

Maple Ridge Computing Overview

Our Vision:

We believe that access to technology is an integral part of children in living in our modern world and should be freely accessible to all. We aim to develop confident, enthusiastic and skilled digital citizens, using a range of technologies to equip our pupils, not only as capable operators but also to become developers and innovators themselves. We aim to build curiosity in the world around them and to help them engage in their communities, including using other means of communication and learning.

Intent:

As a school we intend to develop the use of technology and aim:

- To help pupils become independent, creative, safe, respectful and problems solving digital citizens.
- To give pupils broader and transferrable skillsets.
- To inspire pupils beyond the classroom and develop an understanding of the fundamental principles and concepts, including sharing information, basic algorithms, presenting data and using technology responsibly.
- To build on an awareness of all the opportunities computing can provide.

Implementation:

In order to achieve this, we will combine subject specific teaching and the application of computing skills, in context, across the whole curriculum. The Maple Ridge Computing Scheme of Work has been adapted in response to the needs of our teachers that will be teaching pupils with a range of needs due to changes in our cohort/ intake. It aims to provide ideas, resources and guidance so that all classes can access the computing curriculum within their class ranges. The Scheme contains 5 strands that are weighted according to skills that will support functional use of technology and providing our pupils access to a variety of devices to ensure they develop as well-rounded digital users.

1. Computing skills – What is a computer? (DL)
2. Communication – Digital Media/ Multimedia (IT)
3. Communication – Data (IT)
4. Programming & Algorithms (CS)
5. Online Digital living/ Online Safety (linked with RSE/ PSHE curriculum) (DL)

Our Scheme will provide a breadth of content to cover all areas of the national curriculum – Information Technology, Digital Literacy, computer Science – while ensuring relevance to and meeting the priorities of our learners needs. All our pupils work significantly below age expected ranges and therefore we adapt content in order to facilitate progression through skills and concepts at the appropriate level for the pupil.

- We run a 2 year rolling program in KS2 with 1 computing specific lesson a week.
- In KS1 we follow the EYFS framework and deliver our computing through exploring and then build on skills through our progression framework as appropriate for the cohort.

- Online safety lessons are planned and delivered throughout the year with the support of CEOP/ National Online Safety/ ThinkUKnow – resources, PSHCE curriculum and individual support for pupils at all levels.
- Resources used to inform our SOW: Teach Computing ([Teach Computing](#)) / BBC Bitesize/ iLearn2 ([iLearn2 | Primary Computing. Made Easy.](#))
- Advantages of using iLearn2 – pupils can learn at own pace, developing independent learning skills with opportunities to continually review and revisit skills covered. It also supports remote learning where needed with pupil activity codes helping teacher provide specific activities and resources suitable to their individual needs. Some include unplugged activities. iLearn also have support for non- specialist staff to upskills while delivering content to their classes. Video tutorials are compatible with Google Chromes live caption tool, allowing pupils with hearing difficulties to access video content.

Units will support teaching our pupils the skills they need to access and share information, safely as part of their digital lives, experiencing a variety of resources in order to develop their independence when access the world around them. These skills are built on in other areas of the curriculum in order to embed what they have encountered in their computing lessons.

The units contain a number of activities and resources for delivering content but these can be interchanged with topic work, curriculum access as part of developing their understanding of transferring skills. There will be a number of ways of teaching concepts at a rate of progress that will support our pupils. Activities will be broken down into small steps in order to ensure consolidation of skills learnt.

Strands are weighted as follows: KS2

Communication – Multimedia (IT)	X3 half term units
Programming & Algorithms (CS)	X2 half term units
Communication – Data (IT)	X1 half term unit
Online safety / Digital Citizenship (DL)	Throughout the year allowing different areas – safe use of technology/ keeping safe online/ reporting/ etc.

KS1 – Learning through exploring – learn time boxes planned as part of topic

Impact:

A survey of our children concluded that computing was one of their favourite lessons and that over 90% of them felt confident, yet challenged in the subject as they learn new skills. We are developing the skills of our pupils and staff by ensuring that technology is a tool for communication and learning by making it part of our routines. The impact of our work in this area can be seen in pupils individual work as well as our pupil's confidence in using their skills across the curriculum. It has supported more independent learning (as appropriate) and engagement, enabling our pupils to use computers with confidence. The commitment of the school and investment made to computing as a subject has support our pupils to progress well through skills required and feedback from secondary schools have been highly complimentary with regards to the digital competency of our pupils.

Focus for long term learning:

Being a positive digital citizen will ensure that our pupils are ready for the world around them. We have split digital literacy into Digital Creativity, Digital Citizenship and Technology. This will ensure that we cover each of the areas of a vast subject area and offer a balanced curriculum.

This shows some of skills pupils will develop when covering these topics.

Digital Productivity (IT)

Using technology:

The ability to use a range of apps to create content.

- * Office Apps
- * Data and spreadsheets apps
- * iPad apps
- * Presentation apps
- * Online portals/ platforms for sharing & communication
- * Creating and publishing

Digital Creativity (DL)

Ability to create multimedia content:

- * Animation & Video
- * Sound & Music
- * Web design
- * 2D & 3D design
- * Graphics, Photography, Painting and ebooks.

Computing Curriculum

Digital Citizenship & Technology (DL)

Understanding the web and eSafety:

- * Researching using the internet and search engines
- * How search engines work
- * Collaboration & communication offline & online
- * ICT in the wider world - impact
- * Social networking, sharing content and blogging
- * eSafety and digital foot prints

Computing (CS)

Computer programs and understanding how computers work:

- * Giving instructions (input/ output)
- * Networks, internet, WWW - how they work.
- * Games design and programming
- * Algorithms (sequence) and testing
- * Computer simulations

Cross curricular links:

Literacy Spellings Re-telling stories Book Reviews Direct Speech	Sentences Interactive Stories Poetry Speaking Story Planning	Numeracy Early Counting Times Tables Number Bonds Symmetry 2D and 3D Shapes	Co-ordinates Angles Data Handling Mental Maths (Addition) Quiz
Science Physical Processes Space Human Body	Living Things Electricity Healthy Eating Quiz	History Historic Buildings Egyptian and Greek Gods World War 2	Vikings and Romans Historical Figures Post 1948 History and Timelines Museums
Geography Mountains and Rivers Maps and Location Studies	Weather Rainforests	Art and Design Landscapes Repeating Patterns Graphical Design	Image Editing Mondrian Computer Aided Design Art Gallery

Computing overview – Team 1 Focus:

Early years have had a change in curriculum requirements and is updated regularly by our Team 1 teachers to adapt and include areas into free flow learning:

Early Years focus: (currently levels Engagement – MR1-4 used in school)

A Unique Child: Observing what a child is learning	Positive Relationships: What adults could do	Enabling Environments: What adults could provide
<ul style="list-style-type: none"> Knows how to operate simple equipment – ie turn on CD player/ iPad/ MP3 player/ use remote control/ etc Shows an interest in technological toys with knobs or pulleys, real objects such as cameras/ mobile phones/ MP3 players/ remote control toys/ programmable toys. Shows skill in making toys work by pressing parts/ lifting flaps/ looking for activation buttons to achieve effects such as sound, movement, finding different images, lights, etc. Knows that information can be retrieved from computers ie will ask to see a photo again, look at site again, etc. 	<ul style="list-style-type: none"> Support and extend the skills children develop as they become familiar with simple equipment – ie twisting/ turning a knob/ slide switches/ Finding on switches Draw attentions to pieces of ICT apparatus they see/ that they use with adult supervision. 	<ul style="list-style-type: none"> When out and about or working with young children – let them press the button at pelican crossing/ speak into intercom/ press automatic door button/ help you switch on the equipment/ etc.

<ul style="list-style-type: none"> Completes a simple program on a computer (this is making objects move – clicking on button/ giving in instruction) Uses ICT hardware to interact with age-appropriate computer software. <p>Early learning Goal: Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.</p>	<ul style="list-style-type: none"> Encourage children to speculate on the reasons why things happen/ how things work/ why do they think that happened? Support children to coordinate actions to use technology ie call a telephone number/ use facetime/ open app and find icon Teach and encourage childrent o click on icons to cause programs to open or things to happen within program. 	<ul style="list-style-type: none"> Provide a range of materials and objects to play with that work in different ways for different purposed, ie egg whisk/ torch/ house hold implements/ pulleys/ construction kits/ sound recorders/ video recorders/ cameras/
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Unit Overview:

What is a computer?

1. Everyday Technology	MR 4/5	MR6/7	MR8/9	
2. What is the Internet?			MR8/9	
3. Key Skills	MR 4/5	MR6/7	MR8/9	
Ext - Key Skills for Work				MR10/11

Communication: Multimedia

1. Art	MR 4/5	MR6/7	MR8/9	
2. Sound & Music	MR 4/5	MR6/7	MR8/9	
3. Photographs	MR 4/5	MR6/7	MR8/9	
4. Films	MR 4/5	MR6/7	MR8/9	
5. eBooks	MR 4/5	MR6/7	MR8/9	
6. Posters & Presentations	MR 4/5	MR6/7	MR8/9	
7. Working with Text		MR6/7	MR8/9	
8. Animation	MR 4/5	MR6/7	MR8/9	
Ext – Creative Media			MR8/9	MR10/11

Communication: Data

1. Counting	MR 4/5	MR6/7	MR8/9	
2. Sorting	MR 4/5	MR6/7	MR8/9	
3. Pictograms & Charts	MR 4/5	MR6/7	MR8/9	
4. Branching Databases		MR6/7	MR8/9	
Ext – Record Card Databases			MR8/9	MR10/11
Ext - Spreadsheets			MR8/9	MR10/11

Programming and Algorithms

1. We control technology	MR 4/5	MR6/7	MR8/9	
2. Sequencing Instructions	MR 4/5	MR6/7	MR8/9	
3. Finding Patterns	MR 4/5	MR6/7	MR8/9	
4. Simple Programs – CodaPillar/ BeeBots/ Floor robots	MR 4/5	MR6/7	MR8/9	
5. Simple Programs – Scratch Jnr/ Lightbot/ BusyThings		MR6/7	MR8/9	MR10/11
Ext – computational thinking			MR8/9	MR10/11
Ext – Kodu/ Tynker/ Lightbot			MR8/9	MR10/11
Ext – Scratch			MR8/9	MR10/11