



Kessingland Church of England Primary Academy
Computing: Curriculum Overview

Long Term Plan

Computer Science **Information Technology** **Digital Literacy**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YR1	Computing systems and networks – Technology around us	Creating media – Digital painting	Creating media – Digital writing	Data and information – Grouping data	Programming A – Moving a robot	Programming B – Introduction to animation
YR2	Computing systems and networks – IT around us	Creating media – Digital photography	Creating media – Making music	Data and information – Pictograms	Programming A – Robot algorithms	Programming B – An introduction to quizzes
YR3	Computing systems and networks – Connecting computers	Creating media – Animation	Creating media – Desktop publishing	Data and information – Branching databases	Programming A – Sequence in music	Programming B – Events and actions
YR4	Computing systems and networks – The internet	Creating media – Audio editing	Creating media – Photo editing	Data and information – Data logging	Programming A – Repetition in shapes	Programming B – Repetition in games
YR5	Computing systems and networks – Sharing information	Creating media – Vector drawing	Creating media – Video editing	Data and information – Flat-file databases	Programming A – Selection in physical computing	Programming B – Selection in quizzes
YR6	Computing systems and network – Communication	Creating media – 3D Modelling	Creating media – Web page creation	Data and information - Spreadsheets	Programming A – Variables in games	Programming B – Sensing

Internet Safety will be taught throughout the year across each unit of work and on Internet Safety Day. By Year 6, we expect pupils to articulate the good and bad effects of the internet on their own lives and understand the importance of a balanced online lifestyle.

Vision Statement:

At Kessingland Church of England Primary Academy we recognise that we have a responsibility to prepare our children for their future by improving their knowledge, understanding and skills. As computing technology underpins today's modern lifestyle, it is essential that all pupils gain the confidence and ability that they need in this subject, to prepare them for the challenge of a rapidly developing and changing technological world. The spiral curriculum develops a deeper understanding of our curriculum and is built around the three main learning strands of Computer Science, Information Technology and Digital Literacy. The use of Computing also enhances and extends our children's learning across the whole curriculum whilst contributing to motivation and the development of social skills. We firmly believe in the importance of keeping our pupils safe online by delivering a high quality e-safety curriculum alongside the core values of computer science, information technology and digital literacy. As technology develops, so does the need for a better understanding of how to use it in a safe and responsible manner. At Kessingland, we will provide all of our children with the skills, creativity and enthusiasm to live and thrive in a world increasingly dependent on computing.

Our scheme of work:



National Curriculum Coverage – Key Stage 1 Computing Curriculum	1.1 Technology around us	1.2 Digital painting	1.3 Moving a robot	1.4 Grouping data	1.5 Digital writing	1.6 Programming animations	2.1 Information technology around us	2.2 Digital photography	2.3 Robot algorithms	2.4 Pictograms	2.5 Making music	2.6 Programming quizzes
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	✓				✓	✓	✓			✓		

National Curriculum Coverage – Years 3 and 4	3.1 Connecting computers	3.2 Stop-frame animation	3.3 Sequencing sounds	3.4 Branching databases	3.5 Desktop publishing	3.6 Events and actions in programs	4.1 The Internet	4.2 Audio editing	4.3 Repetition in shapes	4.4 Data logging	4.5 Photo editing	4.6 Repetition in games
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							✓	✓			✓	

National Curriculum Coverage – Years 5 and 6	5.1 Sharing information	5.2 Video editing	5.3 Selection in physical computing	5.4 Flat-file databases	5.5 Vector drawing	5.6 Selection in quizzes	6.1 Internet communication	6.2 Webpage creation	6.3 Variables in games	6.4 Introduction to spreadsheets	6.5 3D modelling	6.6 Sensing
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	✓	✓						✓	✓		✓	

How do we meet the statutory guidance for Computing?

KS1 – Computer Science, Information Technology, Digital Literacy

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

KS2 - Computer Science, Information Technology, Digital Literacy

1. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
2. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
3. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
4. 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
5. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
6. 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
7. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Key Concepts:

Key Concept:	Explanation:
Logic	Computational logic is the process of working step-by-step to understand a problem and develop a solution. It describes the decision making process used in programming and writing algorithms.
Abstraction	Abstraction is an important part of computer programming. In computing, abstraction is the technique used to arrange computer systems and hide the complexity of programs to make it more accessible to the everyday user.
Machines	A computing machine is a device used to perform calculations and process data.
Algorithms	An algorithm is a process or set of rules followed in calculations or other problem solving operations, especially by a computer.
Program	A computing program is a collection of instructions that performs a specific task when executed by a computer.
Data	Data is any sequence of one or more symbols given meaning by a specific acts of interpretation. Computer data is information processed or stored by a computer.
Safety and security	Understand risks when using technology, and how to protect individuals and systems.
Creative media	Select and create a range of media including text, images, sounds and videos.
The impact of technology	Understand how individuals, systems, and society as a whole interact with computer systems.

Domains of Knowledge:

Computer networks	Understand how networks can be used to retrieve and share information, and how they come with associated risks
Computer systems	Understand what a computer is, and how its constituent parts function together as a whole
Creating media	Select and create a range of media including text, images, sounds, and video
Data and information	Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
Design and development	Understand the activities involved in planning, creating, and evaluating computing artefacts
Effective use of tools	Use software tools to support computing work
Impact of technology	Understand how individuals, systems, and society as a whole interact with computer systems
Programming	Create software to allow computers to solve problems
Algorithms	Be able to comprehend, design, create, and evaluate algorithms
Safety and security	Understand risks when using technology, and how to protect individuals and systems

End Points:

Computer Science: Design, write and debug programs using logical reasoning and explain how algorithms work to detect and correct errors.

Digital Literacy: Use technology safely, respectfully and responsibly to be able to recognise acceptable/ unacceptable behaviour, and identify a range of ways to report concerns about content and contact.

Information Technology: Understand computer networks and software to design and create a range of programs, systems and content on a range of digital devices suitable for communication and collaboration.