Birches First School
Believe, Grow, Succeed
to be the best 'me' I can be

Codsall Multi-Academy Trust

Computing Curriculum Outline

Area of Computing:

Computer Science

Information Technology

Digital Literacy

EYFS

Personal, Social and Emotional Development
3-4: Remember rules without needing an adult to remind them.
R: Show resilience and perseverance in the face of a challenge.
R: Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.

Physical Development
3-4: Match their developing physical skills to tasks and activities in the setting.
R: Develop their small motor skills so that they can use a range of tools competently, safely and confidently.

Understanding the World
3-4: Explore how things work.

Expressive Arts and Design
R: Explore, use and refine a variety of artistic effects to express their ideas and feelings.

Managing Self
R: Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.
R: Explain the reasons for rules, know right from wrong and try to behave accordingly.

Creating with Materials
R: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

EYFS	Autumn		Spring		Summer	
Nursery	**I Wonder What Makes Me Special**	**Special Times**	**Once Upon a Time**	**People Who Help Us**	**All Creatures Great and Small**	**Out and About**
	Become familiar with different types of technology in role play situations. For example: holding a camera to take a photograph, using a keyboard/ computer screen etc.	Explore technological toys and begin to understand how things work.	Begin to operate bee bots around a story map using a simple set of instructions.	Learn about online safety through the story of 'Smartie the Penguin'. Remember simple rules about staying safe online.	Use iPads to make digital art and understand how to use different tools on the iPad for a purpose.	Manipulate the pen on the IWB to complete Ten Town games and use Tux Paint using different tools for a purpose.
Reception	**Me and My School**	**Celebrations**	**Traditional Tales**	**'Out of this World'**	**Come Outside**	**The World Around Us**
	Further explore tools for a purpose on the interactive whiteboard by moving items and drawing on the screen.	Develop confidence when using an iPad by taking photos safely and using QR codes to achieve an outcome.	Program bee bots to follow a route around a map showing independence, resilience and perseverance when faced with a challenge.	Understand that sensible amounts of screentime is important to support overall health and wellbeing. Understand Internet Safety rules and explain reasons for these rules.	Begin to understand My Mini Mash and navigate around a website safely.	Consider how technology is used in the wider world and its role in society.

Key Stage 1 – Pupils should be taught to:

- **1-C1:** Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.
- **1-C2:** Create and debug simple programs
- **1-C3:** Use logical reasoning to predict the behaviour of simple programs.
- **1-C4:** Use technology purposefully to create, organise, store, manipulate and retrieve digital content
- **1-C5**: Recognise common uses of information technology beyond school
- **1-C6:** Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

KS1	Autumn			Spring			Summer		
Year 1	**Online Safety and Exploring Purple Mash (4)** Children will begin to develop an understanding with Purple Mash to find resources and save their work. They will become familiar with icons and explore a range of tools. Children will learn how to log in/ out safely, open, save and print their work. 1-C6	**Grouping and Sorting (2)** Children will develop an understanding of the concepts of 'grouping' and 'sorting' using a range of criteria. 1-C1	**Pictograms (3)** Children will understand that data can be represented in a picture format and use a pictogram to record their own data. 1-C4	**Lego Builders (3)** Children will follow and create simple instructions on the computer, considering how the order of instructions affect the result. 1-C1	**Maze Explorers (3)** After developing an understanding of the functionality of the direction keys, children will create and debug a set of instructions. 1-C1, 1-C2, 1-C3	**Animated Story Books (5)** Children will be introduced to e-books. They will learn how to add animation, sound, voice recordings, sound and backgrounds to a story. 1-C4	**Coding (6)** Children will be able to predict what might happen when instructions are followed. They will be introduced to code to make a computer program using objects, actions and events. 1-C1, 1-C2, 1-C3, 1-C4	**Spreadsheets (3)** Children will learn what a spreadsheet program looks like. They will enter data, add clipart to cells and use the 'count tool'. 1-C4	**Technology Outside School (2)** Children will understand how technology is used in the wider world and the impact it has had on our lives. 1-C5
Year 2	**Online Safety (3)** Children will refine searches using the Search tool and are introduced to email as a communication tool. 1-C6	**Coding (6)** Children will develop on their coding skills from Year 1 to create their own program using a given design. They will understand collision detection and design an algorithm that follows a timed sequence. 1-C1, 1-C2, 1-C3	**Spreadsheets (4)** Children will use a spreadsheet for money calculations, collect data and produce a graph. 1-C4	**Questioning (5)** Children will consider alternative data handling tools to pictograms (Y1). They will construct a binary tree to identify items and answer questions. 1-C4		**Effective Searching (3)** Children will gain a better understanding of searching on the internet and using search engines effectively. 1-C4, 1-C5	**Creating Pictures (5)** Throughout the unit, children will explore different artists and techniques and recreate their own work in their style. 1-C4	**Making Music (3)** Children will understand how to make music digitally by combining sounds. They will consider how music can be used to express feelings and create their own pieces of music to depict feelings. 1-C4	**Presenting Ideas (4)** Children will explore a range of methods to present information including: story, quiz, fact files and a presentation. 1-C4

Key Stage 2- Pupils should be taught to:

- **2-C1:** Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- **2**-C2: Use sequence, selection and repetition in programs; work with variables and various forms of input and output.
- **2**-C3: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- **2**-C4: Understand computer networks, including the Internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration.
- **2**-C5: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
- **2**-C6: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- **2**-C7: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

KS2	Autumn			Spring		Summer					
Year 3	**Online Safety (3)** Children will understand the importance of having a safe password. They will explore how the internet can be used for effective communication as well as become familiar with age restrictions on digital media and devices. 2-C7	**Coding (6)** Children will understand how flowcharts are used in computer programming. They will create and design their own interactive scene using timers and the repeat command. 2-C1, 2-C2, 2-C3	**Spreadsheets (3)** Children will build on their knowledge of spreadsheets from Y2 and learn how to use more advanced tools such as comparative symbols and cell references. 2-C6	**Touch Typing (4)** Children will be introduced to typing terminology as well as becoming familiar with the home, top and bottom row keys. They will become competent with typing, practising typing with their left and right hand. 2-C4, 2-C6	**Email (6)** Children will consider different methods of communication including emails. They will learn how to open and respond to an email safely and add an attachment. 2-C6, 2-C7	**Branching Databases (4)** Children will create their own branching database and sort objects using 'yes' and 'no' questions. 2-C6	**Simulations (3)** Children will explore and become familiar with simulations as well as analyse and evaluate a simulation. 2-C6	**Graphing (3)** Children will become familiar with vocabulary relating to graphs. They will learn how to enter data into a graph to help answer questions. 2-C6			**Presenting (5)** Children will become familiar with PowerPoint. They will create a page, add media, animations and timings within their own PowerPoint. 2-C6, 2-C7
Year 4	**Online Safety (4)** Children will learn to understand how to protect themselves from online identify theft by learning about digital footprints. They will consider risks associated with apps and software as well as consider the influences of technology on health and the environment. 2-C1, 2-C3, 2-C4, 2-C5, 2-C6	**Coding (6)** Children will continue to develop their understanding of Coding using features such as IF statements, co-ordinates, repeat commands, IF/ ELSE statements. 2-C2. 2-C3, 2-C4, 2-C5, 2-C6	**Spreadsheets (6)** Children will continue to build on their knowledge of spreadsheets using formulas to automatically make a calculation in a cell. They will learn how to format cells, use the formula wizard and combine tools. 2-C2, 2-C3, 2-C4, 2-C5, 2-C6	**Writing for Different Purposes (5)** Children will explore writing for different purposes, altering font size and style. They will produce their own newspaper report as well as write for a community campaign. 2-C2, 2-C3, 2-C4, 2-C5, 2-C6	**Logo (4)** Children will develop vocabulary relating to Logo as well as input simple instructions. They will create letter shapes, use the repeat function and use/ build procedures. 2-C2, 2-C3, 2-C4, 2-C5, 2-C6	**Animation (3)** Children will learn how animations are created on the computer before being introduced to 'stop motion' animation. 2-C2, 2-C3, 2-C4, 2-C5, 2-C6	**Effective Searching (3)** Children will learn to search effectively by assessing whether an information source is true and reliable. 2-C1, 2-C4, 2-C5, 2-C6	**Hardware Investigators (2)** Children will be introduced to the different parts that make up a computer including the difference between hardware/ software. 2-C4, 2-C5, 2-C6	**Making Music (4)** Children will electronically compose a piece of music using a melodic phrase. 2-C3, 2-C4, 2-C5, 2-C6	**Artificial Intelligence (4)** Children will learn the concept of artificial intelligence, focuses on how it is used in our lives, looks at the future of AI and finally, considers the role of Artificial Intelligence in creativity. 2-C6