



Computing KS 1

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

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

Lessons follow the Teach Computing Curriculum and ensure each unit builds on previous skills and learning. At Dane Ghyll Community Primary School pupils will be taught how 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 by links to home for research activities and phonics skills.
- 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.

Children will cover Online Safety and Computing Rules during Computing sessions but also through PSHE, Kidsafe and Assemblies.

Computing – KS1

Year 1	Year 2
<p><u>Technology around us</u> Children will be:</p> <ul style="list-style-type: none"> • Recognising the term technology • Getting to know the main parts of a desktop or laptop • Developing mouse and keyboard skills • Using a computer responsibly <p><u>Digital painting</u> Children will be:</p> <ul style="list-style-type: none"> • Using a paint program • Choosing appropriate tools in a program to create art • Making comparisons with working non-digitally. <p><u>Moving a robot</u> Children will be:</p> <ul style="list-style-type: none"> • Writing short algorithms and programs for floor robots • Predicting program outcomes 	<p><u>Information technology around us</u> Children will be:</p> <ul style="list-style-type: none"> • Identifying IT and how its responsible use improves our world in school and beyond. • Explaining how to use IT safely <p><u>Digital photography</u> Children will be:</p> <ul style="list-style-type: none"> • Capturing digital photographs for different purposes. • Using tools to change an image <p><u>Robot algorithms</u> Children will be:</p> <ul style="list-style-type: none"> • Creating and debugging programs • Using logical reasoning to make predictions

Grouping data

Children will be:

- Labelling objects
- Sorting and grouping objects by properties
- Comparing groups

Digital writing

Children will be:

- Using a computer to create and format text
- Adding, removing and changing text
- Comparing to writing digitally and non-digitally.

Programming animations

Children will be:

- Using the Scratch Jr program
- Designing and programming the movement of a character

Pictograms

Children will be:

- Collecting data in tally charts
- Creating pictograms

Digital music

Children will be:

- Using a computer as a tool to explore rhythms and melodies
- Creating a musical composition.

Programming quizzes

Children will be:

- Designing algorithms and programs
- Creating a program using a given design.

Key Skills Progression

Over the year, children will develop the following skills:

- Recognising that technology can be used in different ways
- Building knowledge and identifying the parts of a computer
- Showing how to use technology safely
- Using a computer keyboard to type and edit
- Giving and following instructions
- Programming a robot
- Labelling and grouping objects based on properties
- Developing dragging and dropping skills on a device
- Word processing
- Finding and using keys on a keyboard to create digital content
- Making cosmetic changes on digital content
- Programming using blocks in a program.

Over the year, children will develop the following skills:

- Become familiar with the term information technology
- Identifying common features of IT
- Building understanding of using technology safely and responsibly
- Capturing photos
- Manipulating photos for different purposes
- Building understanding of algorithms
- Learning how the order of commands affects outcomes
- Understand how programs work and predict outcomes.
- Enter data on a computer
- Using a computer program to present information
- Use technology to create rhythm and patterns in music
- Understanding that different sequences can have the same outcome
- Choosing a series of words and instructions that can be run as a sequence
- Debugging errors in programs