Leverstock Green CE (VC) Primary School

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Subject	**Computing**				
Subject Leader	**Becky Newman**				
EYFS	The use of technology is on-going throughout EYFS. Technology can be seen in a number of different circumstances. **Personal, Social and Emotional Development** - showing resilience and perseverance in the face of a challenge. So be confident to try new activities and show independence, resilience and perseverance. **Physical Development** - Develop their small motor skills so they can use a range of tools competently, safely and confidently. Know and talk about the different factors that support their overall health and wellbeing. Sensible amounts of screen time. **Expressive Arts & Design** - Explore, use and refine a variety of artistic effects to express. Their ideas and feelings. Children are exposed to some of the skills and equipment used in computing through linked provision and access to technological toys in the classroom: • taking a photograph with a camera or tablet • searching for information on the internet • playing games on the interactive whiteboard • exploring an old typewriter or other mechanical toys – Linking with the technology around us unit in Year 1 • using a Beebot –Links with Year 1 unit – Programming A – Moving a Robot unit • watching a video clip – learning that the internet can be used to support the learning. This links in with Computer systems & Networks Units. Developing mouse skills, keyboard, as well as using a computer responsibly • listening to music – link to the units in Year 2 Digital Media – Making Music • Phonics Play online – this links to their phonics learning across KS1 • Using the interactive whiteboard to enhance their learning. This links with the Creating media – Digital painting unit in Year 1. Where children learn to use IPads and be able use a computer/IPad to paint Allowing children the opportunity to explore technology in this carefree and often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in Key Stage 1 Computing and all that it demands. Children develop a greater understanding of the world by recognising a range of technology that is used in their homes and In EYFS, having open ended activities that encourage the children to use all their senses to observe, discover and engage with the world, encouraging them to tinker, play and explore. Opportunities to take things apart, to build and make models help children to be creative. Getting children to recreate a pattern or draw a picture can all encourage them to debug. Computational thinking in EYFS: **Logical reasoning** - What will happen if I do this? How do you know? **Algorithms** - What do I need to do to solve this? Is there a better way? **Decomposition** - Can we break this problem up? Could we each do different jobs to solve a problem? **Patterns** - Have you solved something like this before? What did you do then and what's changed? Abstraction - What's the most important thing here? Maybe we can draw a picture of this? **Evaluation** - What went well? Which way worked best? What would you do differently next time				
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**
Year 1	**COMPUTING SYSTEMS & NETWORKS** **TECNOLOGY AROUND US** • **To identify technology** • **To identify a computer and its main parts**	**CREATING MEDIA** **DIGITAL PAINTING** • **To describe what different freehand tools do** • **To use the shape tool and the line tools** • **To make careful choices when painting a**	**PROGRAMMING A** **MOVING A ROBOT** • **To explain what a given command will do** • **To act out a given word**	**DATA & INFORMATION** **GROUPING DATA** • **To label objects** • **To identify that objects can be counted**	**PROGRAMMING B** **INTRODUCTION TO ANIMATIONS** • **To choose a command for a given purpose** • **To show that a series of commands can be joined together**

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	• To use a mouse in different ways • To use a keyboard to type on a computer • To use the keyboard to edit text • To create rules for using technology responsibly	digital picture • To *explain* why I chose the tools I used • To use a computer on my own to paint a picture • To compare painting a picture on a computer and on paper *Links to Science – Herbivores/Carnivores/Omnivores* *Art/English – What animal am I?* *Maths – 2D/3D shapes*	• To combine forwards and backwards commands to make a sequence • To combine four direction commands to make sequences • To plan a simple program • To find more than one solution to a problem History – Links with Pirates – map making Maths – Directions – N,E,S,	• To describe objects in different ways • To count objects with the same properties • To compare groups of objects • To answer questions about groups of objects *Links with maths – Counting the number of objects*	• To identify the effect of changing a value • To explain that each sprite has its own instructions • To design the parts of a project • To use my algorithm to create a program	
E safety	**Autumn 1** CSM - Introductory Song - Media Balance is Important	**Autumn 2** CSM - Media Balance & Well-Being	**Spring 1** CSM - Privacy & Security	**Spring 2** PE - Managing Online Information	**Summer 1** PE - Online Relationships	**Summer 2** PE - Online Bullying
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	
Year 2	COMPUTING SYSTEMS & NETWORKS – IT AROUND US: • To recognise the uses and features of information technology • To identify information technology in the home • To identify information technology beyond school • To explain how information technology benefits us • To show how to use information technology safely • To recognise that choices are made when using information technology	CREATING MEDIA - DIGITAL PHOTOGRAPHY: • To use a digital device to take a photograph • To make choices when taking a photograph • To describe what makes a good photograph • To decide how photographs can be improved • To use tools to change an image • To recognise that photos can be changed	PROGRAMMING A – ROBOT ALGORITHMS: • To describe a series of instructions as a sequence • To explain what happens when we change the order of instructions • To use logical reasoning to predict the outcome of a program (series of commands) • To explain that programming projects can have code and artwork • To design an algorithm • To create and debug a program that I have written	CREATING MEDIA – MAKING MUSIC: • To say how music can make us feel • To identify that there are patterns in music • To describe how music can be used in different ways • To show how music is made from a series of notes • To create music for a purpose • To review and refine our computer work *Links with maths – patterns*	PROGRAMMING B – PROGRAMMING QUIZZES: • To explain that a sequence of commands has a start • To explain that a sequence of commands has an outcome • To create a program using a given design • To change a given design • To create a program using my own design • To decide how my project can be improved *Links to English – sequencing – Instruction writing/ chronological order*	
E-safety	**Autumn 1** CSM - Introductory Song Pause & Think Online	**Autumn 2** CSM - Media Balance & Well-Being	**Spring 1** CSM - Privacy & Security	**Spring 2** PE - Managing Online Information	**Summer 1** PE - Online Relationships	**Summer 2** PE - Online Bullying

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	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Year 3	**COMPUTING SYSTEMS AND NETWORKS** **CONNECTING COMPUTERS** • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way we work • To explain how a computer network can be used to share information • To explore how digital devices can be connected • To recognise the physical components of a network	**CREATING MEDIA** **STOP-FRAME ANIMATION** • To explain that animation is a sequence of drawings or photographs • To relate animated movement with a sequence of images • To plan an animation • To identify the need to work consistently and carefully • To review and improve an animation • To evaluate the impact of adding other media to an animation *Links – History – Romans/ St Albans*	**PROGRAMMING A** **SEQUENCE IN MUSIC** • To explore a new programming environment • I can identify that each sprite is controlled by the commands I choose • To explain that a program has a start • To recognise that a sequence of commands can have an order • To change the appearance of my project • To create a project from a task description *Links to English – sequencing with Instruction writing*	**DATA AND INFORMATION** **BRANCHING DATABASES** • To create questions with yes/no answers • To identify the object attributes needed to collect relevant data • To create a branching database • To identify objects using a branching database • To explain why it is helpful for a database to be well structured • To compare the information shown in a pictogram with a branching database	**PROGRAMMING B** **EVENTS AND ACTIONS** • To explain how a sprite moves in an existing project • To create a program to move a sprite in four directions • To adapt a program to a new context • To develop my program by adding features • To identify and fix bugs in a program • To design and create a maze-based challenge
E-safety	Autumn 1 Introductory Song We, the Digital Citizens	Autumn 2 Media Balance & Well-Being	Spring 1 Privacy & Security	Spring 2 Digital Footprint & Identity	Summer 1 Relationships & Communication	Summer 2 Cyberbullying, Digital Drama & Hate Speech
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	Unit 5
Year 4	**CREATING MEDIA** **AUDIO EDITING** • To identify that sound can be digitally recorded • To use a digital device to record sound • To explain that a digital recording is stored as a file • To explain that audio can be changed through editing • To show that different types of audio can be combined and played together	**PROGRAMMING A** **REPETITION IN SHAPES** • To identify that accuracy in programming is important • To create a program in a text-based language • To explain what 'repeat' means • To modify a count-controlled loop to produce a given outcome • To decompose a program into parts • To create a program that uses count-controlled loops to produce a given outcome	**DATA AND INFORMATION** **DATA LOGGING** • To explain that data gathered over time can be used to answer questions • To use a digital device to collect data automatically • To explain that a data logger collects 'data points' from sensors over time • To use data collected over a long duration to find information	**CREATING MEDIA** **PHOTO EDITING** • To explain that digital images can be changed • To change the composition of an image • To describe how images can be changed for different uses • To make good choices when selecting different tools • To recognise that not all images are real	**PROGRAMMING B** **REPETITION IN GAMES** • To develop the use of count-controlled loops in a different programming environment • To explain that in programming there are infinite loops and count controlled loops • To develop a design which includes two or more loops which run at the same time • To modify an infinite loop in a given program

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	• To evaluate editing choices made	*Links - Maths - Shapes*	• To identify the data needed to answer questions • To use collected data to answer questions *Links to States of matter*	• To evaluate how changes can improve an image *Links - PSHE*	• To design a project that includes repetition • To create a project that includes repetition	
E-safety	Autumn 1 News & Media Literacy	Autumn 2 Privacy and Security	Spring 1 Media Balance and Well-being	Spring 2 Digital footprint and identity	Summer 1 Relationships and Communication	Summer 2 News and Media literacy
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	Unit 5	
Year 5	COMUTING SYSTEMS AND NETWORKS Sharing information • To explain that computers can be connected together to form systems • To recognise the role of computer systems in our lives • To recognise how information is transferred over the internet • To explain how sharing information online lets people in different places work together • To contribute to a shared project online To evaluate different ways of working together online	CREATING MEDIA VIDEO EDITING • To recognise video as moving pictures, which can include audio • To identify digital devices that can record video • To capture video using a digital device • To recognise the features of an effective video • To identify that video can be improved through reshooting and editing • To consider the impact of the choices made when making and sharing a video	PRAGRAMMING A SELECTION IN PHYSICAL COMPUTING • To control a simple circuit connected to a computer • To write a program that includes count-controlled loops • To explain that a loop can stop when a condition is met, eg number of times • To conclude that a loop can be used to repeatedly check whether a condition has been met • To design a physical project that includes selection • To create a controllable system that includes selection •	CREATING MEDIA VECTOR DRAWING • To identify that drawing tools can be used to produce different outcomes • To create a vector drawing by combining shapes • To use tools to achieve a desired effect • To recognise that vector drawings consist of layers • To group objects to make them easier to work with • To evaluate my vector drawing *Links – Art – what famous artists are there who use vector illustrations*	PROGRAMMING B SELECTION IN QUIZZES • To explain how selection is used in computer programs • To relate that a conditional statement connects a condition to an outcome • To explain how selection directs the flow of a program • To design a program which uses selection • To create a program which uses selection • To evaluate my program	
E-safety	Autumn 1 Cyberbullying, digital drama and hate speech	Autumn 2 Media Balance and Well-being	Spring 1 Privacy and Security	Spring 2 Digital footprint and identity	Summer 1 Relationships and Communication	Summer 2 News and Media literacy
	Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	

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Year 6	**COMPUTING SYSTES AND NEYWROKS** **COMMUNICATION** • To identify how to use a search engine • To describe how search engines select results • To explain how search results are ranked • To recognise why the order of results is important, and to whom • To recognise how we communicate using technology • To evaluate different methods of online communication	**PROGRAMMING A** **VARIABLES IN GAMES** • To define a 'variable' as something that is changeable • To explain why a variable is used in a program • To choose how to improve a game by using variables • To design a project that builds on a given example • To use my design to create a project • To evaluate my project	**DATA AND INFORMATION** **INTRODUCTION TO SPREADSHEETS** • To identify questions which can be answered using data • To explain that objects can be described using data • To explain that formula can be used to produce calculated data • To apply formulas to data, including duplicating • To create a spreadsheet to plan an event • To choose suitable ways to present data	**CREATING MEDIA** **3D MODELLING** • To use a computer to create and manipulate three-dimensional (3D) digital objects • To compare working digitally with 2D and 3D graphics • To construct a digital 3D model of a physical object • To identify that physical objects can be broken down into a collection of 3D shapes • To design a digital model by combining 3D objects • To develop and improve a digital 3D model ***Links – maths History – 3D model around WW2 – Battle of Britain***	**PROGRAMMING B** **SENSING** • To create a program to run on a controllable device • To explain that selection can control the flow of a program • To update a variable with a user input • To use an conditional statement to compare a variable to a value • To design a project that uses inputs and outputs on a controllable device • To develop a program to use inputs and outputs on a controllable device

E-safety	**Autumn 1** **Cyberbullying, digital drama and hate speech**	**Autumn 2** **Media Balance and Well-being**	**Spring 1** **Privacy and Security**	**Spring 2** **Digital footprint and identity**	**Summer 1** **Relationships and Communication**	**Summer 2** **News and Media literacy**