Computing
at
Castle Camps C. of E. (V.C.) Primary School

Life in all its fullness

Intent

At Castle Camps Primary School, our Computing curriculum allows pupils to develop their critical thinking and problem solving skills through open-ended explorations. It is a key goal for our pupils to understand how important digital literacy is to many aspects of their lives. By becoming technologically literate, our pupils will be more able to engage successfully in modern life. The computing curriculum enables pupils to understand the different layers of computing. Computing involves analysing data, writing and debugging computer programs, discovering new technologies to solve problems, and developing basic technology skills. In our current world, it is also important for children to safely access computer information. As our pupils become more exposed to technology, it is critical that they be aware of their digital footprints, and the real-life consequences of their online actions.

We want our pupils at Castle Camps to enhance their basic computing skills in order to solve problems; recognise that data can be explored, understood, and studied through modelling; and develop analytical problem solving skills. We also aim for each child to gain proficiency in algorithmic thinking through engaging in goal-oriented computing tasks.

Cambridge is world-renowned as a global centre for the development of science and technology. Our pupils are especially lucky to be within close proximity to the Cambridge Science and Innovation Parks. This way, Castle Camps takes full advantage of the experts in our community, such as through the Raspberry Pi Foundation. These diverse professionals will inspire our pupils, and help them to recognise how computing is important not only for technological development, but for their local community.

Our school recognises the need for gender equality in the computer technology industry. It is a key goal of every teacher at Castle Camps to work towards actively deconstructing the societal barriers that face many of our pupils. This means not only teaching technical content, but also providing our pupils with a diverse group of scientific role models. By bringing in local community members, our pupils will be able to see themselves in our current computer scientists. It is our hope that this unique opportunity opens aspirational doors for our pupils, especially our female pupils and pupils of colour, and leads every pupil to dream big.

Implementation

Computing at Castle Camps, closely follows the National Curriculum and is supplemented by detailed units from the National Centre for Computing Education (TEACH programme). The NCCE is run by a consortium made up of STEM Learning, the Raspberry Pi Foundation and BCS, The Chartered Institute for IT. Our Computing curriculum provides pupils the ability to break down and analyse given information and synthesise meaningful interpretations. Our curriculum also allows pupils the opportunity to critically consider a given problem and be expected to determine the necessary logical steps to create a solution.

By spending time solving problems, our pupils will develop necessary life skills such as patience, determination, resilience, an appreciation and ability to be inquisitive, as well as learning to utilise both creative and systematic ways of thinking. Central to the Computing curriculum is a way of thinking, through which our pupils will apply mathematical skills creatively in a variety of contexts. By

working both independently and in groups, a balance of teamwork skills and self-reliance will be emphasised.

Impact

Over the course of learning in EYFS, Key Stage 1, and Key Stage 2 pupils will have been exposed and given the opportunity to develop their critical thinking and problem solving skills based on the analysis of real world data. Each year group's curriculum builds upon the knowledge of the previous year. This allows pupils to work towards a deep knowledge of the many facets of computing. As pupils move into the next key stages, they will not only be ready for more in-depth computing, but will also have gained invaluable and generally applicable skills that will allow them to grow and flourish as independent thinkers. Independent thinkers are those that challenge the information that they are exposed to and develop their own opinion on it based on logical processes. This is what we hope to accomplish; that children do not merely accept the world as it is but rather understand the world around them actively through the lens of logical and creative thinking. Thus our pupils are expected to not merely receive knowledge from others, but actively participate in the creation of knowledge.

National Curriculum

Key Stage 1

Pupils should be taught to:

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

Key Stage 2

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.

Whole School Subject Overview (2 year plan)
Computing Progression Year A 2025/2026

Computing Glossary:

Vocabulary is an important part of teaching and learning. This glossary, provides a selection of the computing-specific vocabulary:
https://teachcomputing.org/primary-computing-glossary#glossary

	Hedgehogs	Squirrels		Rabbits		Badgers		Deer
	EYFS 3-4 R ELG	Y1	Y2	Y2	Y3	Y4	Y5	Y6
Autumn 1	Algorithms and programming: NURSERY - Make a Bee-bot or similar move. With support, make a Bee-bot move for a particular purpose. Explore and use simple repetition in music and dance. Say what will happen when I press/ swipe on a game using the Ipad or whiteboard. Match their developing physical skills to tasks and activities in the setting.(PD)	**Y1** Computing systems and networks – Technology around us		Y2 Computing systems and networks – IT around us		Y4 Computing systems and networks – The Internet		Y5 Computing systems and networks – Sharing information
		Key Vocabulary - technology, devices, communication, multimedia, internet, World Wide Web, webpage, website		**Key Vocabulary -** internet, World Wide Web, webpage, website, Search query, search engine, 'Save as', Filters in search engines, Email, QR code, Network Image & text sources		**Key Vocabulary -** Reliable websites, Plagiarism, Network path, Shared folder, Gadget, Blog post, Searching the web vs. internet Internet vs. World Wide Web, Web search results, Network, Digital content, Online community Online vs. offline		**Key Vocabulary -** Searching the web vs. internet Internet vs. World Wide Web, Web search results, Network, Digital content, Online community Online vs. offline, Internet access, Online communication tools, Ranked, selected, search results, URL, Banner Menu
Autumn 2	Algorithms and programming: RECEPTION – Use a range of control toys and devices. Understand that goals can be achieved by following a sequence of steps. Programme a Bee-bot, or similar, one instruction at a	Y1 Creating media – Digital painting		Y3 Creating media – Desktop publishing		Y4 Creating media – Photo editing		Y6 Data and information – Spreadsheets
		Key Vocabulary - Keyboard, app/software, Interactive Camera / camera roll,		**Key Vocabulary -** Animation, Software, App, Sound effects, Text, Gif, Presentation		**Key Vocabulary -** Text appearance, Slideshow, Screen capture, Still & moving images,		**Key Vocabulary -** Spreadsheet, Operators, and/or Plausibility,

	time and clear it at the end. Recognise that there is a problem and say what the problem is. Make predictions about what a programme will do/ do next. Show resilience and perseverance in the face of a challenge. (PSED) Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (PSED) Information Technology: NURSERY – Use technology appropriately through role play. Recognise some technology that is used at home and school. Information Technology: RECEPTION – Select and use technology for a particular purpose. Name a keyboard and mouse and use with developing control. Use digital devices to create and store content. Eg. Taking photos, videoing, art work. Explore, use and refine a variety of artistic effects to express their ideas and feelings.(EAD) Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (PSED) Safely use and explore a variety of materials, tools and techniques,	Animation, Software App, Sound, effects, Text, Gif, Presentation, software, Slideshow, Video, Animation, USB cable & socket	software, Slideshow Video, Graphics, Screengrab, Upload, Green screen, eBook, Narration, Hyperlinks, Keyboard commands	Text editing, Transitions, Effects, Keyboard, commands & shortcuts, Sound file, Podcast	Findings, Investigation, Process, Outcomes, Routers, Choice, fields, Interactive display
Spring 1		Y2 Programming A – Robot algorithms	Y2 Programming A – Moving a robot Y3 - Scratch Junior - Creating a simple animation	Y4 Data and information – Data logging	Y6 Creating media – 3D Modelling
		Key Vocabulary - Program, Algorithm, Instructions, Robot, Command, Sequence, Debug	**Key Vocabulary -** Sequence, Debug, Sprites, Backgrounds, Open-ended, problem, Programming, commands, Repeat, commands, Specific outcome, Variable	**Key Vocabulary -** Database, Copyright-safe, Fields, Criteria, Graphing program, Tally & bar chart, Sub-sets, Yes / no questions, Spreadsheet Operators, and/or Plausibility Findings	**Key Vocabulary -** Text editing, Transitions, Effects, Keyboard commands & shortcuts, Sound file, Podcast, Non-linear presentation, Weblinks, Layout, Slide design, Slide master, Responsible use
Spring 2		Y2 Programming B – An introduction to quizzes	Y3 Data and information – Branching databases	Y5 Creating media – Vector drawing	Y6 Creating media – Web page creation
		Key Vocabulary - Program, Algorithm, Instructions, Robot, Command, Sequence, Debug	**Key Vocabulary -** Branching, database, Decision tree, Block graph, Chart Sets, Outcomes, Datalogger Vertical / horizontal, bar chart, Pie chart	**Key Vocabulary -** Text, appearance, Slideshow, Screen capture, Still & moving images, Text editing, Transitions, Effects, Keyboard commands & shortcuts, Sound file, Podcast	**Key Vocabulary -** Text editing, Transitions, Effects, Keyboard, commands & shortcuts, Sound file, Podcast, Non-linear presentation, Weblinks, Layout, Slide design, Slide master, Responsible use
Summer 1		Y1 Creating media – Digital writing	Y2 Programming B – An introduction to quizzes	Y5 Programming A – Selection in physical computing	Y5 Programming A – Selection in physical

	experimenting with colour, design, texture, form and function. (EAD) Digital literacy – NURSERY - Use technology appropriately through role play. Recognise some technology that is used at home and school. Online safety - Speak to an adult about what we have seen. Say if something I have seen on the Internet makes me feel bad. Remember rules without needing an adult to remind them.(PSED) Explore how things work.(UTW) Digital literacy RECEPTION – select and use technology for a particular purpose. Access and use simple activities using touch technology with increasing control. Name some uses of IT beyond school. Eg. Audio books, watching films, listening to music, creating paintings. Develop their small motor skills so that they can use a range of tools competently, safely and confidently.(PD) Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. (EAD)				computing
		Key Vocabulary - Keyboard, app/software Interactive Camera / camera roll Animation, USB cable & socket, Animation, Software App, Sound effects, Text, Gif, Presentation, software, Slideshow Video	**Key Vocabulary -** Sequence, Debug, Sprites, Backgrounds, Open-ended, problem, Programming, commands, Repeat, commands, Specific outcome, Variable	**Key Vocabulary -** Array, Tools, Error, Logical thinking, Number sequences, Variable 'if' 'then' commands, Input, output, Programming, blocks, Pattern recognition, Number system, Computer, model, Physical system, Command sequence	**Key Vocabulary -** Number sequences, Variable 'if' 'then' commands Input, output, Programming, blocks, Pattern recognition, Number system, Computer model, Physical system, Command sequence, Planned outcome, Digitally discerning, Internet services, Screen elements, Mouse movements, Logical reasoning, Bugs
Summer 2		Y2 Creating media – Making music	Y3 Creating media – Animation	Y5 Programming B – Selection in quizzes	Y5 Programming B – Selection in quizzes
		Key Vocabulary - Keyboard, app/software, Interactive Camera / camera roll, Animation, USB cable & socket Animation Software, App, Sound effects, Text, Gif, Presentation software, Slideshow, Video	**Key Vocabulary -** Animation, Software, App, Sound effects, Text, Gif, Presentation software, Slideshow, Video Graphics, Screengrab, Upload, Green screen, eBook, Narration, Hyperlinks, Keyboard, commands	**Key Vocabulary -** Array, Tools, Error, Logical thinking, Number sequences, Variable 'if' 'then' commands, Input, output, Programming, blocks, Pattern recognition, Number system, Computer, model, Physical system, Command sequence	**Key Vocabulary-** Number sequences, Variable 'if' 'then' commands Input, output, Programming, blocks, Pattern recognition, Number system, Computer model, Physical system, Command sequence, Planned outcome, Digitally discerning, Internet services, Screen elements, Mouse movements, Logical reasoning, Bugs

	<u>Online safety</u> - Know about the need to stay safe when using technology. Know that some information should be kept private. Know what to do if I see things that upset me online at school. **Know and talk about the different factors that support their overall health and wellbeing. (PSED) Sensible amounts of screen time.(PSED)** **Explain the reasons for rules, know right from wrong and try to behave accordingly.(PSED)**				

Computing Progression Year B 2026/2027

Computing Glossary:

Vocabulary is an important part of teaching and learning. This glossary, provides a selection of the computing-specific vocabulary: https://teachcomputing.org/primary-computing-glossary#glossary

	Hedgehogs	Squirrels		Rabbits		Badgers		Deer	
	EYFS 3-4 R ELG	Y1	Y2	Y2	Y3	Y4	Y5	Y5	Y6
Autumn 1	**Algorithms and programming:** **NURSERY -** **Make a Bee-bot or similar move.** **With support, make a Bee-bot move for a particular purpose.** **Explore and use simple repetition in music and dance. Say what will happen when I press/ swipe on a game using the Ipad or whiteboard.** **Match their developing physical skills to tasks and activities in the setting.(PD)** **Algorithms and programming:** **RECEPTION –** **Use a range of control toys and devices.** **Understand that goals can be achieved by following a sequence of steps.** **Programme a Bee-bot, or similar, one instruction at a time and clear it at the end.** **Recognise that there is a problem and say what the problem is. Make predictions about what a programme will do/ do next.** **Show resilience and perseverance in**	Y2 Computing systems and networks – IT around us		Y3 Computing systems and networks – Connecting computers		Y5 Computing systems and networks – Sharing information		Y6 Computing systems and networks – Communication	
		Key Vocabulary - technology, devices, communication, multimedia, internet, World Wide Web, webpage, website		**Key Vocabulary -** internet, World Wide Web, webpage, website, Search query, search engine, 'Save as', Filters in search engines, Email, QR code, Network Image & text sources		**Key Vocabulary -** Reliable websites, Plagiarism, Network path, Shared folder, Gadget, Blog post, Searching the web vs. internet Internet vs. World Wide Web, Web search results, Network, Digital content, Online community Online vs. offline		**Key Vocabulary -** Searching the web vs. internet Internet vs. World Wide Web, Web search results, Network, Digital content, Online community Online vs. offline, Internet access, Online communication tools, Ranked, selected, search results, URL, Banner Menu	
Autumn 2		Y2 Data and information – Pictograms		Y2 Creating media – Digital photography		Y4 Creating media – Audio editing		Y5 Data and information – Flat-file databases	
		Key Vocabulary- Data, Information, Pictograph, Digital format, Branching database, Decision tree, Block graph, Chart, Sets, Outcomes		**Key Vocabulary-** Animation, Software, App, Sound effects, Text, Gif, Presentation software, Slideshow, Video Graphics, Screengrab, Upload, Green screen, eBook,		**Key Vocabulary-** Text, appearance, Slideshow, Screen capture, Still & moving images, Text editing, Transitions, Effects, Keyboard commands & shortcuts, Sound file, Podcast		**Key Vocabulary-** Spreadsheet, Operators, and/or Plausibility, Findings, Investigation, Process, Outcomes, Routers, Choice, fields, Interactive display	

	the face of a challenge. (PSED) Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (PSED) Information Technology: NURSERY – Use technology appropriately through role play. Recognise some technology that is used at home and school. Information Technology: RECEPTION – Select and use technology for a particular purpose. Name a keyboard and mouse and use with developing control. Use digital devices to create and store content. Eg. Taking photos, videoing, art work. Explore, use and refine a variety of artistic effects to express their ideas and feelings.(EAD) Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (PSED) Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. (EAD) Digital literacy – NURSERY - Use technology appropriately through role play. Recognise some technology that is used at home and school. Online safety -		Narration, Hyperlinks, Keyboard, commands		
Spring 1		Y1 Programming A – Moving a robot	Y2 Creating media – Making music	Y4 Programming A – Repetition in shapes	Y5 Creating media – Vector drawing
		Key Vocabulary - Program, Algorithm, Instructions, Robot, Command, Sequence, Debug	**Key Vocabulary -** Animation, Software, App, Sound effects, Text, Gif, Presentation software, Slideshow, Video Graphics, Screengrab, Upload, Green screen, eBook, Narration, Hyperlinks, Keyboard, commands	**Key Vocabulary -** Array, Tools, Error, Logical thinking, Number sequences, Variable 'if' 'then' commands, Input, output, Programming, blocks, Pattern recognition, Number system, Computer, model, Physical system, Command sequence	**Key Vocabulary -** Text editing, Transitions, Effects, Keyboard, commands & shortcuts, Sound file, Podcast, Non-linear presentation, Weblinks, Layout, Slide design, Slide master, Responsible use
Spring 2		Y1 Programming B – Introduction to animation	Y2 Data and information – Pictograms	Y4 Programming B – Repetition in games	Y5 Creating media – Video editing
		Key Vocabulary - Program, Algorithm, Instructions, Robot, Command, Sequence, Debug	**Key Vocabulary -** Branching, database, Decision tree, Block graph, Chart Sets, Outcomes, Datalogger Vertical / horizontal, bar chart, Pie chart	**Key Vocabulary -** Array, Tools, Error, Logical thinking, Number sequences, Variable 'if' 'then' commands, Input, output, Programming, blocks, Pattern recognition, Number system, Computer, model, Physical system, Command sequence	**Key Vocabulary -** Text editing, Transitions, Effects, Keyboard, commands & shortcuts, Sound file, Podcast, Non-linear presentation, Weblinks, Layout, Slide design, Slide master, Responsible use
Summer 1		Y1 Data and information – Grouping data	Y3 Programming A – Sequence in music	Y5 Creating media – Video editing	Y6 Programming A – Variables in games
		Key Vocabulary - Data, Information, Pictograph, Digital format, Branching database,	**Key Vocabulary -** Sequence, Debug, Sprites, Backgrounds, Open-ended, problem,	**Key Vocabulary -** Text, appearance, Slideshow, Screen capture, Still & moving images,	**Key Vocabulary -** Number sequences, Variable 'if' 'then' commands Input,

	Speak to an adult about what we have seen. Say if something I have seen on the Internet makes me feel bad. Remember rules without needing an adult to remind them.(PSED) Explore how things work.(UTW) Digital literacy RECEPTION – select and use technology for a particular purpose. Access and use simple activities using touch technology with increasing control. Name some uses of IT beyond school. Eg. Audio books, watching films, listening to music, creating paintings. Develop their small motor skills so that they can use a range of tools competently, safely and confidently.(PD) Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. (EAD) Online safety - Know about the need to stay safe when using technology. Know that some information should be kept private. Know what to do if I see things that upset me online at school. Know and talk about the different factors that support their overall health and wellbeing. (PSED) Sensible	Decision tree, Block graph, Chart, Sets, Outcomes	Programming, commands, Repeat, commands, Specific outcome, Variable	Text editing, Transitions, Effects, Keyboard commands & shortcuts, Sound file, Podcast	output, Programming, blocks, Pattern recognition, Number system, Computer model, Physical system, Command sequence, Planned outcome, Digitally discerning, Internet services, Screen elements, Mouse movements, Logical reasoning, Bugs
Summer 2		Y2 Creating media – Digital photography	Y3 Programming B – Events and actions	Y5 Data and information – Flat-file databases	Y6 Programming B – Sensing
		Key Vocabulary - Keyboard, app/software, Interactive Camera / camera roll, Animation, Software App, Sound, effects, Text, Gif, Presentation, software, Slideshow, Video, Animation, USB cable & socket	**Key Vocabulary -** Sequence, Debug, Sprites, Backgrounds, Open-ended, problem, Programming, commands, Repeat, commands, Specific outcome, Variable	**Key Vocabulary -** Database, Copyright-safe, Fields, Criteria, Graphing program, Tally & bar chart, Sub-sets, Yes / no questions, Spreadsheet Operators, and/or Plausibility Findings	**Key Vocabulary -** Number sequences, Variable 'if' 'then' commands Input, output, Programming, blocks, Pattern recognition, Number system, Computer model, Physical system, Command sequence, Planned outcome, Digitally discerning, Internet services, Screen elements, Mouse movements, Logical reasoning, Bugs

	amounts of screen time.(PSED) Explain the reasons for rules, know right from wrong and try to behave accordingly.(PSED)				

SMSC in Computing

Spiritual	**Moral**
● Pupils will strengthen their sense of self-reliance and problem solving when building models or debugging code. ● Broaden a pupil's understanding of creative processes that includes being creative when solving a problem, recognising that a problem might not have a simple or straightforward solution. ● In terms of their general problem solving processes, teachers will guide students towards becoming comfortable exploring the unknown.	Recognising the repercussions of what pupils post online in relation to themselves and others. ● Understanding that not all information posted online comes from reputable sources and therefore working with students on how to establish the voracity of what they see and read online. ● Discussing with pupils that both the creator and the user of online tools and information have a shared responsibility in their ethical uses
Social	**Cultural**
Recognising that one's own code or program may be a part of a larger project, worked on by many other individuals of different backgrounds and beliefs. ● Working with pupils to establish a sense of community in the digital world; recognising that a pupil's responsibilities as a member of society extend into the digital world. ● Pupils will learn to use online tools as a resource to gather information and establish opinions of relevance to local, national and global issues, so that they may have the tools to grow into engaged and thoughtful members of British society	● Impart the understanding that not everyone online comes from the same community; there is a vast mix of culture, viewpoints and experience gathered amongst the users of the digital universe. ● Appreciating the opportunity to utilise technology to enable access to a vast array of cultural resources from across the globe, allowing pupils to immerse themselves digitally in other people's way of life and thinking. ● Understanding that positive communities can form online due to shared access to artistic, athletic and other social events irrespective of geographic distance.

Our Feeder Secondary Schools

	Linton Village College	Samuel Ward	St Bede's
Computing Curriculum Links	https://lvc.org/computing/	Not identified on website	https://www.st-bedes.org.uk/assets/Computing-Full-curriculum-map-2023-v2.pdf