CURRICULUM

Computing

Scheme of Work

Intent

At Southville Primary School, we aspire to be effective and confident users and developers of technology. Our computing curriculum teaches our children to be critical thinkers, problem solvers, imaginative and creative. We equip the children with the skills and knowledge to design, write and debug programs, use search technologies effectively, but more importantly to use technology safely, respectfully and responsibly. We prepare our children for the digital world around them and to be confident as the next generation of computer users. We do this by:

- Providing the opportunities to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- Ensuring repeated practical experience to analyse problems in computational terms
- Ensuring that our children can communicate ideas well by utilising appliances and devices throughout all areas of the curriculum.
- Developing children's understanding of online safety, digital wellbeing and responsible use of new technologies, software and social media to ensure they act safely, respectfully and responsibly in digital spaces.

What We Teach

We ensure that pupils are equipped with the skills, knowledge, and confidence needed to thrive in an increasingly digital world. Children learn about:

- **Programming and Coding**: Pupils learn to create algorithms, debug programs, and use visual coding tools to build their understanding of computer science.
- **Data Handling**: Students are introduced to spreadsheets and databases, learning how to collect, analyze, and present data effectively.
- **Digital Literacy**: Lessons include online safety, digital communication skills, and responsible use of technology.
- **Creative Applications**: Pupils design multimedia projects, such as animations, digital art, and presentations, encouraging innovation and creativity

Implementation: Purple Mash

The school's Computing curriculum is delivered through the **Purple Mash Computing Scheme of Work**, a comprehensive program that aligns fully with the National Curriculum for Computing by ensuring pupils:

- Develop a deep understanding of computer science principles, such as algorithms and programming.
- Analyse, evaluate, and create digital content, fostering critical thinking and digital literacy.
- Are equipped with practical and creative skills to succeed in an increasingly digital world.

What does the scheme offer and how is it taught?

Curriculum Alignment and Sequencing
- Fully mapped to National Curriculum for Computing, ensuring comprehensive coverage.
- Skills are developed progressively, starting with foundational knowledge in KS1 and building systematically through to advanced concepts in KS2.

Engaging and Interactive Learning
- Lessons are structured with detailed plans and slideshows, and clear success criteria that foster active participation and collaboration.
- Interactive elements, animations, and purposeful questioning engage pupils and deepen their understanding.

Integrated Resources for Teachers and Pupils
- Editable lesson slideshows with embedded notes allow teachers to adapt materials for their classes.
- Knowledge organizers, vocabulary PDFs, and example projects provide accessible tools for introducing and reinforcing key concepts.
- Teacher support videos demystify complex topics, such as coding and spreadsheets, ensuring confident delivery.

Hands-On Practical Skills
- Pupils use the Purple Mash cloud platform to create, save, and share digital work seamlessly.
- The **2Dos functionality** streamlines resource access and task management, enhancing efficiency for both teachers and pupils.

Flexibility and Adaptability
- Units can be adapted or re-sequenced to suit individual school needs, ensuring alignment with curriculum intent.
- Mixed-age overviews support schools with multi-year-group classes, maintaining curriculum continuity.

Comprehensive Assessment Tools
- Built-in formative and summative assessments, including progression statements and data dashboards, allow precise tracking of pupil progress.
- Self-assessment and teacher evaluation tools enable targeted interventions and skill development.

Teacher Empowerment and Leadership Support
- Extensive resources empower teachers to deliver lessons confidently and effectively.
- A **Computing Subject Leader Toolkit** includes tools for evaluating curriculum implementation and driving improvements across the school.

Digital Safety and Responsibility
- The curriculum emphasizes online safety, ensuring pupils develop the knowledge and skills needed to navigate digital spaces responsibly.

Additional Resources

While the ICT curriculum primarily follows the Purple Mash scheme of work, it is enhanced with carefully selected external resources to enrich learning.

For instance, the Making Music unit incorporates **Chrome Music Lab**, while the Online Safety unit uses **CEOP Education** materials tailored for different age groups (4–5 and 8–10). The Artificial Intelligence unit benefits from supplementary tools like **Quick, Draw!.** For practical skills in Presenting, Word Processing, and Spreadsheets, children access **Google Docs, Slides,** and **Sheets** alongside the Purple Mash plans. Coding lessons are further supported by hands-on activities with **micro:bit** devices and the **MakeCode Micro:bit platform**.

This plan has been crafted to deliver the most effective and engaging learning experiences.

Content Overview

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1	Logging in + Online Safety	Logging in + Online Safety	Online safety + Effective Searching	Online safety + Effective Searching	Online safety + Effective Searching	Online safety + Effective Searching
Term 2	Logging in + Intro to Purple Mash	Logging in + Intro to Purple Mash	Touch Typing + Email	Touch Typing + Email	Touch Typing + Blogging	Touch Typing + Blogging
Term 3	Logging in + Fine Motor	Creating Pictures	Spreadsheet + Making Music	AI + Logo	AI + Logo	AI + Text Adventures
Term 4	Maze	Creating Spreadsheets	Presenting (Google Slides)	Presenting (Google Slides)	Word processing (Google Docs)	Spreadsheet (Google Sheets)
Term 5	Following Instructions	Making Music	Animation	Animation	3D Modelling	3D Modelling
Term 6	Creating Pictures	Coding	Coding + Using External Devices (micro:bits)	Coding + Using External Devices (micro:bits)	Coding + Using External Devices (micro:bits)	Coding + Using External Devices (micro:bits)

EYFS	
Linked ELG	As part of the EYFS Reforms (September 2021), Technology was removed from the Understanding the World area of learning within the EYFS Framework. Consequently, Technology was also removed as an Early Learning Goal. Despite this, technology and computing continue to be fundamental to 21st Century living, learning and working. Due regard should be given to the skills children will need to develop in EYFS to enable them to access the computing curriculum in KS1.
Examples of Computing in an Enabling Environment	**Role Play** ➢ Using technology within play, e.g. phone, computer, keyboard, till, camera, mouse **Investigation Station** ➢ Using microscopes ➢ Taking photographs ➢ Researching using a tablet to find information ➢ Sorting items by classified groups **Carpet** ➢ Using tablets ➢ Using programmable toys, e.g. beebot. ➢ Operating and exploring own electronic journal ➢ Playing online games on interactive whiteboard/screen **Outdoors** ➢ Using a camera/tablet to take photographs ➢ Using tablets to record videos and watch then back ➢ Researching on the internet to find information

Progression Overview

	Programming and Algorithms	Using Technology	Digital Literacy and Online Safety	Data and Information
Reception	Explore cause and effect using simple digital tools.	Use digital tools to explore ideas and solve problems.	Recognise when they are using technology.	Sort objects by simple categories.
Year 1	Understand that an algorithm is a sequence of instructions that a computer follows	Use technology purposefully to create, organise, and retrieve digital content.	Use technology safely and respectfully, keeping personal information private.	Recognise common uses of information technology beyond school.
Year 2	Create and debug simple programs, using logical reasoning to predict their behaviour.	Use technology purposefully to manipulate and store digital content.	Recognise where to go for help with concerns about online content or contact.	Recognise and explore how information technology is used in everyday life.
Year 3	Design and debug programs with a specific goal, understanding sequence.	Select and use a variety of software for specific purposes.	Understand the importance of online safety and how to report concerns.	Create and interpret branching databases and simple graphs.
Year 4	Use repetition in programs and debug errors effectively.	Understand how to use networks, including the internet, to share and collaborate.	Recognise a range of online risks and develop strategies to stay safe.	Use software to organise, store, and retrieve data effectively.
Year 5	Incorporate selection (if statements) to control outcomes in programs.	Use search technologies effectively and understand how results are ranked.	Understand personal responsibility online and how to manage information safely.	Analyse data to identify trends and patterns, presenting findings in various formats.
Year 6	Design algorithms using variables, inputs, and outputs, and solve errors through testing.	Understand computer networks, including the internet, and how they can provide services.	Demonstrate responsible use of technology and know how to protect personal information.	Collect, analyse, and evaluate data using appropriate software and tools.

National Curriculum KS1 and KS2

The national curriculum for computing aims to ensure that all pupils: can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems are responsible, competent, confident and creative users of information and communication technology.

KS1	KS2
Pupils should be taught to: - understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - create and debug simple programs - use logical reasoning to predict the behaviour of simple programs - use technology purposefully to create, organise, store, manipulate and retrieve digital content - recognise common uses of information technology beyond school - 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.	Pupils should be taught to: - design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - 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 - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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 - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.