



## Lawnside Academy Computing Curriculum Overview

### Intent

The National Curriculum is at the core of our Computing Curriculum. Computing is a highly valued subject and has equal status with all other foundation subjects.

We believe that computing skills should be taught as a separate subject. We also believe computing should be taught, developed and reinforced through other subject areas. Our children are growing up in an increasingly technological world. The ability to understand all aspects of computing is an essential life skill in the 21st century. This combined approach allows children the opportunity to practise and refine skills throughout their years at Lawnside. We aim to show computing relevance to our children everyday lives through planned access to all areas of computing, including a range of software, the internet, e-mail and digital cameras. We take the safety of children using the Internet seriously and all computers are monitored in order that only safe sites are accessed.

We believe that high quality computing lessons will inspire children to think innovatively and develop creative procedural understanding. Computing is a subject that provides children with the means of accessing the modern world and to express themselves creatively and practically. We want children to acquire the skills and knowledge of computing in a systematic way so that each child is able to produce results that demonstrate their achievements and be enabled to access the digital world.

### Implementation

Our school curriculum is built upon the National Curriculum and our chosen scheme is Purple Mash. This was selected because it provides a clear progression of all the skills and knowledge that we are required to teach.

Many of our staff are non-specialist and it enables them to access the subject knowledge needed to be highly effective in their teaching of Computing. All staff are supported by the subject leader in developing their knowledge and understanding of the Purple Mash scheme through a planned series of CPD opportunities.

We are confident that the design of Purple Mash provides clear progression as it is a comprehensive suite of online learning tools and content, designed to be used by primary aged children in the classroom and at home.

We endeavour to ensure that Computing is not seen as a stand-alone subject, but is incorporated into many other areas of our curriculum.

## Impact

The impact of our computing curriculum is that when children leave Lawnside, they will have a love of computing.

The impact of our curriculum will also be measured by how effectively it helps our pupils develop into well-rounded individuals who embody our values and carry with them the knowledge and skills in the different computational components; and attitudes which will make them lifelong learners and valuable future citizens.

## Program of study

needed to make the most of Purple Mash.

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
YEAR 1 & 2 – CYCLE A	Unit 1.1 Online Safety & Exploring Purple Mash Weeks – 4 Programs – Various				Unit 2.5 Effective Searching Weeks – 3 Programs – Browser			Unit 1.4 Lego Builders Weeks – 3 Programs – 2DIY			Unit 1.9 Technology outside school Weeks – 2 Programs – Various			Unit 1.2 Grouping & Sorting Weeks – 2 Programs – 2DIY			Unit 2.6 Creating Pictures Weeks – 5 Programs – 2PaintAPicture				Unit 1.8 Spreadsheets Weeks – 3 Programs – 2Calculate			Unit 1.7 Coding Weeks – 6 Programs – 2Code						Unit 2.1 Coding Weeks – 5 Programs – 2Code				
	Unit 1.1 Online Safety & Exploring Purple Mash Weeks – 4 Programs – Various				Unit 1.5 Maze Explorers Weeks – 3 Programs – 2Go			Unit 2.4 Questioning Weeks – 5 Programs – 2Question, 2Investigate					Unit 2.2 Online Safety Weeks – 3 Programs – Various			Unit 1.6 Animated Story Books Weeks – 5 Programs – 2Create A Story				Unit 2.7 Making Music Weeks – 3 Programs – 2Sequence			Unit 2.3 Spreadsheets Weeks – 4 Programs – 2Calculate				Unit 1.3 Pictograms Weeks – 3 Programs – 2Count			Unit 2.8 Presenting Ideas Weeks – 4 Programs – Various				
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
YEAR 1 & 2 – CYCLE B	Unit 1.1 Online Safety & Exploring Purple Mash Weeks – 4 Programs – Various				Unit 1.5 Maze Explorers Weeks – 3 Programs – 2Go			Unit 2.4 Questioning Weeks – 5 Programs – 2Question, 2Investigate					Unit 2.2 Online Safety Weeks – 3 Programs – Various			Unit 1.6 Animated Story Books Weeks – 5 Programs – 2Create A Story				Unit 2.7 Making Music Weeks – 3 Programs – 2Sequence			Unit 2.3 Spreadsheets Weeks – 4 Programs – 2Calculate				Unit 1.3 Pictograms Weeks – 3 Programs – 2Count			Unit 2.8 Presenting Ideas Weeks – 4 Programs – Various				
	Unit 1.1 Online Safety & Exploring Purple Mash Weeks – 4 Programs – Various				Unit 1.5 Maze Explorers Weeks – 3 Programs – 2Go			Unit 2.4 Questioning Weeks – 5 Programs – 2Question, 2Investigate					Unit 2.2 Online Safety Weeks – 3 Programs – Various			Unit 1.6 Animated Story Books Weeks – 5 Programs – 2Create A Story				Unit 2.7 Making Music Weeks – 3 Programs – 2Sequence			Unit 2.3 Spreadsheets Weeks – 4 Programs – 2Calculate				Unit 1.3 Pictograms Weeks – 3 Programs – 2Count			Unit 2.8 Presenting Ideas Weeks – 4 Programs – Various				

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
YEAR 3 & 4 CYCLE A	Coding						Unit 3.2 Online safety			Unit 3.3 Spreadsheets			Unit 3.4 Touch Typing				Unit 3.5 Email (including email safety)				Unit 3.6 Branching Databases			Unit 3.7 Simulations		Unit 3.8 Graphing							
	Number of Weeks – 6						Weeks – 3			Weeks – 3			Weeks – 4				Weeks – 6				Weeks – 4			Weeks – 3		Weeks – 3							
	Main Programs – 2Code						Programs – Various			Programs – 2Calculate			Programs – 2Type				Programs – 2Email, 2Connect, 2DIY				Programs – 2Question			Programs – 2Simulate, 2Publish		Programs – 2Graph							
	See table below for breakdown																																
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
YEAR 3 & 4 CYCLE B	Coding						Unit 4.2 Online safety			Unit 4.3 Spreadsheets						Unit 4.4 Writing for different audiences				Unit 4.5 Logo		Unit 4.6 Animation		Unit 4.7 Effective Search		Unit 4.8 Hardware Investigators							
	Number of Weeks – 6						Weeks – 4			Weeks – 6						Weeks – 5				Weeks – 4		Weeks – 3		Weeks – 3		Weeks – 2							
	Main Programs – 2Code						Programs – Various			Programs – 2Calculate						Programs – 2Email, 2Connect, 2DIY				Programs – Logo		Programs – 2Animate		Programs – Browser									
	See table below for breakdown																																

### Coding Breakdown

<b>YEAR 3 &amp; 4 CYCLE A</b>	Review previous coding – Year 3, Lesson 1	Simulating a physical system – Year 3, Lesson 2	Making a timer – Year 4, Lesson 4	Debugging – Year 3, Lesson 6	Making a control simulation – Year 4, Lesson 5	Decomposition and Abstraction – Year 4, Lesson 6
<b>YEAR 3 &amp; 4 CYCLE B</b>	Review previous coding, Y4, lesson 1	Introducing 'if' statements – Year 3, Lesson 3	'if/else' statements – Year 4, Lesson 2	Repetition – Year 3, Lesson 5	Repeat until - Year 4, Lesson 3	Variables – Year 3, Lesson 4

## **Purpose of study**

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.

## **Aims**

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.

## **Attainment targets**

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

## **Subject content**

### **Key stage 1**

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.

### **Key stage 2**

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.