Computing at Castlefields Primary School

Statement of intent:

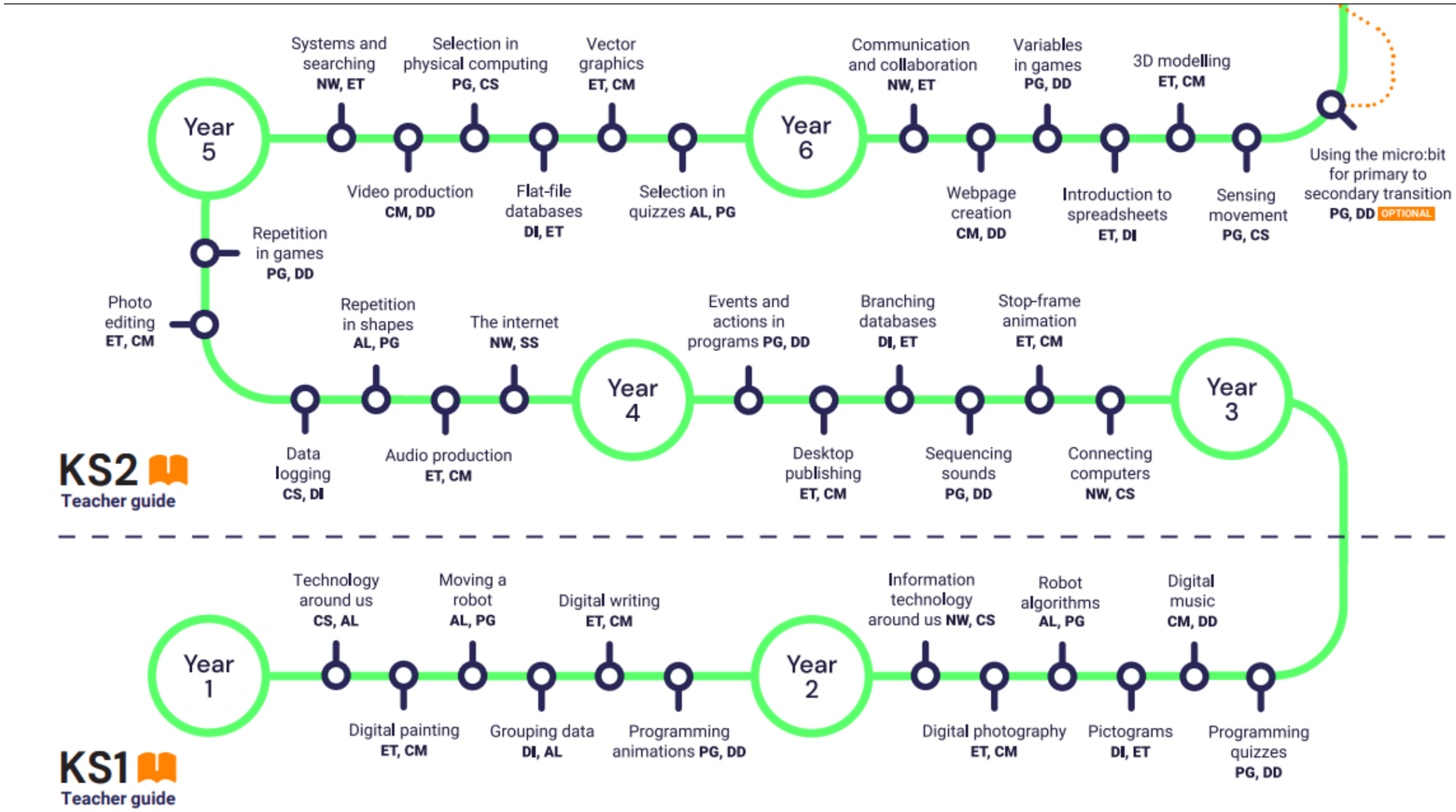
At Castlefields, we aim for our curriculum to be fully inclusive, meeting the learning needs of all our children. It is our intention that computing at Castlefields prepares our children to become active participants in a digital and technological world. It is our aim to provide children with the skills of how digital systems work and how to create a range of systems in preparation for secondary school and future life. At Castlefields, we aim to equip children with vocabulary to describe a range of computing situations. We aim to embed the understanding of computing and to use technology across all subjects.

Additionally, it is our intent to demonstrate to children how to safely use the internet and the importance of reporting internet concerns. We aim to highlight how brilliant technology can be when it is used correctly and the opportunities it presents for future learning, enjoyment and career choices.

Curriculum:

At Castlefields, we follow the 'Teach Computing Curriculum', developed by the National Centre for Computing Education (NCCE). This curriculum is structured to ensure a progression of knowledge and skills, providing teachers with detailed lesson plans, slides, activity sheets, homework, and assessments, all accessible and designed for adaptability to meet the needs of our children and the computing resources we have available to us. This curriculum is built around a progressive framework, where computing content is organised to develop concepts across year groups, ensuring that each stage builds upon prior learning. Our computing lessons reflect our PSHE curriculum and our 6 character values at Castlefields Primary School:

For a visual overview, you might find this introductory video and concept map helpful:



National Centre for Computing Education
Funded by Department for Education

Explore resources: teachcomputing.org/curriculum

Computing Long Term Plan

The Castlefields Primary School Long Term Plan for computing outlines a structured approach to teaching history from Year 1 to Year 6. Each year group covers online safety at the beginning of the autumn term formally and is recovered at the start of each topic as themes arise, as well as through our PSHE curriculum. Computing sessions are taught in a cross-curricular manner where possible, to give context to each unit and to enrich our curriculum further. All classes have access to either a bank of 30 laptops (KS2) or a bank of IPADs (KS1) to support computing sessions, as well as a range of hardware and software to support the teaching and learning of computing.

Each year group covers the 6 core topics (+online safety) through the year: computing systems and networks; creating media; programming A; programming B; data and information and creating media.

Year group	Online safety	Computing Systems and Networks	Creating Media	Programming A	Data and Information	Creating Media	Programming B
1	E-safety	Technology around us (1.1)	Digital painting (1.2)	Moving a robot (1.3)	Grouping data (1.4)	Digital writing (1.5)	Programming animations (1.6)
2	E-safety	Information technology around us (2.1)	Digital photography (2.2)	Robot algorithms (2.3)	Pictograms (2.4)	Digital music (2.5)	Programming quizzes (2.6)
3	E-safety	Connecting computers (3.1)	Stop-frame animation (3.2)	Sequencing sounds (3.3)	Branching databases (3.4)	Desktop publishing (3.5)	Events and actions in programs (3.6)
4	E-safety	The Internet (4.1)	Audio production (4.2)	Repetition in shapes (4.3)	Data logging (4.4)	Photo editing (4.5)	Repetition in games (4.6)
5	E-safety	Systems and searching (5.1)	Video production (5.2)	Selection in physical computing (5.3)	Flat-file databases (5.4)	Introduction to vector graphics (5.5)	Selection in quizzes (5.6)
6	E-safety	Communication and collaboration (6.1)	Web page creation (6.2)	Variables in games (6.3)	Spreadsheets (6.4)	3D modelling (6.5)	Sensing movement (6.6)

Computing Plans

All medium plans, lesson resources and progression documents from Teach Computing can be found here:

KS1: https://teachcomputing.org/curriculum/key-stage-1

KS2: https://teachcomputing.org/curriculum/key-stage-2

Computing Medium Term Planning Year 1

Computing systems and networks – Technology around us			Creating media – Digital painting			Programming A – Moving a robot			Data and information – Grouping data			Creating media – Digital writing			Programming B - Programming animations		
Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3
To identify technology	To identify a computer and its main parts	To use a mouse in different ways	To describe what different freehand tools do	To use the shape tool and the line tools	To make careful choices when painting a digital picture	To explain what a given command will do	To act out a given word	To combine forwards and backwards commands to make a sequence	To label objects	To identify that objects can be counted	To describe objects in different ways	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 choose a command for a given purpose	To show that a series of commands can be joined together	To identify the effect of changing a value
4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
To use a keyboard to type on a computer	To use the keyboard to edit text	To create rules for using technology responsibly	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	To combine four direction commands to make sequences	To plan a simple program	To find more than one solution to a problem	To count objects with the same properties	To compare groups of objects	To answer questions about groups of objects	To make careful choices when changing text	To explain why I used the tools that I chose	-o compare typing on a computer to writing on paper	To explain that each sprite has its own instructions	To design the parts of a project	To use my algorithm to create a program

Computing Medium Term Planning Year 2

Computing systems and networks – IT around us			Creating media – Digital photography			Programming A – Robot algorithms			Data and information – Pictograms			Creating media - Digital music			Programming B - Programming quizzes		
Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3
To recognise the uses and features of information technology	To identify the uses of information technology in the school	To identify information technology beyond school	To use a digital device to take a photograph	To make choices when taking a photograph	To describe what makes a good photograph	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	To recognise that we can count and compare objects using tally charts	To recognise that objects can be represented as pictures	To create a pictogram	To say how music can make us feel	To identify that there are patterns in music	To experiment with sound using a computer	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
4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
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	To decide how photographs can be improved	To use tools to change an image	To recognise that photos can be changed	To explain that programming projects can have code and artwork	To design an algorithm	To create and debug a program that I have written	To select objects by attribute and make comparisons	To recognise that people can be described by attributes	To explain that we can present information 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	To change a given design	To create a program using my own design	To decide how my project can be improved

Computing Medium Term Planning Year 3

Computing systems and networks – Connecting computers			Creating media - Stop-frame animation			Programming A - Sequencing sounds			Data and information – Branching databases			Creating media – Desktop publishing			Programming B - Events and actions in programs		
Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3
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 that animation is a sequence of drawings or photographs	To relate animated movement with a sequence of images	To plan an animation	To explore a new programming environment	To identify that commands have an outcome	To explain that a program has a start	To create questions with yes/no answers	To identify the attributes needed to collect data about an object	To create a branching database	To recognise how text and images convey information	To recognise that text and layout can be edited	To choose appropriate page settings	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
4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
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	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	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	To explain why it is helpful for a database to be well structured	To plan the structure of a branching database	To independently create an identification tool	To add content to a desktop publishing publication	To consider how different layouts can suit different purposes	To consider the benefits of desktop publishing	To develop my program by adding features	To identify and fix bugs in a program	To design and create a maze-based challenge

Computing Medium Term Planning Year 4

Computing systems and networks – The Internet			Creating media - Audio production			Programming A – Repetition in shapes			Data and information – Data logging			Creating media – Photo editing			Programming B – Repetition in games		
Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3
To describe how networks physically connect to other networks	To recognise how networked devices make up the internet	To outline how websites can be shared via the World Wide Web (WWW)	To identify that sound can be recorded	To explain that audio recordings can be edited	To recognise the different parts of creating a podcast project	To identify that accuracy in programming is important	To create a program in a text-based language	To explain what 'repeat' means	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 explain that the composition of digital images can be changed	To explain that colours can be changed in digital images	To explain how cloning can be used in photo editing	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 that includes two or more loops which run at the same time
4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
To describe how content can be added and accessed on the World Wide Web (WWW)	To recognise how the content of the WWW is created by people	To evaluate the consequences of unreliable content	To apply audio editing skills independently	To combine audio to enhance my podcast project	To evaluate the effective use of audio	To modify a count-controlled loop to produce a given outcome	To decompose a task into small steps	To create a program that uses count-controlled loops to produce a given outcome	To recognise how a computer can help us analyse data	To identify the data needed to answer questions	To use data from sensors to answer questions	To explain that images can be combined	To combine images for a purpose	To evaluate how changes can improve an image	To modify an infinite loop in a given program	To design a project that includes repetition	To create a project that includes repetition

Computing Medium Term Planning Year 5

Computing systems and networks - Systems and searching			Creating media - Video production			Programming A – Selection in physical computing			Data and information – Flat-file databases			Creating media – Introduction to vector graphics			Programming B – Selection in quizzes		
Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3
To explain that computers can be connected together to form systems	To recognise the role of computer systems in our lives	To experiment with search engines	To explain what makes a video effective	To identify digital devices that can record video	To capture video using a range of techniques	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	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 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 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
4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
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 create a storyboard	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	To explain 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 program that controls a physical computing project	To explain that tools can be used to select specific data	To explain that computer programs can be used to compare data visually	To use a real-world database to answer questions	To recognise that vector drawings consist of layers	To group objects to make them easier to work with	To apply what I have learned about vector drawings	To design a program which uses selection	To create a program which uses selection	To evaluate my program

Computing Medium Term Planning Year 6

Computing systems and networks - Communication and collaboration			Creating media – Web page creation			Programming A – Variables in games			Data and information – Spreadsheets			Creating media – 3D Modelling			Programming B - Sensing movement		
Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3	Week 1	2	3
To explain the importance of internet addresses	To recognise how data is transferred across the internet	To explain how sharing information online can help people to work together	To review an existing website and consider its structure	To plan the features of a web page	To consider the ownership and use of images (copyright)	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 create a data set in a spreadsheet	To build a data set in a spreadsheet	To explain that formulas can be used to produce calculated data	To recognise that you can work in three dimensions on a computer	To identify that digital 3D objects can be modified	To recognise that objects can be combined in a 3D model	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
4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
To evaluate different ways of working together online	To recognise how we communicate using technology	To evaluate different methods of online communication	To recognise the need to preview pages	To outline the need for a navigation path	To recognise the implications of linking to content owned by other people	To design a project that builds on a given example	To use my design to create a project	To evaluate my project	To apply formulas to data	To create a spreadsheet to plan an event	To choose suitable ways to present data	To create a 3D model for a given purpose	To plan my own 3D model	To create my own digital 3D model	To use a 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