Bishop Ellis Catholic Voluntary Academy

Computing Intent

Ambition for Computing at Bishop Ellis

For all children to have a breadth of knowledge and experience to become competent end-users of technology.

At Bishop Ellis Catholic Primary School, we aim to provide a high-quality computing curriculum that enables all children to acquire a broad and deep knowledge of technology whilst providing them with opportunities to apply skills in various digital contexts. We want to ensure that our curriculum is accessible to every child. Our intention is to promote an enthusiasm and appreciation of computing through well-planned lessons, allowing all children to be digitally literate and develop their creativity, resilience, and problem-solving and critical thinking. As children progress, we aim for all children to become independent users of computing systems, with confidence and an enjoyment for their activities. Beyond teaching computing explicitly, we want to give children the opportunity to apply and develop use of technology to support learning across the curriculum.

Love of the subject

We want to inspire our pupils to become active participants in the digital world through their thinking and their creativity. It is important to us that the children understand how to use the ever-changing technology to express themselves, as tools for learning and as a means to drive their generation forward into the future. We want to enable all children to embrace and utilize technology in a responsible and safe way as we know that technology is everywhere and will play a pivotal part in their lives.

Curriculum Aims

- Understand and apply fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. (Computer Science)
- Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. (Computer Science)
- Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems. (Information Technology)
- Be responsible, competent, condiment and creative users of information and communication technology. (Digital Literacy)

Impact

In order to demonstrate that we have a accomplished our aims, all children should:

- Be confident and enthusiastic in their approach towards computing.
- Present as competent and adaptable 'Computational Thinkers' who are able to use identify concepts and approaches in all of their learning.
- Be able to identify the source of problems and work with perseverance to 'debug' them.
- Have a secure understanding of the positive applications and specific risks associated with a broad range of digital technology.
- Transition to secondary school with a keen interest in the continuous learning of this subject.
- Enjoy and value Computing and know why they are doing things, not just how.

BISHOP ELLIS COMPUTING CURRICULUM PLAN

2024 – 2025						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
Reception JB / GS	Computer Systems and Networks – Using a Computer Online Safety Lesson 1		Programming 1 – All About Instructions Online Safety Lesson 2	Computing Systems and Networks – Exploring a Hardware Online Safety Lesson 3	Programming 2 – Programming Bee-Bots Online Safety Lesson 4	Data Handling – Introduction to Data Online Safety Lesson 5
Year 1 ST	Computing Systems and Networks- Mouse Skills Online Safety Lesson 1	Programming – Bee-Bot Online Safety Lesson 2	Data Handling – Introduction to Data Online Safety Lesson 3		Creating Media – Digital Imagery Online Safety Lesson 4	
Year 2 HJ	Programming – Algorithms Unplugged Online Safety Lesson 1	Programming – Bee-Bots Online Safety Lesson 2	Programming – Algorithms and Debugging Online Safety Lesson 3		Programming – Scratch Jr Online Safety Lesson 4	
Year 3 / 4 MP / LGo / LGu	Programming – Scratch Jr	Programming – Further Coding with Scratch	Programming – Computational Thinking		Data Handling – Investigating Weather	
Year 4 / 5 RF	Programming – Computational Thinking	Programming- Micro-bit (y5)	Creating Media – Website design (y4)		Creating Media- Stop Motion	
Year 5 /6 LB / SF	Programming – Music	Programming – Intro the Python	Creating Media – Stop Motion		Computing Systems and Networks - Bletchley Park and the History of Computers	

Online Safety for Yr 3 – 6 covered through TenTen (RSE/PSHE)

BISHOP ELLIS COMPUTING CURRICULUM PLAN

YEAR GROUP. EYFS						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
UNIT OF WORK and KEY CONCEPTS	Computer Systems and Networks – Using a Computer To be able to understand what a computer keyboard is and recognising some letters and numbers. To know that a mouse can be used to click, drag and create simple drawings. To know that to use a computer you need to log in to it and then log out at the end of your session.		Programming 1 – All About Instructions To know that being able to follow and give simple instructions is important in computing. To understand that it is important for instructions to be in the right order. To understand why a set of instructions may have gone wrong.	Computing Systems and Networks – Exploring a Hardware To know that different types of technology can be found at home and in school. To know that you can take simple photographs with a camera or iPad. To know that you must hold the camera still and ensure the subject is in the shot to take a photo.	Programming 2 – Programming Bee-Bots To know that being able to follow and give simple instructions is important in computing. To understand that it is important for instructions to be in the right order. To understand why a set of instructions may have gone wrong.	Data Handling – Introduction to Data To know that sorting objects into various categories can help you locate information. To know that using yes/no questions to find an answer is a branching database.

BISHOP ELLIS COMPUTING CURRICULUM PLAN

YEAR GROUP. YEAR 1						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
UNIT OF WORK, ENQUIRY QUESTIONS and KEY CONCEPTS	Computing Systems and Networks- Mouse Skills To know that "log in and log out" means to begin and end a connection with a computer. To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art. To know that passwords are important for security. To know that when we create something on a computer it can be more easily saved and shared than a paper version. To know some of the simple graphic design features of a piece of online software.	Digital painting Creating media, Effective use of tools In this unit, pupils develop their understanding of how to manipulate digital devices by using painting tools. They practise by creating digital paintings, gaining inspiration from the work of artists whilst reflecting on their preferences when painting with and without the use of digital devices. Painting using computers Using lines and shapes to create digital pictures Creating digital pictures in the style of an artist Choosing the right digital painting tool Using the paintbrush tool to create digital pictures Comparing computer art and painting.	Digital writing Creating media Effective use of tools This unit covers various aspects of using a computer to create and manipulate text. Pupils will become familiar with using a keyboard and mouse to enter and remove text. They will consider how to change the look of their text, and will be able to justify their reasoning for making these changes. Exploring the keyboard Adding and removing text Make changes to text Exploring the toolbar Choosing formatting tools Comparing digital writing to using a pencil		Creating animations in programs Design and development Programming In this unit pupils are introduced to on-screen programming through ScratchJr. Pupils will explore the way a project looks onscreen by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs that move objects. Programming using command blocks Joining command blocks Changing values in a program Controlling sprites Designing an animated program Testing a program	

BISHOP ELLIS COMPUTING CURRICULUM PLAN

YEAR GROUP. YEAR 2						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
UNIT OF WORK, ENQUIRY QUESTIONS and KEY CONCEPTS.	Information technology in the world beyond school Computing systems Networks Safety and security In this unit pupils develop their understanding of what information technology is and will begin to identify examples. Pupils will discuss where they have seen IT in school and beyond. They will investigate how IT improves our world whilst also recognising the importance of using IT responsibly. Introduction to information technology Information technology in school Information technology in the world Benefits of information technology Using information technology safely Making choices when using information technology		Using IT to organise and present data Data and information Effective use of tools In this unit pupils will explore what the term data means and how data can be collected. They will explore how attributes can be used to organise data and how data can be presented in the form of pictograms and block diagrams. Pupils will use the data presented to answer questions. Counting and comparing data Entering data Creating pictograms Attributes in data Comparing data Presenting information clearly		Building sequences in programs Design and development Programming In this unit, pupils will begin to understand that sequences of commands have an outcome and will start to make predictions about what these outcomes may be. Pupils will use and modify designs to create their own quiz questions using sequences of code blocks. Programming sequences Outcomes of sequences Building blocks to create a sequence Programming multiple sprites and backgrounds Designing and creating a quiz program Evaluating and improving a program	

BISHOP ELLIS COMPUTING CURRICULUM PLAN

YEAR GROUP. YEAR 3						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST2
UNIT OF WORK, ENQUIRY QUESTIONS and KEY CONCEPTS.	Computer networks Computing systems Networks In this unit pupils will explore digital devices, with an initial focus on inputs, processes, and outputs. Pupils will be introduced to computer networks, including devices that make up a network infrastructure and the benefits of connecting devices in a network. Digital devices Designing a digital device Digital devices for different activities Connecting digital devices Transferring information between devices Physical components of a computer network	Programming sequence using sound Design and development Programming This unit explores the concept of sequencing in programming. Pupils will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. Pupils will make a representation of a piano where they will explore sequence through sound. Programming in a block-based environment Programming sprites Sequences Ordering commands Combining code blocks in a sequence Creating a project using a block-based environment	Organising data using databases Data and information This unit develops pupils' knowledge of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Pupils will create an identification tool using a branching database. Yes or no questions for data collection Making groups of data Creating a branching database Structuring a branching database Planning a branching database Creating identification tools		Events and actions in programs Programming In this unit, pupils explore the link between events and actions. Pupils begin by moving a sprite in four directions (up, down, left, and right) and then explore movement within the context of a maze. This unit also introduces programming extensions, through the use of Pen blocks. Moving a sprite Program a sprite to move around a maze Using the pen tool in a program Adding features to a program Debugging movement Creating a maze project	

BISHOP ELLIS COMPUTING CURRICULUM PLAN

YEAR GROUP. YEAR 4						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST2
UNIT OF WORK, ENQUIRY QUESTIONS and KEY CONCEPTS.	The internet Networks Safety and security In this unit pupils will recognise the internet as a network of networks. They will learn that the World Wide Web is part of the internet. They will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. Connecting networks The internet and World Wide Web Sharing information Content on the World Wide Web Ownership and the World Wide Web Reliability of content on the World Wide Web	Repetition in programs Algorithms and data structures Programming In this unit pupils will create text-based programs which use repetition. They will plan, modify, and test commands to create shapes and patterns. They will explore the different types of loops that can be used to repeat commands in a program. Programming a screen turtle Creating an algorithm in a text-based programming language Patterns and repeats Count-controlled loops Procedures in programming Designing a program that uses loops	Organising data using databases Data and information This unit develops pupils' knowledge of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Pupils will create an identification tool using a branching database. Yes or no questions for data collection Making groups of data Creating a branching database Structuring a branching database Planning a branching database Creating identification tools		Audio production Creating media Effective use of tools In this unit pupils will discover the input and output devices required to work with sound digitally. They will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. Pupils will develop skills in editing and track manipulation by creating a podcast. Recording sounds Editing audio Planning a podcast Creating a podcast Combining audio Evaluating podcasts	

BISHOP ELLIS COMPUTING CURRICULUM PLAN

YEAR GROUP. YEAR 4 and 5						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
UNIT OF WORK, and KEY CONCEPTS.	**The internet** In this unit pupils will recognise the internet as a network of networks. They will learn that the World Wide Web is part of the internet. They will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. Connecting networks The internet and World Wide Web Sharing information Content on the World Wide Web Ownership and the World Wide Web Reliability of content on the World Wide Web	**Audio production** In this unit pupils will discover the input and output devices required to work with sound digitally. They will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. Pupils will develop skills in editing and track manipulation by creating a podcast. Recording sounds Editing audio Planning a podcast Creating a podcast Combining audio Evaluating podcasts	**Photo editing** In this unit pupils will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices. Changing digital images Recolouring digital images Cloning digital images Combining images Creating digital images for a purpose Evaluating digital images		**Video production** In this unit pupils will discover how to create short videos. As they progress through this unit, they will develop the skills of capturing, editing, and manipulating video. Pupils are guided with step-by-step support to take their idea from conception to completion and evaluation. What is a video? Filming techniques Using a storyboard Planning a video and script writing Importing and editing video Video editing and evaluation	

BISHOP ELLIS COMPUTING CURRICULUM PLAN

YEAR GROUP. YEAR 5 and 6						
TERM	ADVENT 1	ADVENT 2	LENT 1	LENT 2	PENTECOST 1	PENTECOST 2
UNIT OF WORK, and KEY CONCEPTS.	Introduction to computer systems Networks In this unit pupils will explore computer systems and how information is transferred between devices. They will explore the input, output and processes of a variety of different real-world systems. Pupils will discover how information is found on the WWW through learning how search engines work. Digital systems Computer systems in society and the impacts of AI Searching the web Selecting search results How search results are ranked How search results can be influenced	Video production Creating media Effective use of tools In this unit pupils will discover how to create short videos. As they progress through this unit, they will develop the skills of capturing, editing, and manipulating video. Pupils are guided with step-by-step support to take their idea from conception to completion and evaluation. Features of video Filming techniques Using a storyboard Planning a video and script writing Importing and editing video Video editing and evaluation	Exploring selection in physical computing Programming In this unit pupils will use physical computing to explore the concept of selection. Pupils will use conditions to control the flow of a program. They will make use of their knowledge of repetition when introduced to the concept of selection and write programs that utilise this concept. Connecting physical computing devices Combining outputs Controlling with conditions Using selection to control the flow of a program Design physical projects that include selection Writing and testing algorithms		Flat-file databases Data and information Effective use of tools This unit looks at how a flat-file database can be used to organise data. Pupils will use tools to order and answer questions about data. They will create graphs and charts from their data to solve problems. They will use a real-life database to answer a question, and present their work to others. Creating a paper-based database Computer databases Using a database Using search tools Comparing data visually Databases in real life	