Eastfield Primary School - Long Term Plan by subject

Computing at a Glance at Eastfield Primary School					
EYFS					
Within the provision there will be toys which need manipulating by pressing parts, lifting flaps or turning knobs to achieve effects such as sound, movements or new images. Apparatus will be available to allow children to operate simple equipment for example remote controls and CD players. A computer will be used daily with the children and the children will learn that information can be retrieved from computers. Children will also be exposed to watching a video clip on the computer and interactive whiteboard as well as listening to music. The children will be able to draw on the interactive whiteboard available in their classroom daily using the pen provided.					
	Online Safety	**Programming**	**Handling Data**	**Multimedia**	**Technology**
Year 1	**Online Safety (Autumn)**	**Coding (Summer) Maze Explorers (Spring)**	**Spreadsheets (Spring) Pictograms (Autumn)**	**Animated Story Books (Summer)**	**Technology Outside of School (Autumn)**
Year 2	**Online Safety (Spring)**	**Coding (Summer)**	**Spreadsheets (Autumn)**	**Making Music (Summer) Presenting Ideas (Autumn)**	**Effective Browser Searching (Spring)**
Year 3	**Online Safety (Spring)**	**Coding (Summer) Coding using Crumble (Spring)**	**Branching Databases (Autumn)**	**Desktop publishing (Summer)**	**Email (Autumn)**
Year 4 *Updated to Teach computing*	**Repetition in shapes (Summer)**	**Coding using Crumble (Spring /Summer)**	**Data logging (Spring)**	**Photo editing (Autumn)**	**The internet (Autumn)**
Year 5	**Online Safety (Spring)**	**Coding (Autumn) Game Creator (Autumn)**	**Databases (Spring)**	**Introduction to vector drawings (Summer) Video production (Summer)**	
Year 6	**Online Safety (Spring)**	**Coding using Crumble (Summer)**	**Spreadsheets (Autumn)**	**Blogging (Spring) Quizzing (Summer)**	**Networks (Autumn)**

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	Online Safety	Programming	Handling Data	Multi Media	Technology
Year 1	**Online Safety** In this unit children will be introduced to the Purple Mash site and learn how to use it safely. They will be taught to log in safely. They will start to understand the idea of 'ownership' of their creative work and how to find saved work in the Online Work. They will learn how to search to find resources and become familiar with the types of resources available in the Topics section. They will be explore the Tools section and to learn about the common icons used in Purple Mash for Save, Print, Open, New. Children will also be given time to explore the Games section. They will understand the importance of logging out when they have finished. **Online Safety** • To login safely with their own logins and understand why that is important. • To create their own avatar and to understand what this is and how it is used. • To be able to create their own picture and add their name to it. • To start to understand the idea of 'ownership' of their creative work. • To save their work to their My Work area and understand that this is their space.	**Coding** In this unit Children will be introduced to coding using the 2Code tool. A large emphasis will be placed on starting to build up their vocabulary of coding words and using them in context. Children will be taught to create clear instructions like those required by a computer and build one- and two-step instructions using the printable code cards. They will use the 2Code tool to create their own simple program. They will use Design Mode to add and change backgrounds and characters. They will use code blocks to make the characters move automatically when the green Play button is clicked. They will explore the When Key and When Swiped commands and use the Stop button to make characters stop when the background is clicked. They will use Collision Detection to make objects perform actions and use the sound property. **Coding** • Explain what is meant by coding • Control simple everyday devices to make them produce different outcomes **Maze Explorers** In this unit the children will be introduced to the 2Go program and use direction keys to move forwards, back, left and right. They will create and debug their own simple algorithms to guide characters through the maze.	**Spreadsheets** In this unit the children will be introduced to 2Calculate, a simple to use spreadsheet for beginners. They will be introduced to the basic features and tools of spreadsheets. They will add images to a spreadsheet using the image toolbox and use the 'speak' and 'count' tools in 2Calculate to count items **Spreadsheets** • Explain what rows and columns are • Open a spreadsheet and enter data into cells • Use the 'lock' tool to prevent changes to cells • Give images a value that the spreadsheet can use to count • Use the count tool **Pictograms** This unit is an introduction to pictograms and looking at how they can be used to represent data. Children will use the 2 Count tool. They will understand that data can be represented in picture format, will be able to contribute to a class pictogram and use a pictogram to record the results of an experiment. **Pictograms** • Use a simple pictogram to develop graphical awareness/ one to one correspondence • Collect data to use in a pictogram • Understand that a picture represents a value (1)	**Animated Story Books** For this unit of work the children will be introduced to e books and use the 2Create a Story tool to produce their own animated story books. They will continue a previously saved story, add an animation and sound to it, including voice recording and music the children have created. They will then work on a more complex story, including adding backgrounds and copying and pasting pages. Children will then share their e-books on a class display board. **Animated Stories** • Know the difference between an e-book and a traditional book • Work with others and contribute to a digital resource that includes text • Change font colour and size • Save work • Create a simple animation to tell a story • Add sound to the page • Create music and add to page • Use a copy and paste feature	**Technology Outside of School -** This unit encourages the children to consider how technology is used outside of the school environment. To help do this, the children go on a walk around their local community and find and record examples of where technology is used outside school. **Technology Outside School** • Know what 'technology' means • Show an awareness of the range of technology they encounter in everyday life • Can identify several examples of where technology is used in and out of school

		Maze Explorers * Use the direction keys to move an object/character forward, back, left and right. * Create a simple algorithm * Debug their own algorithms. * Save background images. * Save their challenge * Let a friend try their challenge.			

Eastfield Primary School - Long Term Plan by subject

	Online Safety	Programming	Handling Data	Multi Media	Technology
Year 2	**Online Safety** This unit focuses on online safety and builds on the knowledge from year 1 (1.1) Children will learn how to refine searches using the Search tool and how to share work electronically using the display boards. They will acquire some knowledge and understanding about sharing work on Purple Mash and the Internet. They will use 2Email to write to 2Respond characters and understand how we talk to others when they aren't there in front of us. **Online Safety** • Identify different devices that can go on the internet, and separate those that do not. • Understand how information can be shared electronically • Open and send an email • Show an awareness of a range of inputs to a computer (IWB, Mouse, Keyboard etc.) • Show an awareness that computers can be linked to share resources • Use websites and demonstrate an awareness of how to manage their journey (back/forward button/ hyperlinks)	**Coding** This unit consists of six lessons that assume children have completed Unit 1.7 in year 1. Key coding vocabulary is shown in bold within the lesson plans, use these new words in context to help children understand the meaning of them and build up their vocabulary of coding words. Children will often be able to solve their own problems when they get stuck, either by reading through their code again or by asking their peers; this models the way that coding work is really done. The coding lessons in these units are structured around the PRIMM approach. Predict… what this code will do Run… the code to check your prediction Investigate… trace through the code to see if you were correct Modify... the code to add detail, change actions/outcome Make… a new program that uses the same ideas in a different way. Get creative! *understand what an algorithm is. • Create a computer program using an algorithm. • Create a program using a given design. • Understand the collision detection event. • Understand that algorithms follow a sequence. • Design an algorithm that follows a timed sequence.	**Spreadsheets** This unit builds on the skills learnt in year 1. Children will recap basic features of a spreadsheet (cells, rows, columns, how to open, edit and save, add images from the toolbox, use the count tool) Children will then use tools in a spreadsheet to automatically total rows and columns and use a spreadsheet to solve a mathematical puzzle. Children will be taught to use images in a spreadsheet. They will learn to work out how much they need to pay using coins by using a spreadsheet to help calculate. They will create a table of data on a spreadsheet and use the data to create a block graph manually. **Spreadsheets/Graphs** • Use the 'copy and paste totals' tool • Use the data in a spreadsheet to create a graph • Use a graphing package to collect, order and classify data, selecting appropriate tools to create a graph and answer questions	**Making Music** This unit will provide the children with the knowledge and understanding to create simple and more complex animations using 2Sequence. They will make music digitally. They will explore, edit and combine sounds and add sounds to a tune they've already created to change it. They will think about how music can be used to express feelings and create tunes which depict feelings. They will upload a sound from a bank of sounds into the Sounds section and then go on to record their own sound and upload it into the Sounds section. Children will then create their own tune using the sounds which they have added to the Sounds section. **Making Music** • Explore, edit and combine sounds on a computer program • Add sounds to a tune to change it • Record their own sounds **Presenting Ideas** In this unit children will explore how a story can be presented in different ways. They will make a quiz about a story or class topic. They will be taught how to extract information from a2Connect file to make a publisher fact file on a nonfiction topic, add appropriate clipart, phots and tables. Children will then present their fact file to the class. **Presenting Ideas** • To explore how a story can be presented in different ways. • Use a software program to organise and present information • Add clipart/photos/ tables to structure information	**Effective Browser Searching** This unit allows the children to develop an understanding of what the Internet is. It will also give t them the basic tools to help them search for information more effectively. Pupils will look at the Internet, the web, browsers and search engines. After becoming acquainted with the basics of the Internet and how it works, students will be ready to dive into searching with Google. Pupils will be taught the basics of search: where to type in their query and how to understand the pages of results. The pupils will look at the main pages and buttons they will encounter while using search engines. **Effective Browser Searching** • To understand the terminology associated with searching. • To gain a better understanding of searching on the Internet. • Use a website

		• Understand that different objects have different properties. • Understand what different events do in code. • Understand the function of buttons in a program. • Understand and debug simple programs.	Enter information into a simple branching database or word processor and use it to answer questions.		To create a leaflet to help someone search for information on the Internet.

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Year 3	Online Safety	Programming	Handling Data	Multi Media	Technology
	Online Safety This unit builds on previous online safety units. Children will know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away. They will understand how the Internet can be used to help us to communicate effectively and understand how a blog can be used to help us communicate with a wider audience. Children will consider whether what they read on websites is true. They will look at some 'spoof' websites, create a 'spoof' webpage, think about why these sites might exist and how to check that the information is accurate. They will learn about the meaning of age restrictions symbols on digital media and devices and discuss why PEGI restrictions exist. Children will know where to turn for help if they see inappropriate content or have inappropriate contact from others. **Online Safety** • To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away. • To understand how the Internet can be used to help us to communicate effectively. • To understand how a blog can be used to help us communicate with a wider audience. • For children to consider if that they read on websites is true? • To learn about the meaning of age restrictions symbols on digital media and devices. To discuss why PEGI restrictions exist. To know where to turn for help if they see inappropriate content or have inappropriate contact from others	**Coding** This unit consists of six lessons that assume children have followed the Coding Scheme of Work in Years 1 and 2. Key coding vocabulary is shown in bold within the lesson plans, use these new words in context to help children understand the meaning of them and start to build up, their vocabulary of coding words. The Gibbon guided activities provide further practice of the concepts that the children will be learning and can be used as extension activities. More able children can be encouraged to explore other things that they can change in their programs and experiment with the options available, such as timers and 'if' statements. Children will often be able to solve their own problems when they get stuck, either by reading through their code again or by asking their peers; this models the way that coding work is really done. More able children can be encouraged to support their peers, if necessary, helping them to understand but without doing the work for them. **Coding** *To understand what a flowchart is and how flowcharts are used in computer programming. • To understand that there are different types of timers and select the right type for purpose. • To understand how to use the repeat command. • To understand the importance of nesting. • To design and create an interactive scene. **Coding using Crumble Kits** Children will understand what a Physical System is, know examples of Physical systems around us and know that they can be controlled by computers. Children will be introduced to Crumble kit hardware as a physical system. They will learn the names of all of the crumble kit components, how to assemble them, power them using batteries, connect them to the laptops and check and pack them away correctly. They will learn how to open the Crumble coding software and how to use the 'sparkles' and 'sparkle strips' in the Crumble kits. This will enable them to simulate such things as traffic light sequences or light shows. Children will debug their own programs	**Branching Databases** In this unit children will be introduced to Branching databases and use them to classify groups of objects. Children will sort objects using just 'yes' or 'no' questions. They will then complete an existing branching database using 2Question. They will then be able create a branching database of their own choice by choosing a suitable topic and selecting and saving appropriate images. **Databases** • To use a simple database to enter and save information on a given subject • Use straightforward lines of enquiry to search data for the answers • Create a branching database	**Presenting with MS power point** In this unit children will use MS power point to create their own multi-media presentation incorporating text, pictures and animations. More able children will use videos within their presentation. Presenting To understand the uses of PowerPoint. • To create a page in a presentation. • To add media to a presentation. • To add animations to a presentation. • To add timings to a presentation. • To use the skills learnt to design and create an engaging presentation.	**Email** This unit uses 2Email as a safe place to teach children how to use email. Children will begin by thinking about different methods of communication. They will then open and respond to an email before writing an email to someone using an address book. They will learn how to use email safely, to add an attachment to an email and to explore a simulated email scenario. **Email** • Log in to an email, open emails, create and send replies. • Attach files to an email. • Download and save files from an email. • Email more than one person and participate in group emails by 'replying to all'.

		by detecting and correcting errors in their own algorithms. **Coding** • To type a short sequence of instructions and to plan ahead when programming devices on and off screen • Write a programme to achieve a specific goal • Use an 'if' statement when programming • Create a variable in a program.			

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Year 4	Online Safety	Programming	Handling Data	Multi Media	Technology
	Online Safety This unit builds on previous online safety units. Children will be taught to understand how they can protect themselves from online identity theft and that information put online leaves a digital footprint or trail and that this can aid identity theft. They will identify the risks and benefits of installing software including apps, understand that copying the work of others and presenting it as their own is called 'plagiarism' and consider the consequences of plagiarism. Children will identify appropriate behaviour when participating or contributing to collaborative online projects for learning. They will identify the positive and negative influences of technology on health and the environment and understand the importance of balancing game and screen time with other parts of their lives. **Online Safety** • Create and share an online safety presentation and information materials • To understand how children can protect themselves from online identity theft. • Understand that information put online leaves a digital footprint or trail and that this can aid identity theft • To Identify the risks and benefits of installing software including apps. • To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. • To identify appropriate behaviour when participating or contributing to collaborative online projects for learning.	**Coding using Crumble Kits** Children will build on their knowledge of controlling physical systems by using the Crumble Kits. They will recap the basic skills of using the hardware and software (naming, checking and assembling the components, writing code blocks using the software). They will recall how to program sparkles and then move on writing programs to control motors. They will incorporate the motors into products such as model wind turbines/fairground rides. Children will debug their own code and solve problems such as how to slow down/speed up the motor. **Coding** • Explain what 'Object', 'Action',' Output', 'Control' and 'Event' are • Create an if/else statement • Set or change a variable value • Use repetition and user input • Explain how they debugged a partner's program	**Spreadsheets** Children will use 2Calculate to design a graph to solve a mathematical problem. They will present, format and analyse their data and information in a variety of ways and use their spreadsheets to solve and check mathematical problems. They will use the number formatting tools within 2Calculate to appropriately format numbers and add a formula to a cell to automatically make a calculation in that cell using the 'formula wizard'. Children will be fluent in copying and pasting contents between cells. They will then use spreadsheets to collate data and extract information from it to answer questions e.g. children can create line graphs and can use it to identify when something will happen using 2Calculate. **Spreadsheets** • To use the formula wizard in the advanced mode to add formulae and explore formatting cells. • To use a spreadsheet for budgeting. • To use spreadsheet data to create line graphs.	**Animations** This unit will provide the children with the knowledge and understanding to create simple and more complex animations using 2Animate. Children will discuss what makes a good animated film or cartoon and what their favourites are. They will learn how animations are created by hand and find out how 2Animate can be created in a similar way using the computer. They will learn about onion skinning in animation and add backgrounds and sounds to their animations. Children will be introduced to 'stop motion' animation. When they have refined their animation, they will share it on the class display board and by blogging. **Animation** • Know how animations are created by hand • Use the Onion Skin tool • Add backgrounds and sounds to animations • To know what stop motion animation is • Share animations with the class **Writing for Different Audiences** In this unit, children learn that technology can be used to organise, reorganise, develop and explore ideas, and that working with information in this way can aid understanding. Children will explore how font size and style can affect the impact of a text. Children have used 2Connect to mind-map ideas. They will use a simulated scenario to produce a news report and use a simulated scenario to write for a community campaign. **Writing for different audiences** • Investigate how font size and style can affect the impact of a text • Use a simulated scenario to produce a news report • Use appropriate font style and sizes and be able to justify choices	**Effective Search Browser** This unit builds upon the skills and knowledge developed in Year 2 in Unit 2.5 – Effective Searching. Children will locate information on the search results page and use search effectively to find out information. They will be taught to assess whether an information source is true and reliable. **Effective Search Browser** • To locate information on the search results page. • To use search effectively to find out information. • To assess whether an information source is true and reliable.

	• To identify the positive and negative influences of technology on health and the environment. • To understand the importance of balancing game and screen time with other parts of their lives.				

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Year 5	Online Safety	Programming	Handling Data	Multi Media	Technology
	Online Safety This unit continues to develop children's knowledge of how to stay safe online. Children will gain a greater understanding of the impact that sharing digital content can have. They will revisit and review sources of support when using technology and their own responsibility to one another in their online behaviour. They will understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. They will also be made aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. **Online Safety** • Know what Childnet SMART CREW is and have used resources to gain an understanding about keeping safe online. • Know who to tell if they are upset by something that happens online.	**Game Creator** Children will review and analyse a computer game, describing some of the elements that make a successful game. They will design the setting for their own game so that it fits with the selected theme. They will upload images or use the drawing tools to create a scene, decide on the game quest and design the characters for their game. Children can decide upon, and change, the animations and sounds that the characters make. When finished, children will share their game so that others can play it, write instructions and evaluate their own and peers' games. **Game Creator** • To create the game environment by using the drawing tools or uploading images • Create the game quest by designing characters and editing features **Coding** In this unit children will learn to confidently include objects, actions, events and outputs successfully within their 2Code programs. They will experiment with the use of timers to achieve repetition effects in their programs. They will use 'if' statements to bring selection into their own coding and understand how variables can be used to store information while a program is executing and make attempts to use and manipulate the value of variables. Most children will integrate multimedia components such as sounds, animation and images into their coding. Children will predict program outcomes and attempt to debug. Children will explain how programs simulate physical systems and can successfully create their own program to meet a design brief relating to a physical system. **Coding** • To create a program that responds to the 'if' command or the 'if/else' command • To use a variable to create a visual timer. • To explore number and string variables. • To go through the design, code, execute, refine process. • To create a program that controls or simulates a physical system, i.e. changing the speed and angle of moving objects	**Databases** In this unit children will learn how to search for information in a database. They will search a database in order to answer questions correctly and contribute to a class database. They will design an avatar for a class database and enter information into a class database. They will create their own database around a chosen topic. They will add records to their database, know what a field is and add field information **Databases** • Search a database to find out answers to questions • Add records to their database • Know what a database field is and can correctly add field information • Understand how to words questions so they can be effectively answered using a search	**Modelling** In this unit, children are introduced to 2Design and Make. They will know what the 2Design and Make tool is for and explore the different viewpoints in 2Design and Make whilst designing a building. They will explore the effect of moving points when designing and will adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form. Children will then explore how to edit the polygon 3D models to design a 3D model for a purpose. They will understand the printing and making process, refine one of their designs to prepare it for printing. Children will then print their design as a 2D net and then created a 3D model. **3D Modelling** • Explore the effects of moving points when designing a product • Edit 3D models/Design a 3D model for a purpose **Word Processing** In this unit, children will learn how to produce documents using Microsoft Word. They will recap how to format text and learn how to add and edit images and tables in their documents. They will learn how to use word wrap within images and text and will use all of the skills taught to create their own word document.	.

				Children will consider the impact and effectiveness of their document on the intended audience and edit and improve their own work. **Word Processing** • To know what a word processing tool is for. • To add and edit images to a word document. • To know how to use word wrap with images and text. • To change the look of text within a document. • To add features to a document to enhance its look and usability. • To use tables within MS Word to present information.	

Eastfield Primary School - Long Term Plan by subject

Year 6	Online Safety	Programming	Handling Data	Multi Media	Technology
	Online Safety This unit continues to develop the children's knowledge of online safety. Children will assess the benefits and risks of mobile devices broadcasting the location of the user/device, e.g. apps accessing location. Tbey will Identify secure sites by looking for privacy seals of approval, e.g. https, padlock icon. They will identify the benefits and risks of giving personal information and device access to different software, review the meaning of a digital footprint and understand how and why people use their information and online presence to create a virtual image of themselves as a user. Children will have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour. They will understand the importance of balancing game and screen time with other parts of their lives, e.g. explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health. **Online safety** • Understand the safety aspects surrounding blogging	**Coding using Crumble Kits** Children will build on their knowledge of controlling physical systems using the Crumble Kits. They will recap the basic skills of using the Crumble hardware and software (naming, checking and assembling the components, writing code blocks using the software). They will then design and write programs to control buggies, incorporating Crumble kits. They will write algorithms, detect and correcting errors. They will extend their previous coding skills by working with variables and various forms of input and output using things such as sensors. **Coding** • Designing and writing a more complex program that accomplishes a specific goal. • Explain what functions are and how they can be created and labelled • Move code from one tab to another • Organise code into functions to make it easier to read • Use appropriate coding vocabulary	**Spreadsheets** In this unit Children will add a formula to a cell to automatically make a calculation in that cell using the 'formula wizard'. They will use spreadsheets to collate data and extract information from it to answer questions. They can then use this to successfully collate, select and manipulate this data, allowing them to answer a mathematical problem relating to probability. Children will present, format and analyse their data and information in a variety of ways and use their spreadsheets to solve and check mathematical problems and concepts. Throughout this unit, children will be tasked with creating spreadsheets which are contextualised and evaluating them. Their layouts and contents will be fit for purpose for their intended audience. **Spreadsheets** • To use a spreadsheet to model a real-life situation. • To use a spreadsheet to explore probability. • To use a spreadsheet for the conversion of measurements • To use spreadsheet data to create line graphs. • To use spreadsheets in 'real life' Creating a computational mode.	**Blogging** In this unit children will understand the purpose of writing a blog. They will identify the features of successful blog writing, plan the theme and content for a blog and understand how to write a blog. They will consider the effect upon the audience of changing the visual properties of the blog, of regularly updating the content of a blog and understand how to contribute to an existing blog. **Blogging** • To identify the purpose of writing a blog. • To identify the features of successful blog writing. • To plan the theme and content for a blog. • To understand how to write a blog. • To consider the effect upon the audience of changing the visual properties of the blog. • To understand the importance of regularly updating the content of a blog. • To understand how to contribute to an existing blog. To understand how and why blog posts are approved by the teacher. • To understand the importance of commenting on blogs. • To peer-assess blogs against the agreed success criteria. **Quizzing** In this unit children will be using a variety of Purple Mash tools to create quizzes on different topics and for different audiences and will have the opportunity to share them with others. **Quizzing** • To create a picture-based quiz for young children.	**Networks** The aim of this unit is to provide children with the opportunity to find out more about how networks work, understand computer networks including the internet, learn how they can provide multiple services, such as the World Wide Web, and explore the opportunities they offer for communication and collaboration. Children will research and find out about TimBerners-Lee, know about their school network and consider some of the major changes in technology which have taken place during their lifetime and the lifetime of their teacher/another adult. **Networks** • To discover what the children know about the internet. • To find out what a LAN and a WAN are. To find out how we access the internet in school. • To research and find out about the age of the internet. To think about what the future might hold.

				• To learn how to use the question types within 2Quiz. • To explore the grammar quizzes. • To make a quiz that requires the player to search a database. • To make a quiz to test your teachers or parents.	