



Computing Curriculum Overview

Intent

Our computing curriculum is designed to support every pupil in their learning journey. Each lesson is carefully sequenced to build upon the previous one, ensuring continuity and reinforcing understanding. We employ scaffolded activities, offering additional resources like visual prompts to help every pupil reach their learning goals. Exploratory tasks stimulate deeper comprehension, enabling pupils to apply knowledge across contexts and link learning experiences.

The curriculum aligns with the National Centre for Computing Education's taxonomy, covering the full scope from KS1 to A level. It encompasses ten strands: Algorithms, Computer Networks, Computer Systems, Creating Media, Data and Information, Design and Development, Effective Use of Tools, Impact of Technology, Programming, and Safety and Security. These strands provide an organised framework to encapsulate the computing discipline, ensuring comprehensive learning outcomes across phases.

Computing is taught through structured units, with emphasis on following the lesson sequence for coherence. While the unit order within a year group is flexible, 'Programming' units adhere strictly to sequential concepts and skills to build on prior knowledge. Our curriculum fosters knowledge organisation and the effective learning journey of every pupil.

The computing curriculum is based on a learning progression from Year 1 through to Year 6 that fits into an overall progression including secondary school. In order to use this progression with mixed year groups, teachers to break up the content as they see fit, based on the learning graphs for the year groups that they are teaching.

EYFS activities will be designed to meet the Early Learning Goals and will fit alongside the program of study for KS1. For example, an EYFS early learning goal related to 'Understanding the World' is 'use simple software on digital devices.' This goal can be met using the KS1 computing curriculum through activities in the Moving a Robot and Robot Algorithms units.

To support this, a summary of the four key themes is detailed below:

Computer Systems and Networks The Computer Systems and Networks strand is taught once a year, building progressively from one year group to the next, with subject specific knowledge introduced at age-appropriate points.

Data and Information The Data and Information strand is taught once a year, progressing in both skills and software. Key Stage 1 uses simplified age-appropriate software platforms, progressing to more industry focused software in upper Key Stage 2

Programming Primary The Programming stand is taught twice a year, with the same concept revisited and covered in more depth. The following year incorporates the previous skills, whilst progressing onto a new concept.

Creating Media The Creating Media strand hosts a wide range of different media types, and therefore different skills. This can be categorised into four different key areas: text, graphics (the use of pictures and text), photo and video, and audio. The curriculum covers each of these four areas over a phase (KS1, LKS2 and UKS2), rather than in every year group, with links across these areas made where possible.

Digital Literacy

All of the Computing content is mapped to the ten strand taxonomy, which covers the breadth of computing. Within these strands, key elements of digital literacy have been identified, such as effective use of tools, impact of technology and safety and security. These strands are woven throughout the four key themes, with skills and knowledge applied across the curriculum.

Implementation and Curriculum Overview

Downholland Haskayne CE Primary School has mixed age classes. There is an EYFS (including 3+ Nursery)/KS1 class – Acorn, and a KS2 Class – Oak. In Key Stage 1, the similar nature of the units between year 1 and year 2 mean that the same broad topics can be taught each year with the older children doing the more advanced work from the year 2 unit, building on the work they did in Year 1. The curriculum has been designed with 4 year rolling program for Oak class to ensure full, broad and balanced coverage that meets the expectations of the national curriculum.

Acorn Class – KS1

Cycles	Autumn	Spring	Summer
Year 1	<p>Technology Around Us Recognising technology in school and using it responsibly</p>	<p>Digital Painting Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.</p>	<p>Moving A Robot Writing short algorithms and programs for floor robots, and predicting program outcomes.</p>
Year 2	<p>Information Technology Around Us Identifying IT and how its responsible use improves our world in school and beyond.</p>	<p>Digital Photography Capturing and changing digital photographs for different purposes.</p>	<p>Robot Algorithms Creating and debugging programs, and using logical reasoning to make predictions</p>

Oak Class – KS2

Cycles	Autumn	Spring	Summer
Cycle A	<p>Connecting Computers Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks</p> <p>Stop-frame Animation Capturing and editing digital still images to produce a stop frame animation that tells a story</p>	<p>Sequencing Sounds Creating sequences in a block-based programming language to make music.</p> <p>Branching Databases Building and using branching databases to group objects using yes/no questions.</p>	<p>Desktop Publishing Creating documents and modifying text, images and page layouts for a specific purpose</p> <p>Events and Actions in Programs Writing algorithms and programs that use a range of events to trigger sequences of actions.</p>
Cycle B	<p>The Internet Recognising that the internet is a network of networks including the WWW, and why we should evaluate online content.</p> <p>Audio Production Capturing and editing audio to produce a podcast, ensuring that copyright is considered.</p>	<p>Repetition in shapes Using a text-based programming language to explore count-controlled loops when drawing shapes.</p> <p>Data Logging Recognising how and why data is collected over time, before using data loggers to carry out an investigation,</p>	<p>Photo Editing Manipulating digital images, and reflecting on the impact of the changes and whether the required purpose is fulfilled,</p> <p>Repetition in Games Using a block-based programming language to explore count-controlled and infinite loops when creating a game.</p>
Cycle C	<p>Systems and Searching Recognising IT systems in the world and how some can enable searching on the internet.</p> <p>Video Production Planning, capturing, and editing video to produce a short film.</p>	<p>Selection in Physical Computing Exploring conditions and selection using a programmable microcontroller</p> <p>Flat-file Databases Using a database to order data and create charts to answer questions</p>	<p>Introduction to Vector Graphics Creating images in a drawing program by using layers and groups of object</p> <p>Selection in Quizzes Exploring selection in programming to design and code an interactive quiz.</p>
Cycle D	<p>Communication and Collaboration Exploring how data is transferred by working collaboratively online.</p> <p>Webpage Creation Designing and creating webpages, giving consideration to copyright, aesthetics and navigation</p>	<p>Variables in Games Exploring variables when designing and coding a game.</p> <p>Introduction to Spreadsheets Answering questions by using spreadsheets to organise and calculate data.</p>	<p>3D modelling Planning, developing, and evaluation 3D computer models of physical objects.</p> <p>Sensing Movement Designing and coding a project that captures inputs from physical devices.</p>