



Computing Curriculum

Nurturing and Inspiring Success in Every Child

Intent

Technology is everywhere and will play a pivotal part in students' lives,. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators not consumers and our broad curriculum encompassing computer science, information technology and digital literacy reflects this. We want our pupils to understand that there is always a choice with using technology and as a school we utilise technology to model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. Building our knowledge in this subject will allow pupils to effectively demonstrate their learning through creative use of technology We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. Our knowledge rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skillful computer scientists. We encourage staff to try and embed computing across the whole curriculum to make learning creative and accessible.

Implementation

<u>EYFS</u>	
	Implementation
♣ Understanding the World: 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>All our curriculum is shaped by our school vision which aims to enable all children, regardless of their gender, sexual orientation, religion, disability, ethnicity, special needs, or background to achieve their potential. Each learner is unique and has a preferred learning style which teachers understand. Above all our philosophy is make learning fun. Extra support is given to children, if required, to ensure that all children access this curriculum.</p> <ul style="list-style-type: none">• Digital Cameras – children use ipads to take pictures.• Remote and Programmable Toys – Children use beebots to explore and create simple programs.• Computer/IWBs – used daily for teaching.• Laptops – Children use laptop for RM Maths. They use 2publish+ to create and print pictures.

Key Stage 1

Key Stage 1 use The Teach Computing schemes of work which is structured in units. The Teach Computing Curriculum uses the National Centre for Computing Education’s computing taxonomy to ensure comprehensive coverage of the subject. All learning outcomes can be described through a high-level taxonomy of ten strands, ordered alphabetically as follows:

- Algorithms — Be able to comprehend, design, create, and evaluate algorithms
- Computer networks — Understand how networks can be used to retrieve and share information, and how they come with associated risks
- Computer systems — Understand what a computer is, and how its constituent parts function together as a whole
- Creating media — Select and create a range of media including text, images, sounds, and video
- Data and information — Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
- Design and development — Understand the activities involved in planning, creating, and evaluating computing artefacts
- Effective use of tools — Use software tools to support computing work
- Impact of technology — Understand how individuals, systems, and society as a whole interact with computer systems
- Programming — Create software to allow computers to solve problems
- Safety and security — Understand risks when using technology, and how to protect individuals and systems.

Unit summaries

	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
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-digittally.</p>	<p>Moving a robot Writing short algorithms and programs for floor robots, and predicting program outcomes.</p>	<p>Grouping data Exploring object labels, then using them to sort and group objects by properties.</p>	<p>Digital writing Using a computer to create and format text, before comparing to writing non-digittally.</p>	<p>Programming animations Designing and programming the movement of a character on screen to tell stories.</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>	<p>Pictograms Collecting data in tally charts and using attributes to organise and present data on a computer.</p>	<p>Making music Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.</p>	<p>Programming quizzes Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.</p>

National Curriculum Coverage – Key Stage 1 Computing Curriculum	1.1 Technology around us	1.2 Digital painting	1.3 Moving a robot	1.4 Grouping data	1.5 Digital writing	1.6 Programming animations	2.1 Information technology around us	2.2 Digital photography	2.3 Robot algorithms	2.4 Pictograms	2.5 Making music	2.6 Programming quizzes
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	✓				✓	✓	✓			✓		

The units are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made even if different teachers are teaching the units within a theme in consecutive years.

Children are taught to 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. Resources on learning to use computers safely: https://www.thinkuknow.co.uk/5_7/

- **Reception** - Lee and Kim's adventures – Animal Magic.
- **Year 1** – Lee and Kim's adventures – Animal Magic.
Jessie & Friends: episode 1 – watching videos and episode 2 – sharing picture.
- **Year 2** - Hectors world and his friends.
Jessie & Friends: episode 3: playing game
- **Year 1 and Year 2:** also use internet safety posters.

IMPACT

In EYFS and KS1 Computing ensures that children 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 and as active participants in a digital world.

We encourage our children to enjoy and value the curriculum we deliver. We will constantly ask the WHY behind their learning and not just the HOW. We want learners to discuss, reflect and appreciate the impact computing has on their learning, development and well being. Finding the right balance with technology is key to an effective education and a healthy life-style. We feel the way we implement computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils showcase, share, celebrate and publish their work will best show the impact of our curriculum.