



Emmbrook Infant School EYFS & KS1 Computing: Key Skills and Knowledge Progression

EYFS				
<u>Topic Enquiry focus</u>	<u>Key Skills & Knowledge</u>	<u>Lesson Progression</u>	<u>Spiral knowledge building Termly/Annually</u>	<u>Curriculum Cohesion</u>
<p><u>People who help us/ Festival and Celebrations</u></p> <p>Who can help us?</p> <p>Why are festivals special for people</p>	<p>Early learners can use technology to explore new worlds, make believe, and actively engage in fun and challenging activities.</p>	<ol style="list-style-type: none"> 1. Look at the parts of the computer, keyboard, mouse, monitor computer and assess mouse skills, how to keep safe on the computer and what to do if something goes wrong 2. Purple Mash/games/simple city looking at videos and using the mouse to select and manipulate items on the screen 3. Opening and closing of programmes 4. Unplugged programming – children tell each other how to move around a space programming each other prior to using Bee Bots. Using the Jam Sandwich video as a guide. 5. Bee Bots used for map making and maps from home to school. 6. 2paint all tools working on mouse skills and selecting colours or size of paint brush 7. 2Paint snowman / penguin drawing that builds on previous skills learnt on mouse control 8. Children create a Calendar as a Christmas present to take home. A picture of their family some with labels. Know that work can be saved, retrieved and printed for different purposes. 		<p>Understanding the world</p> <p>Expressive art and design</p> <p>Fine and gross motor</p> <p>Mathematics</p> <p>Literacy</p>
<p><u>Traditional tales /Space</u></p>	<p>Early learners can use technology to explore new worlds, make believe, and actively engage in fun and challenging activities.</p>	<ol style="list-style-type: none"> 1. Continue to look at the different components of a computer and explore the keyboard using the 2Type programme. 2. Following on from using 2Type children type their name into the 2Paint ABC app and continue developing mouse skills to decorate their name. 	<p>Building on mouse skills from previous term</p> <p>Building on selection and manipulation</p>	<p>Understanding the world</p> <p>Expressive art and design</p>



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<p>Which is your favourite traditional story character and why?</p> <p>Where would you go in Space?</p>		<ol style="list-style-type: none"> 3. Continuing with mouse skills and loading a programme – children are introduced to the Music Tool kit and compose music by clicking on the instrument they want to use. Children learn how to record and play back their creations. 4. Children to continue to learn E-safety skills and this links in with E-safety week. 5. During maths we use the computers to explore the app – Maths base. Children learn to use the keyboard and mouse to answer and solve maths questions. 6. We return to Bee Bots giving them a map to explore linking into the space theme. We build upon the knowledge of them investigating the Bee Bots last time. 7. Building on the children’s confidence in selecting programs and opening games we use Simple City to watch videos and select tools for games. Children continue to develop skills for manipulating items on a screen with a mouse. 	<p>skills from previous term.</p> <p>Building on Bee Bot programming skills from previous term</p>	<p>Fine and gross motor</p> <p>Mathematics</p> <p>Literacy</p>
<p><u>Mini Beasts / Dinosaurs</u></p> <p>Where could you find a minibeast?</p> <p>Would you see a dinosaur today?</p>	<p>Early learners can use technology to explore new worlds, make believe, and actively engage in fun and challenging activities.</p>	<ol style="list-style-type: none"> 1. Continue to look at the different components of a computer and explore the keyboard as well as exploring how to select, manipulate items and close programmes. Through exploration of Simple City building on skills from previous term. 2. Children are introduced to Espresso and are given time to explore the site. Children watch Dinosaur fact videos and create a dinosaur fact sheet. Continue to learn that information can be gathered from the internet. 3. Children create their fact files using the 2publish programme. Building on their typing skills and their mouse skills by adding images into the document. 	<p>Building on mouse skills from previous term</p> <p>Building on selection and manipulation skills from previous term.</p> <p>Building on typing skills from previous terms and typing a sentence rather than one or two words.</p>	<p>Understanding the world</p> <p>Expressive art and design</p> <p>Fine and gross motor</p> <p>Mathematics</p> <p>Literacy</p>



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		<ol style="list-style-type: none">4. Children continue to build on their skills in the Music Tool Kit programme. Creating more specific compositions linked to minibeasts.5. Children use the 2paint tool kit to select their choice of tool and create a minibeasts picture including a typed sentence about their chosen minibeasts.6. Children use the Bee Bots to programme them to get to a specific destination on a map. This builds on the children previous programming and coding skills to ensure the programme in the correct directions before setting the Bee Bot off.	Building on Bee Bot programming skills from previous term looking at programming and coding skills.	
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Year 1				
<u>Topic</u> <u>Enquiry focus</u> Autumn	<u>Key Skills & Knowledge</u>	<u>Lesson Progression</u>	<u>Spiral knowledge building</u> Termly/Annually	<u>Curriculum Cohesion</u> <u>/Cultural Capital</u>
Bears Which bear would you like to be and why?	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	<ol style="list-style-type: none"> 1. To become familiar with the layout and the common functions of a keyboard by using a wide range of 2Type skills programs. Work on increasing both accuracy and speed of typing. 2. To create a given image, e.g. cat or flower, using basic art tools and to copy type a relevant sentence in a 2Publish template. Save work with one to one support. 3. To use a selection of paint tools in 2Paint to draw a picture of their teddy bear. Begin to understand that mistakes can be corrected. Type their name on their picture and save with increasing independence. 		Links with art (drawing bears), RE (rangoli) and maths/ Geography (mapping)
Guy Fawkes & the Gunpowder Plot What is a plot?	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	<ol style="list-style-type: none"> 4. Introduction to the basic terminology in coding. Understand the meaning of algorithm within a range of contexts. Move a Bee-bot purposefully to a destination using as few commands as possible. Understand that Bee-bots can be programmed in a real-life context using a mat and in a program on the screen. 5. Follow a series of given Bee-bot challenges to move their Bee-bot to set destinations in a specific order. Begin to understand why the Bee- bot moves in the wrong direction and begin to know that code can be debugged. 		
	Use logical reasoning to predict the behaviour of simple programs	<ol style="list-style-type: none"> 6. To explore a wide range of paint tools in 2paint to create a firework picture. Use a given word bank of firework sounds to label a number of the fireworks. Consider changing size, colour and font of the text to create the best effect. 7. To use 2simple slice pattern program to design a Rangoli pattern. Consider how the program can create different symmetrical effects. To save and print work independently wherever possible. Celebrate and critique completed patterns. 8. In the context of drawing a snowman use 2simple 2animate to animate a picture by gradually adding detail to a basic head and body drawing. Understand the difference between a 		



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		<p>picture and an animation and discuss what their experience of animation is. E.g. cartoons, Disney films etc. Peer play completed animations and evaluate which ones work well and why.</p> <p>9. To explore why online safety is important and how our online school E-safety rules keep us safe while we are enjoying the internet. Discuss each rule and give a real-life context to help understanding of the need for each rule. Log into Espresso considering the importance of keeping passwords secure. Follow guidance in how to use the safe search function to search online safety. View videos, activities and quizzes on Espresso discussing thoughts and evidence at regular intervals.</p> <p>10. To use their username and password to login to Purple Mash and understand that content is contained under different headings and can be saved in the cloud. Practise saving and retrieving work that they have completed. Understand that saved work is secure in their personal space on Purple Mash.</p>		
<u>Topic</u> <u>Enquiry focus</u> Spring	<u>NC</u> <u>Key Skills and Knowledge</u>	<u>Lesson Progression</u>	<u>Spiral knowledge</u> <u>building</u> Termly/Annually	<u>Curriculum</u> <u>Cohesion</u> /Cultural Capital
Bridges and the Life of Isambard Kingdom Brunel (Horace King) Could we live without bridges?	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	<p>1. To understand how data can be collected, stored or analysed to provide useful or interesting information. Create a class tally chart to record their favourite fruit. Understand the purpose of the tally chart. Interpret the information from the tally chart and create a pictogram by logging into Purple Mash using their username and password. Understand the need for accuracy of input and how data can be edited and sorted. Save work in folder with an appropriate filename. Understand who is able to view that saved work. Use the pictograms to answer the questions set.</p> <p>2. To use the 2code snail race coding activity in Purple Mash to revise, consolidate and build on coding skills from autumn term. Before completing each activity, peer discuss exactly what coding is required for each challenge. Consider the correct sequence of coding. Understand the word 'random' in</p>		Links to history of bridges, science (life cycles), maths (data, sorting), literacy (sentence building)
	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			



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	<p>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.</p>	<p>the context of the coding. Complete a free code activity with a number of design variables e.g. creating different snails and create and de-bug their code.</p> <ol style="list-style-type: none">3. To create a poster comparing two bridges. Understand that images sourced from the internet can be imported into their poster layout. Begin to understand the need to browse through different folders to find the information required. Consolidate and extend typing skills to include sentences describing their selected bridge. Use capital letters, punctuation and correct use of the space bar to create text. Change the size, font and colour of their text and begin to consider how that choice effects the reader. Save and retrieve work between lessons.4. To sort pictures and real-life objects into things that require technology to make them work and those that don't. Include objects from both school and the outside world.5. To create a poster to recount their class experience of observing eggs hatching into chicks. Understand that photographs taken can be saved, stored and used for different purposes. To select photographs for different purposes and import them into a poster template. Type sentences recounting their personal experiences of observing the chicks hatching. To focus on accuracy and speed of typing skills. To begin to understand that work can be edited at regular intervals.6. To revisit their understanding of how to keep safe online by sharing real world experiences and concerns in a group discussion. Log on to Purple Mash and consider how to find content on E-safety. Complete an E-safety quiz with class discussion available for each question.		
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<u>Topic</u> <u>Enquiry focus</u> Summer	<u>NC</u> <u>Key Skills and Knowledge</u>	<u>Lesson Progression</u>	<u>Spiral knowledge building</u> <u>Termly/Annually</u>	<u>Curriculum Cohesion</u> <u>/Cultural Capital</u>
The Victorians-old and new Was it ever fun being a Victorian child?	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>create and debug simple programs</p> <p>Use logical reasoning to predict the behaviour of simple programs</p> <p>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.</p>	<ol style="list-style-type: none"> To use the 2create a story program within Purple mash to create simple story pages with characters, sounds and animation within the story. Consider how the pages of the story can be linked. Explore a wide range of sounds and animations to add interest to their story. Type a short sentence under each picture. Use a pattern art program to design Victorian wallpaper to use as part of their D.T Victorian house project. Change the pattern and density tools to achieve the best effect. Research the science topic of growing plants using Espresso as a safe search tool. Consider what other ways we can research new topics. Discuss what the purpose of a search engine is and contrast typing growing plants into espresso and into the Google search bar. Discuss what problems we might have if we use Google. Explore a range of content on the subject and make notes of key findings. Complete an end of topic quiz. To draw a detailed picture of a flower and add appropriate labels to each part of the picture. Use a straight-line tool to support each label. To create an original multi-drag game, using 2Simple 2DIY to create a child friendly game. Select a scene and objects to populate that scene. Add sound and animation to objects. Save and share their game with a partner, encouraging constructive feedback. To use an electronic device (iPad) to photograph their completed DT Victorian house. Consider what a good quality photograph should look like and how we can photograph our house in different ways to show different aspects of our work, i.e. zoom. Understand that photographs can be stored, both on a device and a computer network or in the cloud. 		Links to history (Victorians) Science (flowers/growing) Art (William Morris)



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Year 2				
Topic Enquiry focus Autumn	NC Key Skills and Knowledge	Lesson Progression	Spiral knowledge building Termly/Annually	Curriculum Cohesion /Cultural Capital
Islands and Oceans Why don't we all live in the sea?	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Information technology 1. Use 2simple template to create a seaside poster Explore drawing tools to create a seaside image for the front of the postcard. Using keyboard skills type two sentences including an address and name. Change the font, size and colour of the text. 2. Use a wide range of 2Simple art tools to create an under the sea image showing effective use of at least three different tools. Explain why they have chosen these tools. To explore a range of templates in 2simple for different purposes and choose a poster layout to present information on a sea creature of their choice. To import an image from a safe source into their poster. Discuss copyright and how we are able to source child friendly images. Word process key facts into the poster. Explore a wider range of fonts and colours and be able to explain their choices made. Save, retrieve and edit work between lessons. 3. To use 2connect (Purple Mash) as a mapping and planning tool to present and organise ideas in preparation for writing a story about pirates. Sort ideas under headings, consider colour coding idea strands for ease of retrieval of information. Consider how mapping tools could be used for other purposes.	<ul style="list-style-type: none"> ➤ Build on year 1 knowledge of skills of creating posters and using tools ➤ Build on saving and retrieving skills from year 1 ➤ Build on coding skills from year 1 and progress de-bugging skills. ➤ Use more complex programs to create and de-bug code. 	Links with literacy and science - building sentences and living habitats
	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 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.			
Guy Fawkes & the Gunpowder Plot What if Guy Fawkes had been successful?				



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<p>Armistice Day Why do we remember?</p>		<p>4. To represent the four seasons of the year in art form using an appropriate computer template. Use a wide range of tools to improve the effect of each drawing.</p> <p>Edit work at regular intervals following feedback.</p> <p>Use a range of editing skills to improve work.</p> <p>Algorithms</p> <p>1. Think of an algorithm for a range of everyday tasks and instruct a partner to follow that algorithm. Use Purple Mash coding program to follow a series of coding challenges to make objects move. Identify and explain where code is not working effectively and edit code as appropriate.</p> <p>2. Create a plan for a Bee-bot to move to a number of destinations around a mat in a precise order. Program the Bee-bot to visit those destinations and then debug code to add, delete and edit code as appropriate.</p> <p>3. Introduce scratch (iPad app) to present coding activities of increasing complexity.</p> <p>Create scenes, characters and code to present a short story using scratch. Coding should include sound, timers and links from one scene to another.</p> <p>1. Following circle time discussion create a set of family E-safety rules that could be used at home.</p> <p>To discuss how technology is used in the home and for what purposes. Consider what the possible dangers are and what steps could be taken to enjoy the internet in a safe and constructive way.</p> <p>See all lessons</p>		
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<p>The Fire of London Samuel Pepys The Court of Henry VIII</p> <p>Was the Fire of London all bad?</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>create and debug simple programs</p> <p>use logical reasoning to predict the behaviour of simple programs</p>	<ol style="list-style-type: none"> 1. To use Espresso as a safe search engine to research The Great fire of London. Compare Espresso to another search engine considering the advantages and disadvantages of each. Consider how the material got onto the internet and what the original source was. i.e. diary entries, paintings and sketches. To type key words in the Espresso search bar and consider the relevance of the information. Share and use information at regular intervals. Complete an online topic quiz to check understanding of key information. 2. To understand how a PowerPoint slideshow can be used to illustrate a presentation of information to an audience. 3. Plan, a Power Point slideshow to present information about the Great Fire of London considering what images and information is needed. Use a variety of slide layouts for different purposes and format an appropriate background colour scheme for the slides. Look at a selection of images related to the Great Fire of London and discuss how these images are authentic and sourced from a wide range of material from the era. Compare digital images to authentic paintings or drawings (human memory). Insert selected images into each slide and type a short question or statement to add meaning to the slide. Explore a wide range 		



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	<p>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.</p>	<p>of fonts and text colours and understand how bold, italic, underlining and centre tools can be used. Add transitions and animations. Play slide show and peer review constructive feedback/ suggestions. Edit work as appropriate. To revisit the purpose and uses of the internet and the importance of having E- Safety rules. Create a mind map of E- Safety rules. To add information to a class blog on the subject of E- Safety. (Purple Mash) To discuss what a Blog is and what we can use it for. Consider who can view material once it has been published. Read and discuss each blog post.</p> <ol style="list-style-type: none">4. Design a poster in Purple Mash using safely sourced clipart images and typed captions to illustrate what makes them feel happy. Print and share content with the class.5. Create an original 3D maze game suitable for other children to be challenged by. Design a maze with a number of pathways and dead ends and play, evaluate and edit the maze to make it accessible and enjoyable for other children to play. Add movement, action , sound effects and points to objects to collect from the maze and a 'baddy' to create an extra layer of difficulty in playing the game. Type a set of instructions to go with the game outlining what the objective of the game is and how you will know if you have been successful. De-bug and edit the game following peer review.6. To complete a set of coding challenges on 2 code (Purple Mash- Guard the castle) Add characters and use code to make those characters move. Understand how to use new coding terminology:<ul style="list-style-type: none">▪ Collision detection▪ Changing the image of the character into another character or object▪ Setting a timer to a code to delay an action taking place▪ Using the prompt when clicked <p>Revisit the importance of password security and the possible</p>		
	<p>recognise common uses of information technology beyond school</p>			



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		<p>consequences of not logging out of a program.</p> <p>7. Discuss the uses of technology in and out of school and what they are used for in everyday life.</p> <p>Go on a technology walk around the school and discuss, draw and label technology that they find. Discuss what technology they would find out of school and add to their work.</p> <p>Understand that technology can be powered in different ways i.e. batteries or mains supply.</p>		
<p>Topic Enquiry focus Summer</p>	<p>NC Key Skills and Knowledge</p>	<p>Lesson Progression</p>	<p>Spiral knowledge building Termly/Annually</p>	<p>Curriculum Cohesion /Cultural Capital</p>
<p>Florence the Nurse (Mary Seacole)</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>	<p>1. Introduce Microsoft Word and the basic tools and functions. To understand that Microsoft Word can be used for a wide range of documents.</p> <p>To insert a photograph of themselves from a named folder by browsing through the correct drives and folders. Resize the photo and centre it on the page. Type a number of simple sentences about themselves, highlight the text and change it by using a different size, colour and font. Use bold, italic and underline functions where appropriate.</p> <p>Save, retrieve and edit work. Consider printing options.</p>		
<p>Why do we still talk about them today?</p>	<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p>			
<p>Neil Armstrong Why was his footprint so bad?</p>	<p>create and debug simple programs</p> <p>use logical reasoning to predict the behaviour of simple programs</p>	<p>2. To present knowledge of Nocturnal animals into a poster, booklet or leaflet.</p> <p>Choose from a wide range of templates to best present their knowledge of a subject.</p> <p>To plan how best to present facts under key headings and consider what images would enhance their work.</p> <p>Understand that copyright laws mean that some images can't be used.</p>		



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	<p>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.</p>	<p>Import safely sourced images from a given folder, type information under appropriate photographs and headings, edit the size, colour and font to improve the look/ ease of reading. Save, retrieve and edit work at regular intervals and print and share work with the class.</p> <p>3. Collect information on a given subject and enter data into Purple Mash 2Graph. Consider a title to reflect the content of that graph. View that data in different graph format considering the advantages and disadvantages of each graph for ease of retrieval of information. Use the chosen graph to analyse and answer questions on that data. Consider how the scale size can be used and how information can be presented in ascending or descending order.</p> <p>4. To use an electronic device (iPad) to photograph a vase of flowers. Consider what a good quality photograph should look like and how we can photograph the flowers in different ways to show different perspectives, i.e. zoom. Know that photographs can be edited and explore the editing tools on the iPad. Understand that photographs can be stored, both on a device and a computer network or in the cloud. Consider how images can be shared and who can view them. (E- safety Link)</p>	<p>➤ Build on skills learnt in year 1 and now focus on using filters and evaluating which photo would be the best.</p>	
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