Longcause Community Special School Computing

Underpinning our curriculum intent are key concepts along with the National Curriculum Computing statements. These are further refined by key substantive and disciplinary concepts:

Substantive Concepts (pillars)	Definition
Computer Science	The technical design. The design of new software, the solution to computing problems and the development of different ways to use technology.
Information Technology	The technical knowledge. The design, use and understanding of hardware and software: computers and electronic systems for storing and using information.
Digital Literacy	The technical skills. The ability to use information and communication technologies to find, create, evaluate and communicate information.

Disciplinary Concepts	Definition
Code	Using and writing codes to produce instructions and algorithms; to solve problems; to test and use logic and sequences against inputs and outputs.
Connect	Being able to safely, effectively and confidently digitally connect with others
Communicate	Being able to safely, efficiently and confidently use apps and information technology to communicate ideas
Collect	Being able to safely, efficiently and confidently find, evaluate, store, sort and use appropriate data

To meet the aim of delivering this comprehensive set of substantive and disciplinary concepts, we use units from Teach Computing (National Centre for Computing Education - NCCE). The resources and foci may be adapted or changed to suit the needs of each cohort as well as match the available software and hardware.

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Pre Scheme A	Vocabulary
• Remember rules without needing an adult to remind them. • Match their developing physical skills to tasks and activities in the setting. • Explore how things work. • Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: - sensible amounts of 'screen time'. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly. • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • To be able to follow a simple algorithm by responding to oral instructions. (programming) • To begin to make my own simple algorithms by sequencing actions. (now, next, then) • To know how to play on a touch screen game and use computers/keyboards/mouse in role play • To be able to input more than one command into a programmable toy or simple app • To be able input a sequence of commands into a programmable toy or simple app	On Off Backwards Forward Instruction Buttons Collect Command Computer Count Keyboard Keys Monitor Mouse Move Phone Camera Remote Choices Create Internet Information Safe Share Technology Website

Code	Connect	Communicate	Collect	Digital Literacy
I can push a button to make a programmable toy move. I can find a power button on a toy and know I need to switch it on to make it work.	I can find and start a favourite app on a digital device.	I can select letters on a keyboard. I am learning where the spacebar is	I can sort a group of objects using two given criteria eg: red or blue	I know who my safe adults are.

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		Computing				
		Scheme A	Scheme B	Scheme C	Scheme D	Year 11 AQA Unit Awards
Term 1	Pillar from the National Curriculum	Information Technology Digital Literacy	Information Technology	Information Technology, Computer Science	Information Technology	Information Technology, Digital literacy
	Skill	Digital Drawing Connect Communicate	Animation (stop-frame paper) Connect Communicate Code	Animation (drawn) Connect Communicate Code	Tools for drawing/Animation (vectors) Connect Collect	Animation Connect Communicate Code
	Knowledge	To be able to create a piece of digital art. -To describe what different tools do -To use the shape tool and the line tools -To make careful choices when painting a digital picture -To explain why I chose the tools I used -To compare painting a picture on a computer and on paper	To be able to create a 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 be able to add	To be able to create a drawn animation -To understand what an animation is. -To create a scene for an animation. -To understand that animations can be created using digital tools. -To create an animated scene. -To storyboard and create a short animation	To explore how images are made from shapes and lines -To understand that digital tools can be used to create images. -To understand that vector images are made up of shapes and lines. -To use digital tools to improve detail in images. -To understand that vector images are constructed of layers.	Pre: 119535 INTRODUCTION TO ANIMATION Entry: 120263 STOP MOTION ANIMATION Level: 118165 DIGITAL CREATIVITY: ANIMATION AND MUSIC

			other media to my animation.			
Careers		**Illustrating, artist, author**	**Animators, illustrators, artists, authors**	**Animators, illustrators, artists, authors**	**Animators, illustrators, artists, social media roles**	**Graphic design, artists, editors.**
Term 2	Pillar from the National Curriculum	**Computer Science** **Information Technology**	**Computer Science** **Information Technology** (Scratch Jr)	**Computer Science** **Information Technology** (Scratch)	**Computer Science** **Information Technology** (Logo)	**Computer Science** **Information Technology** (Scratch)
	Skill	Programming **Code** **Connect** **Communicate**	Programming **Code** **Connect** **Communicate**	Programming **Code** **Connect** **Communicate**	Programming **Code** **Connect** **Communicate**	Programming **Code** **Connect** **Communicate**
	Knowledge	To be able to programme a physical and virtual toy. -To learn what an algorithm is. -To be able to give instructions. -To be able to plan a simple algorithm (physical) -To be able to plan a simple algorithm (virtuall) -To be able to produce a clear set	To create a simple game -To identify what coding blocks are. -To know what a repeat loop is. -To be able to turn code into an algorithm. -To be able to create an algorithm and program to solve a problem. -To be able to create a game in Scratch Jr.	To be able to sequence a musical instrument -To explore a new programming environment -To identify that commands have an outcome -To explain that a program has a start -To recognise that a sequence of commands can have an order -To change the	To be able to create a sequence of patterns -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 task	Pre: 87249 USING SCRATCH (UNIT 1) Entry: 118666 INTRODUCTION TO SCRATCH Level: 119195 USING VARIABLES IN SCRATCH

		of instructions.	-To create my own game in Scratch Jr.	appearance of my project -To create a project from a task description	into small steps -To create a program that uses count-controlled loops to produce a given outcome	
Careers		**Programming, robots, delivery/postal worker - directions**	**Programmers, game designers, robotics, animators, illustrators.**	**Programmers, game designers, robotics, animators, illustrators.**	**Engineering, AI, robotics, games design.**	**Accounting, Businesses (stock take, profit/loss) Data analyst**
Term 3	Pillar from the National Curriculum	Information Technology Digital Literacy Computer Science	Information Technology Digital Literacy	Information Technology Digital Literacy	Information Technology Digital Literacy	Information Technology Digital Literacy
	Skill	Presentations: Creating Sound Connect Communicate Code	Presentations: Digital Photography Connect Communicate	Presentations: Sequencing Sound (Podcasts) Connect Communicate	Presentations: Manipulating/Sequencing audio and visual (Video) Connect Communicate Code	Presentations: Sequencing Sound Connect Communicate
	Knowledge	To create a piece of digital music - To say how music can make us feel -To identify that there are patterns in music -To experiment with	To capture and improve a digital photograph -To use a digital device to take a photograph -To make choices when taking a	To create a podcast -To understand that technology can be used to control sound. -To understand that sound can be stored digitally.	To create a video -To use digital tools to record sound. -To use digital tools to record video. -To sequence and manipulate audio. -To sequence and	Pre: 120848 BASIC KEYBOARD TYPING SKILLS Entry: 121455 USING MICROSOFT

		sound using a computer -To use a computer to create a musical pattern -To create music for a purpose -To review and refine our computer work	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	-To understand what a podcast is. -To use digital tools to record and edit a podcast. -To combine audio sound and effects. -To reflect on work and make improvements.	manipulate video -To evaluate and improve final project	WORD (UNIT 1) Level:121154 DIGITAL SKILLS: COMMUNICATING
Careers		**Musicians, sound editors, music producer**	**Photographers, social media, journalist**	**Podcasting, vlogging, social media, producers**	**Podcasting, vlogging, social media, producers, editors, content creators**	**Business - communication.**
Term 4	Pillar from the National Curriculum	Information Technology Digital Literacy	Information Technology, Digital literacy	Information Technology, Digital literacy	Information Technology Digital Literacy	
	Skill	Technology Around Us Connect Communicate	Information Technology Around Us Connect Communicate	Connecting Computers Connect Communicate	Presentations: Sequencing Sound Connect Communicate	
	Knowledge	To develop my understanding of using technology in everyday life. -To identify technology	To develop my understanding of what Information Technology is. -To recognise the uses and features of	To develop my understanding of digital devices and network infrastructure. -To explain how	Pre: 119738 MUSIC: CHARANGA HIP HOP PROJECT WITH ASSISTANCE Entry: 118910 INTRODUCTION TO PODCASTING	

		-To identify a computer and its main parts -To use a keyboard to type on a computer -To use the keyboard to edit text -To create rules for using technology	information technology -To identify the uses of information technology in the school -To identify information technology beyond school -To explain how information technology helps us -To explain how to use information technology safely -To recognise that choices are made when using information technology	digital devices function -To identify input and output devices -To recognise how digital devices can change the way that 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	Level:115985 CREATIVITY AND IMAGINATION THROUGH COMPOSING: FILM MUSIC	
Careers		**Technician**	**Technician**	**Technician**		
Term 5	Pillar from the National Curriculum	Information Technology Digital Literacy	Computer Science Information Technology (Scratch Jr)	Computer Science Information Technology (Scratch i4)	Computer Science Information Technology	Information Technology, Digital literacy
	Skill	Digital Writing Connect Communicate	Programming Connect Communicate Code	Programming Connect Communicate Code	Programming Connect Communicate Code	Presentations: Sequencing Sound Connect Communicate

	Knowledge	To create and manipulate text -To use a computer to write -To add and remove text on a computer -To identify that the look of text can be changed on a computer -To make careful choices when changing text -To explain why I used the tools that I chose -To compare typing on a computer to writing on paper	To be able to create an animated quiz. -To combine physical Scratch Jr blocks to direct each other to move to obstacles in the story. -To combine motion blocks to make a sprite move. -To program a sprite to move to objects on screen in a specific sequence -To understand that one sprite can be programmed to trigger action for another -To storyboard and create a short animation.	To be able to use events and actions in programs -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	To be able to create a program to help people become active -To know and understand what variables are. -To write algorithms that use variables. -To explain how variables are used in programs. -To debug programs containing variables. -To be able to program a BBC micro:bit using variables. -To predict how variables will be used in programs. -To debug programs involving random number variables.	Pre: 119738 MUSIC: CHARANGA HIP HOP PROJECT WITH ASSISTANCE Entry: 118910 INTRODUCTION TO PODCASTING Level:115985 CREATIVITY AND IMAGINATION THROUGH COMPOSING: FILM MUSIC
Careers		**Programming, robots, game design.**	**Programmers, game designers, robotics, animators, illustrators.**	**Programmers, game designers, robotics, animators, illustrators**	**Cryptographers, security architects, Information security analysis.**	
Term 6	Pillar from the National Curriculum	Information Technology, Digital literacy	Information Technology, Digital literacy	Information Technology, Digital literacy	Information Technology, Digital literacy	
	Skill	Data	Data	Data	Data	

		Communicate Collect	Communicate Collect	Communicate Collect	Communicate Collect	
	Knowledge	To be able to group data -To be able to label objects -To identify that objects can be counted -To describe objects in different ways -To count objects with the same features - To answer questions about groups of objects.	To be able to use and create Pictograms -To recognise that we can count and compare objects using tally charts -To recognise that objects can be represented by pictures -To create a pictogram -To select objects by attribute and make comparisons -To explain that we can present information using a computer.	To be able to use and create a Branching Database -To create questions with yes/no answers -To identify the attributes needed to collect data about an object. -To create a branching database -To plan the structure of a branching database	To be able to use and create a Flat-file Database -To use a form to record information -To compare paper and computer-based databases. -To outline how you can answer questions by grouping and then sorting data -To explain that tools can be used to select specific data. -To use a real-world database to answer questions	Not applicable
Careers		**Data analyst.**	**Data analyst.**	**Data analyst.Database manager**	**Data analyst. Database manager Data modeller**	