Holy Trinity CE Primary School

Computing Progression Map

Teach Computing Core themes	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
E-safety is prioritised at the outset of every lesson, with a comprehensive framework encompassing eight strands: Self-Image and Identity, Online Relationships, Online Reputation, Online Bullying, Health, Well-Being & Lifestyle, Privacy & Security, Copyright and Ownership and Managing Online Information.						
EYFS						
Nursery and Reception	Children recognise that a range of technology is used in places such as homes and schools	Children select and use technology for particular purposes	Children select and use technology for particular purposes	Children select and use technology for particular purposes	Children select and use technology for particular purposes	Children select and use technology for particular purposes
KS1						
	Autumn Term	**Autumn Term**	**Spring Term**	**Spring Term**	**Summer Term**	**Summer Term**
Teach Computing Core themes	**Computing systems and networks**	**Creating media**	**Programming A**	**Data and information**	**Creating media**	**Programming B**
Year 1	**Unit: Technology around us** Recognising technology in school and using it responsibly. - Technology is 'man-made' and not 'natural.' Technology - computers, traffic lights, laptops,iPads. - Computers are a type of digital technology. Parts of a computer	**Unit: Digital painting** Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally. Use digital devices to help us to draw and paint pictures. Use tools to create different effects.	**Unit: Moving a robot** Writing short algorithms and programs for floor robots, and predicting program outcomes. Making a set of instructions for computers to follow. - Robots are one type of machine that can follow programs. Floor robots include	**Unit: Grouping data** Exploring object labels, then using them to sort and group objects by properties. - Data can be numbers, words or pictures. Information is what we can understand from looking at data.	**Unit: Digital writing** Using a computer to create and format text, before comparing to writing non-digitally. - Use digital devices to help us to write. - Use word processors, a keyboard and a mouse to enter and remove text.	**Unit: Programming animations** Designing and programming the movement of a character on screen to tell stories. - Use programming to make a set of instructions for computers to follow. - Use Scratch Jr. (a program) in order to

	monitor, mouse and keyboard.	Draw in different ways, using the pencil tool, lines and shapes. Change sizes and colours	Bee-bots and Blue-bots. - Floor robots have buttons which help us to direct them. We can use algorithms (a set of instructions to perform a task) to program floor robots along routes.	- Label objects using either their names or describing their properties. - Use labels to place objects into groups. This helps us to count and compare data easily, through looking at similarities and differences.	- Change the look of the text by changing things like the font and the size. -Writing digitally has the benefit that it is neat and tidy, and it can be easily edited.	code our own stories and animations. It involves sprites (characters on the screen). - Use algorithms (a set of instructions to perform a task) to program the sprite to do different things.
Year 2	**IT around us** Identifying IT and how its responsible use improves our world in school and beyond. - Children will already know that Technology is something that has been made by people to help us. - Technology is 'man-made' and not 'natural.' -Information technology (I.T.) includes computers and things that work with computers. - Information technology is in lots of important items in our	**Digital photography** Capturing and changing digital photographs for different purposes. - Use digital devices to help take and edit photographs. - Many different devices can be used to take photographs, for example digital cameras, phones, tablets and webcams. - Use apps and programs to edit and improve photos, for example. - Understand that not all photographs that we see are real –	**Robot algorithms** Creating and debugging programs, and using logical reasoning to make predictions. - Use programming to make a set of instructions for computers to follow. - Robots are one type of machine that can follow programs - they follow what we instruct them to do. - Use algorithms (a set of instructions to perform a task) to help robots to do things that we want them to. Debugging can help to correct	**Pictograms** Collecting data in tally charts and using attributes to organise and present data on a computer. - Data can be numbers, words or figures. Information is what we can understand from looking at data. - Organise objects into groups, based on what they are or their properties (features). - Record data about different groups and present them by using pictograms, tally charts and block charts. This data can	**Digital music** Using a computer as a tool to explore rhythms and melodies, before creating a musical composition. Making Music - Using digital devices to help us to create, edit and listen to music. - Music can make us think and feel different things. - Rhythm, pitch and tempo can be used to change the sound and emotion of music. - Use different apps and programs to edit and improve music.	**Programming quizzes** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. - Use programming to make a set of instructions for computers to follow. - Scratch jr. is a program that we can use to code programs using a series of command blocks. This can be used to design quizzes. - Use algorithms (a set of instructions to perform a task) to program the sprite to do different things.

	homes and around the world. - Understand the importance of using information technology safely.	they may have been edited.	algorithms and programs.	answer questions and solve problems.	- Understand the advantages of creating both digital and non-digital music.	
KS2						
	Autumn Term	**Autumn Term**	**Spring Term**	**Spring Term**	**Summer Term**	**Summer Term**
Teach Computing Core themes	**Computing systems and networks**	**Creating media**	**Programming A**	**Data and information**	**Creating media**	**Programming B**
Year 3	**Connecting computers** Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. - Knowing that Technology is something that has been made by people to help us and also know that Information technology (I.T.) includes computers and things that work with computers, children will build on previous learning by understanding that:	**Stop-frame animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story. -Animation is a technique used to make objects and drawings/images appear as if they are moving. - Use stop-frame animation techniques in which many photographs are taken of objects, with small movements in between to tell a story.	**Sequencing sounds** Creating sequences in a block-based programming language to make music. - Use programming to make a set of instructions for computers to follow. - Use Scratch in order to code our own stories and animations. - Use algorithms (a set of instructions to perform a task) to sequence movements, actions and sounds in order to program effective animations.	**Branching databases** Building and using branching databases to group objects using yes/no questions. - Data is raw numbers and figures. Information is what we can understand from looking at data. - Organised objects into groups, based on what they are or their different attributes. - Use branching databases to help us to identify objects within sets of data. They are useful when we want to classify	**Desktop publishing** Creating documents by modifying text, images, and page layouts for a specified purpose. - Use desktop publishing to create documents using page layout software. - Use desktop publishing to make things like newsletters, brochures, magazines and newspapers. - Consider how images and text are laid out on the page in an eye-catching and appropriate format	**Events and actions in programs** Writing algorithms and programs that use a range of events to trigger sequences of actions. - Use programming to make a set of instructions for computers to follow. - Use Scratch to code our own stories and animations. Use event and action command blocks in order to make sprites carry out acts when certain prompts take place. - Use algorithms (a set of instructions to

	- Digital devices are things made for a particular purpose, that use processing. Digital devices have an input, process, and output (IPO). -Information and data can be shared across networks. Many devices are used to create networks.	- When the images are quickly shown together, the objects appear to move! (They are animated).		objects (consider objects within a certain group)	when using desktop publishers.	perform a task) to sequence movements, actions and sounds in order to program effective animations.
Year 4	**The internet** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content. Pupils will build on their Information technology (I.T.) knowledge by: - Understanding that information and data can be shared by devices across networks. - The internet is a network of networks that is used around the world.	**Audio production** Capturing and editing audio to produce a podcast, ensuring that copyright is considered. - Understand that audio means sound, including music, sound effects, and podcasts. - Understanding that the process of recording and listening to sound requires input devices (e.g. a microphone) and output devices (e.g. a speaker).	**Repetition in shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes. - Use programming to make a set of instructions for computers to follow. - Use Logo (a text-based program that can create shapes and patterns by giving instructions). - Use algorithms (a set of instructions to perform a task) which we can plan, model and test, in order to	**Data logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation. - Data is raw numbers and figures. Information is what we can understand from analysing data. - Look at the many different ways that we can collect, log and interpret data, including by using data loggers. - Use data loggers and logging software to	**Photo editing** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled. - Use pre-existing knowledge in using digital devices to help take and edit photographs. - Use an app/program to edit and improve photos. - Edit photographs in a variety of different ways, for example cropping, rotating, flipping, and changing colours and styles.	**Repetition in games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game. - Use programming to make a set of instructions for computers to follow. - Use Scratch (a program) to code our own stories, animations and games. - Use repeat and loop operator blocks in order to make our programs more logical and efficient. These help to run code continuously

	- The World Wide Web is a system on the internet that has websites and webpages. - Some content is protected on the internet. It is important to know that not all information on the internet is accurate, honest, or legal. Websites and their content are created by people.	- Podcasts are a type of spoken word audio file that can be downloaded by listeners. - People can have ownership over audio files, and can have the audio copyrighted, so that it can't be copied without permission.	create accurate and imaginative shapes and patterns.	automatically capture data. - Draw conclusions in answer to our research questions.	- Understand that not all photographs that we see are real – they may have been edited.	or for a set number of times. - Use algorithms (a set of instructions to perform a task) to sequence movements, actions and sounds in order to program effective animations. - Recognise patterns of repetition in day-to-day life. This may include things like; brushing your teeth, performing a dance routine, creating a piece of music, finding a clapping rhythm.
Year 5	**Systems and searching** Recognising IT systems around us and how they allow us to search the internet. Pupils will build on their Information technology (I.T.) knowledge by: - Learning that computers have Input, Process and Output (IPO) components.	**Video production** Planning, capturing, and editing video to produce a short film. Knowing that video means the recording, reproducing and broadcasting of visual images (often accompanied by audio), and that video is made up of a sequence of images shown in quick	**Selection in physical computing** Exploring conditions and selection using a programmable microcontroller. - Making and inputting a set of instructions for computers to follow (programming). - Use algorithms (a set of instructions to perform a task) which we can plan, model	**Flat-file databases** Using a database to order data and create charts to answer questions. - Analyse data to understand information. - Look at different ways we can collect, log and interpret data, including by using databases.	**Introduction to vector graphics** Creating images in a drawing program by using layers and groups of objects. Vector Drawing - Vector drawings are computer graphic images that are made using 2-D shapes. - The drawings are connected by lines and curves to form	**Selection in quizzes** Exploring selection in programming to design and code an interactive quiz. - Use programming to make a set of instructions for computers to follow. - Use Scratch (a program) to code our own quizzes, stories, animations and games. - - Input questions using

	- Computer systems are built using a number of parts. - Computer systems can communicate with other devices. - There are many, many different kinds of computer systems all around the world, ranging from small-scale to large scale.	succession, giving the impression of movement, the children will build their creative skills by: - Using a digital device to record, edit and playback video and sound. - Understand that theme, setting, characters, colour, sound, and dialogue are all important features of video.	and test, in order to create accurate and imaginative robotic actions. - Input- The data which is entered into a computer or device. Output Device- The device which receives data from a computer or device.	- Use a database to organise data so that it can be easily added to, amended, stored and accessed. Computer databases can allow large amounts of data to be sorted, filtered and edited more easily.	polygons and other shapes, forming a complete picture. - Use an app/program to help us to complete vector drawings. - Use a variety of techniques, e.g. zooming, rotating, resizing & duplicating, to create accurate images.	the 'ask' command blocks. We can use selections and conditions in order to ensure that there are different outcomes depending upon a user's response. - Use algorithms (a set of instructions to perform a task) to sequence movements, actions and sounds in order to program effective animations.
Year 6	**Communication and collaboration** Identifying and exploring how data is transferred and information is shared online. Pupils will build on their Information technology (I.T.) knowledge by: - Understanding that the World Wide Web is the part of the internet where we can visit websites and webpages.	**Web page creation** Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation. - Understand that a webpage is a hypertext document that is a part of the World Wide Web. - Know that websites are a collection of webpages about the same topic. They can	**Variables in games** Exploring variables when designing and coding a game. - Programming is when we make and input a set of instructions for computers to follow. -Variables are changeable elements of a program. Scratch is one app in which we can explore variables. -We use algorithms which we can plan, model, trial and	**Spreadsheets** Answering questions by using spreadsheets to organise and calculate data. - Use spreadsheets to recognise the different ways that we can collect, log and interpret data, including. - Understand that spreadsheets organise and store data in meaningful ways so that it can be easily	**3D Modelling** Planning, developing, and evaluating 3D computer models of physical objects. - 3D means three-dimensional, or having 3 dimensions. For example, a box is a 3D shape, whereas a square is a 2D shape. - Use computer software to create 3D shapes, in order to produce models of real-world objects.	**Sensing movement** Designing and coding a project that captures inputs from a physical device (Micro:bits). Programming is when we make a set of instructions for computers to follow. - Micro:bits are small computers that perform different actions based on programs written on computer software.

	- The World Wide Web can be used to find information, using search engines. - The internet is also a useful communication tool – with a number of different communication mediums for a range of different purposes.	be found using browsers. - Look at examples of websites to understand that webpages are the different pages on the websites. - Websites are created for a chosen purpose, and with a particular audience in mind. - They include navigation paths, and must adhere to copyright and fair use of media rules.	debug, in order to create accurate command sequences, that enable variables to be enacted in games.	accessed and analysed. Computer spreadsheets are particularly useful for powerful calculations, graphs and charts.	- 3D modelling allows us to view designs from different angles and experiment with various designs. - Recognise the many industries 3D modelling is used in, e.g. in interior design, architecture and making video games.	Programs are then downloaded to the micro:bit. - Use a range of input sensors that can be used as input triggers for different codes to run. - Programme output devices on Micro:bits (e.g. LED displays) to display words, pictures and numbers.