and solve problems using technology. Programming is taught through age-appropriate environments, with pupils learning to use sequencing, repetition, selection, variables, and inputs. Creative digital outcomes may include animations, games, presentations, digital publications, and multimedia projects, enabling pupils to express their learning in engaging and meaningful ways.

iPads are used daily across the curriculum, supporting both computing lessons and wider learning. Pupils regularly use iPads for research, reading and comprehension through myON and Accelerated Reader, and for mathematics practice using Sumdog and TT Rock Stars. This regular access helps pupils develop fluency, independence, and confidence in selecting and using digital tools appropriately.

Online safety underpins all computing learning. Pupils are taught how to use technology safely, responsibly, and ethically, developing an understanding of digital citizenship, online behaviour, privacy, and the impact of technology on individuals and wider society. These messages are revisited regularly to ensure pupils can apply them confidently in real-world contexts.

Computing learning is evidenced through a range of formats rather than in traditional exercise books. Work may be recorded and shared via ClassDojo or Microsoft Teams, with digital outcomes and completed worksheets stored in a whole-class computing folder. Evidence of learning includes programmed projects, digital media creations, saved files, collaborative work, and teacher observations, reflecting the practical nature of the subject.

Computing is applied across the curriculum to support learning in all subjects. Pupils collaborate using digital tools, research information, present ideas creatively, and use technology to enhance understanding. This cross-curricular approach ensures pupils recognise computing as a powerful tool for learning, communication, and problem-solving.

Through engaging lessons, regular hands-on experiences, and purposeful use of technology, computing at Cavendish Close Junior Academy promotes confidence, creativity, and curiosity. Pupils leave CCJA as ACE computing technicians — aspirational learners who collaborate effectively, experience technology positively, and are well prepared for the digital demands of secondary education and beyond.