

Lowerplace Computing Annual Curriculum Overview

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing Systems and Networks	<p>Technology around Us Examples of everyday technology. How we use the interactive whiteboard for putting on dojos, enhancing learning, etc.</p>	<p>Technology Around Us Examples of technology in school Components of a computer Mouse and Keyboard skills L6 – internet safety</p>	<p>IT Around Us IT at school and other settings. Benefits of technology. Using technology responsibly. L5 – internet safety</p>	<p>Connecting Computers Develop understanding of inputs, processes and outputs. Explain how computer networks can be used to share information. Explore how computers can be connected. Recognise the physical components of a network.</p>	<p>The Internet Describe parts of a network and how they connect to each other to form the Internet. Describe how content can be added and accessed on the WWW. Explain that there are rules to protect content. Evaluate the consequences of unreliable content.</p>	<p>Sharing Information Explain that computers can be connected to form systems. Recognise the role of computer systems in our lives. Recognise how information is transferred over the internet. Sharing information online allows collaboration from different places.</p>	<p>Communication Identify how to use a search engine. Recognise the role of web crawlers in creating an index. Explain how search results are ranked and suggest some of the criteria used to do this. Recognise why order is important</p>
Creating Media	<p>Digital Discuss with children how they use computing in the home, what might they use it for. Discuss and show children how we can take photographs using an iPad</p>	<p>Digital Painting Using tools to create digital paintings inspired by artists. Preferences for painting with and without digital devices. Art – art in the style of Wassily Kandinsky</p>	<p>Digital photography Identify devices used to capture photographs. Capture, edit and improve photographs. Recognise images they see might not be real. Art – patterns, portraits (Andy Warhol style)</p>	<p>Animation Explain what an animation is. Plan an animation. Use onion skinning to make small changes. Review and improve an animation. Add mother media to an animation. English/Topic – storyboard animation</p>	<p>Audio Editing Identify inputs and outputs required to record sounds or play audio. Use digital devices to record sounds. Plan, save and edit digital recordings. Record and add additional content. Evaluate editing choices made. English/Topic – record a podcast</p>	<p>Vector Drawing Recognise how vector drawings are made, identifying the main tools. Create vector drawings, using tools to create a desired effect. Change the order of layers. Group objects to makes copies.</p>	<p>Modelling Use a computer to create and manipulate 3D objects. Compare working digitally with 2D and 3D objects. Construct 3D models of physical objects. Design, develop and improve 3D models. DT</p>
Creating Media	<p>Digital Discuss how technology helps us find out about different people. It can also help other people know about them.</p>	<p>Digital Writing Create and manipulate text. Change the look of text and justify reasoning for this. Differences between using computers and paper to write text and preferences. English/Topic – word processing</p>	<p>Making Music Listen to music, considering how it make them think and feel. Compare creating music digitally and non-digitally. Look at patterns and purposefully create music. Music</p>	<p>Desktop Publishing Recognise how text and images convey information. Create templates for a specific purpose. Add content making choices about location. Identify how different layouts suit different purposes. Identify the benefits of desktop publishing. English/Topic</p>	<p>Photo Editing Explain that digital images can be changed and the effects of doing this. Change the composition of an image. Change images by using retouching tools. Explain the positive and negative effects of retouching. Recognise that not all images are real.</p>	<p>Video Editing Recognise video as moving images which can include audio. Plan and capture a video project. Create an effect video thinking about angles and lighting. Edit my video. Store, retrieve and export it. Topic</p>	<p>Web page Creation Review a website and consider its structure. Recognise the common features of a webpage and plan their own. Consider the ownership and use of images. Recognise the need to preview pages. Explain why navigation paths are needed. Recognise the implications of linking to content owned by others. PSHE</p>

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Data and Information	<p>Data Sort and group children according to likes and dislikes of food. Discuss how this gives us information about things.</p>	<p>Grouping Data Describe objects using labels. Sorts objects into groups based on properties and then use this to answer questions about data.</p> <p>Maths/Science – labelling and sorting</p>	<p>Pictograms Understand the term 'data' and how it can be collected in tally charts. Understand the term 'attribute' and use this to help organise data. Present data in pictograms and block diagrams. Use data to answer questions.</p>	<p>Branching Databases Select 'attributes' to sort data into groups. Write questions with yes/no answers. Create physical and on-screen branching databases. Evaluate their effectiveness. Identify which types of data are best presented in this way.</p> <p>Maths/Science</p>	<p>Data Logging Choose a data set to answer a question. Answer questions using a data set. Identify data which can be gathered over time. Explain how data loggers work and use them to collect data. Propose a question that can answered using logged data. Plan, collect and interpret data collected. Maths/Science</p>	<p>Flat-file Databases Create record card databases- paper and digital, comparing them. Explain what a 'field' and 'record' are. Group and sort information to answer questions. Explain that tools can be used to select specific data. Ask and answer real word questions. Maths</p>	<p>Spreadsheets Identify questions which can be answered using data. Build a data set in a spreadsheet. Construct formulas in a spreadsheet. Use a spreadsheet to plan an event. Produce a graph to show answers to questions.</p> <p>Maths</p>
Programming A	<p>Moving a Robot. Bee bot. Children use the Beebot and give instructions for directions.</p>	<p>Moving a Robot Explain given commands and follow instructions. Combine two and four direction commands to make a sequence. Plan a simple program. Find solutions to problems.</p> <p>Maths - Directions</p>	<p>Robot Algorithms Describe a series of instructions as a sequence and explain what happens when we change the order of instructions. Use logical reasoning to predict the outcome of a program and explain that programming projects can have code and artwork. Design an algorithm and create and debug a program.</p>	<p>Sequencing Sounds Explore a new programming environment and explain that objects in Scratch have attributes. Identify that commands have an outcome. Explain that a program has a start Recognise that a sequence of commands can have an order. Change the appearance of a project and create a project from a task description. Music</p>	<p>Repetition in Shapes Identify that accuracy in programming is important. Create a program in a text-based language and explain what 'repeat' means. Modify a count-controlled loop to produce a given outcome. To decompose a program into parts. Create a program that uses a count-controlled loop to produce a given outcome. Maths – 2D shapes</p>	<p>Selection in Physical Computing To control a simple circuit connected to a computer. Write a program that includes count-controlled loops and explain that a loop can stop when a condition is met. Conclude that a loop can be used to repeatedly check whether a condition has been met. Design a physical project and a controllable system that includes selection. DT</p>	<p>Variable in Games Define a 'variable' as something that is changeable and why it is used in a program. Choose how to improve a game by using variables. Design and create project that build on a given example. Evaluate completed project. DT</p>
Programming B	<p>Programing Familiarisation with known programmes.</p>	<p>Programming Animations Choose a command for a given purpose and show that a series of commands can be joined together. Identify the effect of changing a value and that each sprite has its own value. Design the parts of a project and use their algorithm to create a program.</p>	<p>Programming Quizzes Explain that a sequence of commands has a start and an outcome. Create and change a program using a given design. Create a program using own design and decide how it can be improved.</p>	<p>Events and Actions in Programs Explain how a sprite moves in an existing project and create a program to move a sprite in four directions. Adapt a program to a new context and develop it by adding features. Identify and fix bugs in a program. Design and create a maze-based challenge.</p>	<p>Repetition in Games Develop the use of count-controlled loops in a different programming environment. Explain that in programming there are infinite loops and count-controlled loops. Develop a design that includes two or more loops which run at the same time. Design and create a project that includes repetition.</p>	<p>Selection in Quizzes Explain how selection is used in computer programs and it directs the flow of a program. Relate that a conditional statement connects a condition to an outcome. Design and create a program which uses selection. Evaluate completed program.</p>	<p>Sensing Create a program to run on a controllable device. Explain that selection can control the flow of a program. Update a variable with a user input. Design and create a program to use inputs and outputs on a controllable device.</p>