LUDDENDEN CE SCHOOL

COMPUTING CURRICULUM PLAN

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	INTENT – Luddenden CE School is committed to providing an environment which inspires confident, independent and innovative learners. Our Computing curriculum is designed to ensure our pupils develop the knowledge and skills that will enable them to go out into the world digitally literate and able to participate fully in the future digital lifestyles and workplace. We aim for our pupils to become digital creators as well as discerning digital consumers. Our curriculum ensures that pupils understand how to keep themselves safe online and develops pupils' resilience and responsiveness to the ever-changing online world and world of technology. Our core values in Computing are creativity, endurance, openness and respect. **IMPLEMENTATION** – The Purple Mash schemes of work will form the core computing curriculum. Throughout their time in school pupils will build, strengthen and enhance their computing knowledge, skills and understanding through a wide range of engaging, practical and relevant learning activities. Optimum use will be made of cross-curricular links to consolidate learning in Computing and to promote learning in other subjects. **IMPACT** - Children can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. Children can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. Children can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems. Children are responsible, competent, confident and creative users of information and communication technology					
Early Years	Children in the Early Years will experience the use of technology for various purposes, across all areas of learning and development.					
Year 1	**1.1 Online Safety & Exploring Purple Mash** • Log in safely. • Learn how to find saved work in the Online Work area and find teacher comments. • Learn how to search Purple Mash to find resources. • Become familiar with the icons and types of resources available in the Topics section. • Start to add pictures and text to work. • Explore the Tools and Games section of Purple Mash. • Learn how to open, save and print. • Understand the importance of logging out.	**1.2 Grouping & Sorting** • Sort items using a range of criteria. • Sort items on the computer using the 'Grouping' activities in Purple Mash.	**1.3 Pictograms** • Understand that data can be represented in picture format. • Contribute to a class pictogram. • Use a pictogram to record the results of an experiment.	**1.4 Lego Builders** • Compare the effects of adhering strictly to instructions to completing tasks without complete instructions. • Follow and create simple instructions on the computer. • Consider how the order of instructions affects the result.	**1.5 Maze Explorers** • Understand the functionality of the direction keys. • Understand how to create and debug a set of instructions (algorithm). • Use the additional direction keys as part of an algorithm. • Understand how to change and extend the algorithm list. • Create a longer algorithm for an activity. • Set challenges for peers. • Access peer challenges set by the teacher as 2dos.	**1.6 Animated Story Books** • Introduce e-books and the 2Create a Story tool. • Add animation to a story. • Add sound to a story, including voice recording and music the children have composed. • Work on a more complex story, including adding backgrounds and copying and pasting pages. • Share e-books on a class display board.	**1.7 Coding** • Understand what coding means. • Use design mode to set up a scene. • Add characters. • Use code blocks to make the character perform actions. • Use collision detection. • Save and share work. • Know the save, print, open and new icon. **1.8 Spreadsheets** • Know what a spreadsheet program looks like. • Know how open 2Calculate in Purple Mash. • Know How to enter data into spreadsheet cells. • Use 2Calculate image tools to add clipart to cells. • Use 2Calculate control tools: lock, move cell, speak and count. **1.9 Technology outside school** • Walk around the local community and find examples of where technology is used. • Record examples of technology outside school.
Year 2	**2.1 Coding** • Understand what an algorithm is. • Design algorithms and then code them. • Compare different object types. • Use the repeat command. • Use the timer command. • Know what debugging is and debug programs.	**2.2 Online Safety** • Know how to refine searches using the Search tool. • Use digital technology to share work on Purple Mash to communicate and connect with others locally. • Have some knowledge and understanding about sharing more globally on the Internet. • Introduce Email as a communication tool using 2Respond simulations. • Understand how we should talk to others in an online situation. • Open and send simple online communications in the form of email. • Understand that information put online leaves a digital footprint or trail. • Identify the steps that can be taken to keep personal data and hardware secure	**2.3 Spreadsheets** • Use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. • Learn how to copy and paste in 2Calculate. • Use the totalling tools. • Use a spreadsheet for money calculations. • Use the 2Calculate equals tool to check calculations. • Use 2Calculate to collect data and produce a graph.	**2.4 Questioning Pictograms** • Learn about data handling tools that can give more information than pictograms. • Use yes/no questions to separate information. • Construct a binary tree to identify items. • Use 2Question (a binary tree database) to answer questions. • Use a database to answer more complex search questions. • Use the Search tool to find information.	**2.5 Effective Searching** • Understand the terminology associated with searching. • Gain a better understanding of searching on the Internet. • Create a leaflet to help someone search for information on the Internet.	**2.6 Creating Pictures** • Learn the functions of the 2Paint a Picture tool. • Learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). • Recreate Pointillist art and look at the work of pointillist artists such as Seurat. • Learn about the work of Piet Mondrian and recreate the style using the lines template. • Learn about the work of William Morris and recreate the style using the patterns template. • Explore surrealism and eCollage	**2.7 Making Music** • Make music digitally using 2Sequence. • Explore, edit and combine sounds using 2Sequence. • Edit and refine composed music. • Think about how music can be used to express feelings and create tunes which depict feelings. • Upload a sound from a bank of sounds into the Sounds section. • Record and upload environmental sounds into Purple Mash. • Use these sounds to create tunes in 2Sequence. **2.8 Presenting ideas** • Explore how a story can be presented in different ways. • Make a quiz about a story or class topic. • Make a fact file on a non-fiction topic. • Make a presentation to the class.
Year 3	**3.1 Coding** • Design algorithms using	**3.2 Online Safety** • Know what makes a safe	**3.3 Spreadsheets** • Use the symbols more than,	**3.4 Touch Typing** • Introduce typing	**3.5 Email** • Think about different	**3.6 Branching Databases** • Sort objects using just 'yes'	**3.7 Simulations** • Consider what simulations **3.9 Powerpoint** • Understand the uses of

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flowcharts. • Design an algorithm that represents a physical system and code this representation. • Use selection in coding with the 'if' command. • Understand and use variables in 2Code. • Deepen understanding of the different between timers and repeat commands.	password. • Methods for keeping passwords safe. • Understand how the Internet can be used in effective communication. • Understand how a blog can be used to communicate with a wider audience. • Consider the truth of the content of websites. • Learn about the meaning of age restrictions symbols on digital media and devices.	less than and equal to, to compare values. • Use 2Calculate to collect data and produce a variety of graphs. • Use the advanced mode of 2Calculate to learn about cell references.	terminology. • Understand the correct way to sit at the keyboard. • Learn how to use the home, top and bottom row keys. • Practise typing with the left and right hand.	methods of communication. • Open and respond to an email using an address book. • Learn how to use email safely. • Add an attachment to an email. • Explore a simulated email scenario.	or 'no' questions. • Complete a branching database using 2Question. • Create a branching database of the children's choice.	are. • Explore a simulation. • Analyse and evaluate a simulation. **3.8 Graphing** • Enter data into a graph and answer questions. • Solve an investigation and present the results in graphic form.	PowerPoint. • Create a page in a presentation. • Add media to a presentation. • Add animations to a presentation. • Add timings to a presentation. • Use the skills learnt to design and create an engaging presentation.
Year 4 **4.1 Coding** • Use selection in coding with the 'if/ else' command. • Understand and use variables in 2Code. • Use flowcharts for design of algorithms including selection. • Use the 'repeat until' with variables to determine the repeat. • Learn about and use computational thinking terms; decomposition and abstraction.	**4.2 Online Safety** • 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. • 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 to consider the consequences of plagiarism. • Identify appropriate behaviour when participating or contributing to collaborative online projects for learning. • Identify the positive and negative influences of technology on health and the environment. • Understand the importance of balancing game and screen time with other parts of their lives.	**4.3 Spreadsheets** • Formatting cells as currency, percentage, decimal to different decimal places or fraction. • Using the formula wizard to calculate averages. • Combining tools to make spreadsheet activities such as timed times tables tests. • Using a spreadsheet to model a real- life situation. • Add a formula to a cell to automatically make a calculation in that cell.	**4.4 Writing for different audiences** • Explore how font size and style can affect the impact of a text. • Use a simulated scenario to produce a news report. • Use a simulated scenario to write for a community campaign.	**4.5 Logo** • Learn the structure of the coding language of Logo. • Input simple instructions in Logo. • Using 2Logo to create letter shapes. • Use the Repeat function in Logo to create shapes. • Use and build procedures in Logo.	**4.6 Animation** • Discuss what makes a good animated film or cartoon. • Learn how animations are created by hand. • Find out how 2Animate can be created in a similar way using the computer. • Learn about onion skinning in animation. • Add backgrounds and sounds to animations. • Be introduced to 'stop motion' animation. • Share animation on the class display board and by blogging.	**4.7 Effective Searching** • Locate information on the search results page. • Use search effectively to find out information. • Assess whether an information source is true and reliable.	**4.8 Hardware Investigators** • Understand the different parts that make up a computer. • Recall the different parts that make up a computer. **4.9 Making Music** • Identify and discuss the main elements of music. • Understand and experiment with rhythm and tempo. • Create a melodic phrase. • Electronically compose a piece of music.
Year 5 **5.1 Coding** • Represent a program design and algorithm. • Create a program that simulates a physical system using decomposition. • Explore string and text variable types so that the most appropriate can be used in programs. • Use the Launch command in 2Code Gorilla. • Program a playable game with timers and scorepad.	**5.2 Online Safety** • Gain a greater understanding of the impact that sharing digital content can have. • Review sources of support when using technology and children's responsibility to one another in their online behaviour. • Know how to maintain secure passwords. • Understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. • Be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. • Learn about how to reference sources in their	**5.3 Spreadsheets** • Using the formula wizard to add a formula to a cell to automatically make a calculation in that cell. • Copy and paste within 2Calculate. • Using 2Calculate tools to test a hypothesis. • Add a formula to a cell to automatically make a calculation in that cell. • Using a spreadsheet to model a real-life situation and answer questions.	**5.4 Databases** • Learn how to search for information in a database. • Contribute to a class database. • Create a database around a chosen topic.	**5.5 Game Creator** • Set the scene. • Create the game environment. • Create the game quest. • Finish and share the game. • Evaluate their and peers' games.	**5.6 3D Modelling** • Be introduced to 2Design and Make and the skills of computer aided design. • Explore the effect of moving points when designing. • Understand designing for a purpose. • Understand printing and making.	**5.7 Concept Maps** • Understand the need for visual representation when generating and discussing complex ideas. • Understand and use the correct vocabulary when creating a concept map. • Create a concept map. • Understand how a concept map can be used to retell stories and present information. • Create a collaborative concept map and present this to an audience.	

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		• work • Search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.						
Year 6	**6.1 Coding** • Use the program design process, including flowcharts, to develop algorithms for more complex programs using and understanding of abstraction and decomposition to define the important aspects of the program. • Code, test and debug from these designs. • Use functions and tabs in 2Code to improve the quality of the code. • Code user interactivity using input functions.	**6.2 Online Safety** • Identify benefits and risks of mobile devices broadcasting the location of the user/device. • Identify secure sites by looking for privacy seals of approval. • Identify the benefits and risks of giving personal information. • Review the meaning of a digital footprint. • Have a clear idea of appropriate online behaviour. • Begin to understand how information online can persist. • Understand the importance of balancing game and screen time with other parts of their lives. • Identify the positive and negative influences of technology on health and the environment.	**6.3 Spreadsheets** • Use a spreadsheet to investigate the probability of the results of throwing many dice. • Using the formula wizard to add a formula to a cell to automatically make a calculation in that cell. • Create graphs showing the data collected. • Type in a formula for a cell to automatically make a calculation in that cell. • Use a spreadsheet to create computational models and answer questions.	**6.4 Blogging** • Identify the purpose of writing a blog and its key features. • Plan the theme and content for a blog and write the content. • Consider the effect upon the audience of changing the visual properties of the blog. • Understand the importance of regularly updating the content of a blog. • Understand how to contribute to an existing blog. • Understand how and why blog posts are approved by the teacher.	**6.5 Text Adventures** • Find out what a text adventure is. • Plan a story adventure. • Make a story-based adventure. • Introduce map-based text adventures. • Code a map-based text adventure.	**6.6 Networks** • Learn about what the Internet consists of. • Find out what a LAN and a WAN are. • Find out how the Internet is accessed in school. • Research and find out about the age of the Internet. • Think about what the future might hold.	**6.7 Quizzing** • Create a picture-based quiz for young children. • Learn how to use the question types within 2Quiz. • Explore the grammar quizzes. • Make a quiz that requires the player to search a database.	**6.8 Binary** • Know what the terms binary and denary mean and how they relate to the number system, the digital system and the terms base-10 and base-2 • Relate binary to the on and off states of electrical switches. • Convert numbers from decimal to binary. • Convert numbers from binary to decimal. • Represent states of object in their own program using binary.