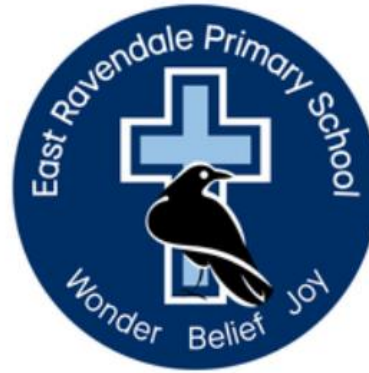




YEAR 1 AND 2 COMPUTING CURRICULUM

EAST RAVENDALE C OF E PRIMARY SCHOOL

At East Ravendale, we strive to develop independent, self-motivated and inquisitive learners of all ages. We celebrate our uniqueness and value all as God's children. We aim to give all members of our community opportunities to succeed, now and in the future, knowing they are safe and valued.

Our vision is underpinned by our core values of wonder, belief and joy.

"I can do all things through God who strengthens me." Philippians 4:13



Computing at East Ravendale

At East Ravendale, our computing curriculum is central to achieving our vision of inspiring independent, inquisitive and self-motivated learners who know they are safe, valued and wonderfully unique as God's children. Guided by our Christian foundation and the words *"I can do all things through God who strengthens me"* (Philippians 4:13), we equip pupils with the confidence, skills and moral purpose to thrive in a rapidly evolving digital world.

Through an engaging, inclusive and progressive computing curriculum, pupils develop the knowledge and understanding needed to become confident, responsible and creative users of technology. By the time pupils leave East Ravendale, they are equipped with the skills, understanding and character to flourish in the 21st century. They use technology safely and responsibly, apply their learning with confidence, and embody our values in all that they do—ready to become positive change-makers in an ever-connected world.

Wonder

We inspire wonder by encouraging pupils to explore, question and discover the possibilities of technology. Through engaging and creative experiences, pupils develop curiosity about how digital tools work and how they can be used to solve problems and express ideas across the curriculum.

Belief

We build belief by supporting pupils to become confident and independent users of technology. Through a structured and progressive curriculum, pupils develop resilience, trust in their abilities and the understanding that, with effort and determination, they can succeed and thrive in a digital world.

Joy

We promote joy by creating a positive, inclusive environment where pupils enjoy learning, creating and collaborating with technology. Pupils celebrate their achievements, work together with kindness and enthusiasm, and experience the excitement of using their skills to make a meaningful impact.

"I can do all things through God who strengthens me." Philippians 4:13



Year 1/2 Computing Curriculum Cycle A

	<u>Autumn</u> <u>1</u>	<u>Autumn</u> <u>2</u>	<u>Spring</u> <u>1</u>	<u>Spring</u> <u>2</u>	<u>Summer</u> <u>1</u>	<u>Summer</u> <u>2</u>
Programme of Study	Computing Systems & Networks – Technology Around Us/IT Around Us	Programming - Moving a Robot	Creating Media - Digital Painting	Data and Information - Grouping Data	Creating Media - Digital Writing	Programming - Robot Algorithms
Area of Computing	Computer Science	Computer Science	Information Technology	Information Technology Digital Literacy	Information Technology Digital Literacy	Computer Science Information Technology



Year 1/2 Computing Curriculum Cycle B

	<u>Autumn</u> <u>1</u>	<u>Autumn</u> <u>2</u>	<u>Spring</u> <u>1</u>	<u>Spring</u> <u>2</u>	<u>Summer</u> <u>1</u>	<u>Summer</u> <u>2</u>
Programme of Study	Computing Systems & Networks – Technology Around Us/IT Around Us	Creating Media - Digital Photographs	Programming - Programming Animations	Data & Information - Pictograms	Creating Media - Digital Music	Programming – Programming Quizzes
Area of Computing	Computer Science	Computer Science Information Technology Digital Literacy	Computer Science Information Technology	Information Technology Digital Literacy	Information Technology	Computer Science



Why this, why now?

<u>Year 1/2</u> <u>Cycle A</u>	<u>Why this, why now?</u>
Autumn 1 – Computing Systems & Networks: Technology Around Us / IT Around Us	Taught at the start of the year to establish essential computing vocabulary, safe technology use and basic understanding of computers. This provides the foundation needed for all later programming, media and data units.
Autumn 2 – Programming: Moving a Robot	Once pupils understand technology, they begin giving and following precise instructions. This introduces algorithms and programming concepts through practical activities, providing the foundation for more complex programming in later units.
Spring 1 – Creating Media: Digital Painting	With basic device skills secure, pupils apply them creatively by exploring digital art tools. This develops confidence in creating digital content independently before moving on to more complex forms of media creation.
Spring 2 – Data & Information: Grouping Data	Pupils are introduced to organising and classifying information after gaining confidence with digital tools. Understanding grouping and labelling data provides the groundwork for interpreting and presenting data through pictograms in Cycle B.
Summer 1 – Creating Media: Digital Writing	By summer, pupils are ready to use keyboards and word processing tools purposefully. This builds on earlier technology skills and develops digital communication, preparing them for more sophisticated publishing tasks later.
Summer 2 – Programming: Robot Algorithms	This revisits programming and progresses learning from simple commands to designing, predicting and debugging algorithms. Pupils deepen their computational thinking, building on Autumn's robot programming experiences.



<u>Year 1/2</u> <u>Cycle B</u>	<u>Why this, why now?</u>
Autumn 1 – Computing Systems & Networks: Technology Around Us / IT Around Us	Beginning the year with computing systems ensures pupils develop confidence using hardware, understand responsible technology use and establish digital safety knowledge that supports learning across the curriculum.
Autumn 2 – Creating Media: Digital Photography	Photography introduces pupils to capturing and manipulating digital content while applying online safety and device skills. This extends media creation beyond drawing and prepares pupils for future image editing work.
Spring 1 – Programming: Programming Animations	Programming skills progress from controlling robots to creating screen-based animations. Pupils combine commands, design projects and understand how digital programs work, providing a bridge towards more independent coding tasks.
Spring 2 – Data & Information: Pictograms	Building directly on grouping and classifying data, pupils learn to represent and interpret information graphically. This progression strengthens their ability to organise, analyse and communicate data effectively.
Summer 1 – Creating Media: Digital Music	Having explored visual media, pupils broaden their understanding of digital creativity through music. They experiment, refine and evaluate digital content, applying technology purposefully to create for a specific purpose.
Summer 2 – Programming: Programming Quizzes	This unit draws together programming knowledge. Pupils design, create, modify and evaluate their own projects, demonstrating increasing independence and readiness for Key Stage 2 programming.



Cycle A - Autumn 1 – Computing Systems & Networks – Technology Around Us/IT Around Us

Prior Knowledge	Technology Around Us - As this is a Year 1 unit, no prior knowledge is assumed. This unit progresses students' knowledge and understanding of technology and how they interact with it in school. Learners will build their knowledge of parts of a computer. Information Technology Around Us - This unit progresses learners' understanding of technology and how they interact with it. They will develop this understanding to become familiar with the term information technology and will be able to identify common features of IT.
Objectives to be taught	• 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. • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content
Core Knowledge	▪ To be able to identify technology ▪ To identify a computer and its main parts ▪ To recognise the uses and features of information technology ▪ To identify the uses of information technology in the school ▪ To identify information technology beyond school ▪ To explain how information technology helps us



Teach Computing Module	Year 1 – Technology Around Us Lesson 1 – Tech in the Classroom Lesson 2 – Using Technology Year 2 – Information Technology Around Us Lesson 1 – What is IT? Lesson 2 – IT in School Lesson 3 – IT in the World Lesson 4 – The Benefits of IT
Vocabulary	technology, computer, mouse, trackpad, keyboard, screen, information technology (IT), barcode, scanner, scan



Cycle A - Autumn 2 - Programming - Moving a Robot

Prior Knowledge	As this is a Year 1 unit, no prior knowledge is assumed. Some learners may have some basic knowledge of using beebots from EYFS. This unit progresses learners' knowledge and understanding of giving and following instructions. It moves from giving instructions to each other to giving instructions to a robot by programming it.
Objectives to be taught	• 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 • recognise common uses of information technology beyond school
Core Knowledge	▪ To explain what a given command will do ▪ To act out given words ▪ To combine forwards and backwards commands to make a sequence ▪ To combine four direction commands to make sequences ▪ To plan a simple program ▪ To find more than one solution to a problem



Teach Computing Module	Year 1 – Programming – Moving a Robot Lesson 1 – Buttons Lesson 2 – Directions Lesson 3 – Forwards and Backwards Lesson 4 – Four Directions Lesson 5 – Getting There Lesson 6 – Routes TO NOTE: This unit includes references relating to Bee-Bot floor robots but can be taught using other floor robots.
Vocabulary	Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.



Cycle A - Spring 1 - Creating Media - Digital Painting

Prior Knowledge	Learners should be familiar with: • How to switch their device on • Usernames • Passwords For an introduction to keyboard and mouse skills, learners may benefit from completing the Year 1 Computing Systems & Networks unit prior to this unit.
Objectives to be taught	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content
Core Knowledge	▪ To describe what different freehand tools do ▪ To use the shape tool and the line tools ▪ To make careful choices when painting a digital picture ▪ To explain why I chose the tools I used ▪ To use a computer on my own to paint a picture ▪ To compare painting a picture on a computer and on paper



Teach Computing Module	Year 1 – Creating Media – Digital Painting Lesson 1 – How can we paint using computers? Lesson 2 – Using shape and lines Lesson 3 – Making careful choices Lesson 4 – Why did I choose that? Lesson 5 – Painting all by myself Lesson 6 – Comparing computer art and painting TO NOTE: This unit should be taught on a laptop/Chromebook/desktop with a mouse where possible. The lessons use a free program called paintz.app and this is shown in the lesson screenshots. Alternatively, any painting application (such as Microsoft Paint) can be used.
Vocabulary	paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers



Cycle A - Spring 2 - Data and Information - Grouping Data

Prior Knowledge	This unit will introduce learners to data and information. It will introduce learners to the concept of labelling and grouping objects based on their properties. Learners will develop their understanding that objects can be given labels, which is fundamental to their future learning concerning databases and spreadsheets. In addition, learners will begin to improve their ability to use dragging and dropping skills on a device. Following this unit, in year 2, learners will present data graphically in pictograms.
Objectives to be taught	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • 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.
Core Knowledge	▪ To label objects ▪ To identify that objects can be counted ▪ To describe objects in different ways ▪ To count objects with the same properties ▪ To compare groups of objects ▪ To answer questions about groups of objects



Teach Computing Module	Year 1 – Grouping Data Lesson 1 – Label and Match Lesson 2 – Group and Count Lesson 3 – Describe an Object Lesson 4 – Making different groups Lesson 5 – Comparing Groups Lesson 6 – Answering Questions TO NOTE: You will need digital devices for learners to interact with during this unit. Learners will be logging on to the computers, opening and saving documents. Additional support and time may be required to facilitate these steps, and consideration should be given as to this.
Vocabulary	object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same



Cycle A - Summer 1 - Creating Media - Digital Writing

Prior Knowledge	This unit progresses the learners' knowledge and understanding of using computers to create and manipulate digital content, focussing on using a word processor. The learners will develop their ability to find and use the keys on a keyboard in order to create digital content. The learners are then introduced to manipulating the resulting text, making cosmetic changes, and justifying their reason for making these changes. Following this unit, learners will further develop their digital writing skills in the Year 3 – 'Desktop publishing' unit and the Year 6 – 'Web page development' unit.
Objectives to be taught	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • 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.
Core Knowledge	▪ To be able to use a computer to write ▪ To add and remove text on a computer ▪ To identify that the look of text can be changed on a computer ▪ To make careful choices when changing text ▪ To explain why I used the tools that I chose ▪ To compare typing on a computer to writing on paper



Teach Computing Module	Year 1 – Creating Media – Digital Writing Lesson 1 – Exploring the keyboard Lesson 2 – Adding and removing text Lesson 3 – Exploring the toolbar Lesson 4 – Making changes to text Lesson 5 – Explaining my choices Lesson 6 – Pencil or keyboard? TO NOTE: This unit requires the use word processing software. Pupils will be encouraged to familiarise themselves with keys on the keyboard and will learn to type and edit text.
Vocabulary	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.



Cycle A - Summer 2 - Programming - Robot Algorithms

Prior Knowledge	In advance of the lessons in this Year 2 unit, learners should have had some experience of creating short programs using floor robots and predicting the outcome of a simple program. This unit progresses learners' knowledge and understanding of algorithms and how they are implemented as programs on digital devices. Learners will spend time looking at how the order of commands affects outcomes. Learners will use this knowledge and logical reasoning to trace programs and predict outcomes.
Objectives to be taught	• 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
Core Knowledge	▪ To describe a series of instructions as a sequence ▪ To explain what happens when we change the order of instructions ▪ To use logical reasoning to predict the outcome of a program ▪ To explain that programming projects can have code and artwork ▪ To design an algorithm ▪ To create and debug a program that I have written
Teach Computing Module	Year 2 – Programming – Robot Algorithms Lesson 1 – Giving Instructions Lesson 2 – Same but Different Lesson 3 – Making Predictions Lesson 4 – Mats and Routes Lesson 5 – Algorithm Design Lesson 6 – Break it down TO NOTE: This unit includes references relating to Bee-Bot robots.



Vocabulary

instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition



Cycle B - Autumn 1 - Computing Systems & Networks – Technology Around Us/IT Around Us

Prior Knowledge	Technology Around Us - As this is a Year 1 unit, no prior knowledge is assumed. This unit progresses students' knowledge of technology and how they interact with it in school. Learners will build their knowledge of parts of a computer and develop the basic skills needed to effectively use a computer keyboard and mouse. Information Technology Around Us - This unit progresses learners' understanding of technology and how they interact with it. They will develop this understanding to become familiar with the term information technology and will be able to identify common features of IT. This unit also builds on the learners' understanding of using technology safely and responsibly.
Objectives to be taught	• 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. • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content
Core Knowledge	▪ To know how to use a mouse in different ways ▪ To know how to use a keyboard to type on a computer ▪ To be able to use the keyboard to edit text ▪ To create rules for using technology responsibly ▪ To explain how to use information technology safely ▪ To recognise that choices are made when using information technology



Teach Computing Module	Year 1 – Technology Around Us Lesson 3 – Developing Mouse Skills Lesson 4 – Using a Computer Keyboard Lesson 5 – Developing Keyboard Skills Lesson 6 – Using a Computer Responsibly Year 2 – Information Technology Around Us Lesson 5 – Using IT Safely Lesson 6 – Using IT in Different Ways
Vocabulary	computer, mouse, trackpad, double click, typing, keyboard, technology, information technology



Cycle B - Autumn 2 - Creating Media - Digital Photographs

Prior Knowledge	This unit begins the learners' understanding of how photos are captured and can be manipulated for different purposes. Following this unit, learners will develop their photo editing skills in KS2.
Objectives to be taught	• 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
Core Knowledge	▪ To be able to use a digital device to take a photograph ▪ To be able to make choices when taking a photograph ▪ To be able to describe what makes a good photograph ▪ To decide how photographs can be improved ▪ To use tools to change an image ▪ To recognise that photos can be changed



Teach Computing Module	Year 2 – Creating Media – Digital Photography Lesson 1 – Taking Photographs Lesson 2 – Landscape or Portrait? Lesson 3 – What makes a good photograph? Lesson 4 - Lighting Lesson 5 - Effects Lesson 6 – Is it real? TO NOTE: It is recommended that you use digital cameras to take photographs in these lessons, so that learners can experience a range of devices. However, tablets or other devices with cameras will also work. Lesson 5 of this unit uses screenshots from Windows Photo, but the inbuilt photo editing tools in most photo apps will work, for example photos on iPads, or Google photos on Chromebooks.
Vocabulary	device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting,



Cycle B - Spring 1 - Programming - Programming Animations

Prior Knowledge	This unit progresses learners' knowledge and understanding of programming and follows on from 'Programming – Moving a robot', where children will have learned to program a floor robot using instructions.
Objectives to be taught	• 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
Core Knowledge	▪ To choose a command for a given purpose ▪ To show that a series of commands can be joined together ▪ To identify the effect of changing a value ▪ To explain that each sprite has its own instructions ▪ To design the parts of a project ▪ To use my algorithm to create a program
Teach Computing Module	Year 1 – Programming – Programming Animations Lesson 1 – Comparing Tools Lesson 2 - Joining Blocks Lesson 3- Make a change Lesson 4 – Adding Sprites Lesson 5 – Project Design Lesson 6 – Following my Design TO NOTE: All the lessons in this unit require access to ScratchJr. ScratchJr is available as an App for tablets and Chromebooks.



Vocabulary

ScratchJr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design.



Cycle B - Spring 2 - Data & Information - Pictograms

Prior Knowledge	This unit progresses students' knowledge and understanding of grouping data. It builds on the Year 1 Data and Information unit where learners labelled objects and grouped them based on different properties. In Year 3 learners develop their understanding of attributes (properties) using branching databases to structure data according to different object attributes.
Objectives to be taught	• use technology purposefully to create, organise, store, manipulate and retrieve digital content • 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
Core Knowledge	▪ To recognise that we can count and compare objects using tally charts ▪ To recognise that objects can be represented as pictures ▪ To be able to create a pictogram ▪ To select objects by attribute and make comparisons ▪ To recognise that people can be described by attributes ▪ To explain that we can present information using a computer
Teach Computing Module	Year 2 – Data and Information – Pictograms Lesson 1 – Counting and Comparing Lesson 2 – Enter the Data Lesson 3 – Creating Pictograms Lesson 4 – What is an attribute? Lesson 5 – Comparing People Lesson 6 – Presenting Information TO NOTE: During this unit of work learners will use the j2e pictogram and j2e chart tools which can be accessed online using any device.



Vocabulary

more than, less than, most, least, common, popular, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing



Cycle B - Summer 1 - Creating Media - Digital Music

Prior Knowledge	Learners should have experience of making choices on a tablet/computer, and they should be able to navigate within an application. Learners should also have some experience of patterns.
Objectives to be taught	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • 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
Core Knowledge	▪ To say how music can make us feel ▪ To identify that there are patterns in music ▪ To experience with sound using a computer ▪ To use a computer to create a musical pattern ▪ To create music for purpose ▪ To review and refine our computer work
Teach Computing Module	Year 2 – Creating Media – Digital Music Lesson 1 – How music makes us feel Lesson 2 – Rhythms and patterns Lesson 3 – How music can be used Lesson 4 – Notes and tempo Lesson 5 – Creating digital music Lesson 6 – Reviewing and editing music TO NOTE: In this unit, learners will be using a computer to create music using Chrome Music Lab. To save work in Chrome Music Labs, learners need to save the link to their creation, for example by copying and pasting it into a word document. Learners may need some support with this.



Vocabulary

music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, create, emotion, beat, instrument, open, edit.



Cycle B - Summer 2 - Programming – Programming Quizzes

Prior Knowledge	This unit progresses learners' knowledge and understanding of instructions in sequences and the use of logical reasoning to predict outcomes.
Objectives to be taught	• 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 • Use logical reasoning to predict the behaviour of simple programs
Core Knowledge	▪ To explain that a sequence of commands has a start ▪ To explain that a sequence of commands has an outcome ▪ To create a program using a given design ▪ To be able to change a given design ▪ To create a program using my own design ▪ To decide how my project can be improved



Teach Computing Module	Year 2 – Programming – Programming Quizzes Lesson 1 – Scratch JR Recap Lesson 2 - Outcomes Lesson 3 – Using a design Lesson 4 – Changing a design Lesson 5 – Designing and creating a program Lesson 6 - Evaluating TO NOTE: All the lessons in this unit require access to ScratchJr. ScratchJr is available as an App for tablets and Chromebooks.
Vocabulary	sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code.

