



Milefield Primary School Approach to teaching of Computing



Intent

At Milefield Primary Our approach to the Computing Curriculum is taught through discrete weekly lessons, where meaningful links can be made to enhance the purpose of computing, these have been considered within wider curriculum mapping. The delivery of Computing is underpinned by the HCAT accelerated learning approach to teaching and learning.

The key concepts, principles and themes have been developed from the National Curriculum into a range of progressive knowledge and skills that are vital for children to explore. At MFPS we believe it is important to ensure children are using software correctly and that these basic skills are embedded from a young age in order to prepare children for the future. The progressive curriculum for Computing is based upon the *Teach Computing Programme* which supports teachers in identifying vital skills that children need to develop to allow them to confidently use software of their choice later on in their school journey.

Alongside this, opportunities for children to learn E-Safety and explore different uses of technology in the wider world are interweaved within units of work. Programming is also taught consistently throughout school and is revisited twice each year to ensure that children develop their understanding of algorithms and programming. The Computing Curriculum is composed of five domains:

- Computing systems and networks
- Creating media
- Programming
- Data and information
- E-Safety The Computing curriculum we offer is designed to meet the needs of all our pupils. It is rich, varied, imaginative and ambitious and meets the needs of individual learners by can easily be adapted for pupils with additional needs.

Implementation

Computing is taught discreetly, but is also embedded across the whole curriculum and permeates many subjects, such as: Literacy and Art. It is used in many curriculum areas and has raised interest, self-esteem, creativity and aspirations of all children. The Computing Curriculum is rich and varied and

provides our pupils with the skills required for life in the 21st Century. The Accelerated Learning Cycle, based on the work of Alastair Smith, is applied in all lessons. It stems from the idea of a supportive and challenging learning environment.

The cycle has active engagement through multi-sensory learning, encourages the demonstrating understanding of learning in a variety of ways and the consolidation of knowing. Our curriculum organisers support the planning and delivery of lessons to ensure children develop a deep, sequential understanding of specific knowledge and are able to apply these in a range of situations. Computing at MFPS is delivered through knowledge rich and practical skill-based units of work designed by Computing and Curriculum Leaders to ensure that all children have the opportunity to study a range of concepts and develop their understanding of how to use technology

Impact

At Milefield Primary, formative assessment is ongoing throughout each lesson. It judges progress and enables teachers to make flexible adaptations to their planned teaching. Through this regular ongoing assessment, tasks are matched to the ability of each child through scaffolds, adult support and providing a level of challenge that is stimulating for pupils and questioning skills.

Alongside formative assessment, Insight is used as a summative assessment to assess foundation subjects. The analysis of data from insights, identifies any gaps or misconceptions to be addressed.

Adaptations

At MFPS our curriculum is ambitious for all pupils, including those children with SEND. Curriculum designers and teachers have high expectations of what SEND pupils can achieve and the curriculum is not diluted or unnecessarily reduced for SEND pupils. Every pupil is different and so what works for each pupil varies. Pupil's individual needs are carefully considered, and adaptations are planned to ensure the success of pupils. The way that our curriculum is

designed ensures that chunks of learning are sequenced in a coherent way to enable all pupils, including those with SEND, to build on prior knowledge. Cognitive overload can be a barrier to learning which is one of the reason why we have chosen half termly curriculum drivers.

Where pupils are identified with having complex needs it may be appropriate to provide a personalised curriculum which will be based on individual needs and will retain ambition for the pupil. Where working memory is an issue for pupils, including those with SEND, we look to reduce extraneous load as much as possible as well as identifying key information when teaching. Adaptations to support individual pupils will be recorded on personal school support plans.

At MFPS we do not assume that pupils with SEND learn content better through practical work as this can cause distraction and cognitive overload rather than increase clarity or accessibility. The curriculum is not narrowed for any pupils. Knowledge is taught and then pupils are provided with opportunities for scientific enquiry to test and investigate the knowledge taught. Pupils' specific needs determine the types of adaptations which are required. These adaptations are in how the subject is taught rather than the content pupils are expected to learn. Where appropriate, learning will be chunked into smaller steps and pre learning and consolidation time is planned in to support need. Time is also planned to ensure pupils with SEND are pre taught vocabulary to support their understanding. Adaptations may include supporting pupils to pay attention to key aspects as well as reducing excessive or unhelpful demands on working memory.

Example knowledge organiser

Y6 AUTUMN TERM 1

COMMUNICATION

KEY CONCEPT:



Computing systems & networks

SIGNIFICANT PERSON:

Steve Jobs



Making connections: retrieval activity

Week 1: What is the importance of an internet address?

Week 2: How is information transferred over the internet?

Week 3: How does IT allow us to work together?

Week 4: Which way is best to collaborate online?

Week 5: How can we communicate?

Week 6: Which online communication is most effective?

Week 7: *Outcome*

Week 8: *Esafety focus*

Making connections: retrieval activity

Curriculum Objectives & Key Knowledge

Week 1: To know and explain the importance of internet addresses
 Knowledge: I know that when someone accesses a website, sends messages, or uses the internet in any way, data is transferred over the internet. A protocol is an agreed way of doing something. Computer uses protocols to communicate with each other. Networked computers use special addresses called IP addresses. Every website address is known as its domain name; every domain is hosted somewhere on a web server that has its own IP address. When a website is requested, the DNS searches the IP address associated with that website and directs the request, in the form of packets to the correct location.
 Vocabulary: protocol, address, internet protocol (IP) address, domain name server (DNS), packets

Week 2: To know and recognise how information is transferred over the internet
 Knowledge: I know that computers send and receive data using packets. Packets are used because they break large volumes of data into small chunks, making them easier to send across networks. There are two main parts to a packet: the header and the data payload
 Vocabulary: header, data payload, data

Week 3: To know and explain how sharing information online lets people in different places work together
 Knowledge: I know that people not in the same location may need to work together and this can be done online. I know that I can use the chat function to communicate with others online. I can use the explore function to find information.
 Vocabulary: chat, explore, location

Week 4: To know and evaluate different ways of working together online
 Knowledge: I know that there are different ways of working together online. I know that we can reuse and modify projects online. I know it is not always ok to use someone else's work. Using someone else's work needs to be within the bounds of copyright and with the relevant permissions.
 Vocabulary: modify, collaboration

Week 5: To know and recognise how we communicate using technology
 Knowledge: I know that there are different ways to communicate a simple message: writing, using symbols, gestures, speaking and signalling. I know that technology is evolving, we can now message via video links, at etc....
 Vocabulary: communication, symbols, gestures

Week 6: To know and evaluate different methods of online communication
 Knowledge: I know that we can communicate through a variety of methods. I know that public communication means it is visible to all and private communication may be restricted to individuals or groups. I know that many forms of internet communication such as social media have settings to allow the user to choose from a public or private setting. I know that some internet communication can be one-way (youtube videos) or two-way (whatsapp)
 Vocabulary: One-way communication, Two-way communication, social media

Week 8: Esafety Focus To understand that what I put on the internet is permanent
 Knowledge: I know the online safety rules and adopt these when using the internet and other technologies. I know why these rules exist and how they keep me safe online. I am aware of the consequences of not following the rules. I know that content put online is difficult to remove. I know the rules and legality of using online social media platforms and apps.
 Vocabulary: consequences, legality, rules, social media platforms

Example Vocabulary viewer

VOCABULARY VIEWER

COMPUTING











Computing systems & networks

Year 6 Communication

Autumn Term 1



KEY CONCEPT: Computing Systems & Networks		
 <p>PROTOCOL: An agreed way of doing something.</p>	 <p>DOMAIN NAME SERVER: Changes IP addresses to their domain names (Web address names)</p>	 <p>PACKETS: Unit of data that travels along a network path</p>
 <p>DATA: Describes the information that stores and organises computer systems</p>	 <p>DATA PAY LOAD: The information that is being transferred within the data packets</p>	<p style="text-align: center;"><i>Modify vs Change</i></p> <p>MODIFY: To make partial or minor changes</p>
 <p>TWO-WAY: Process by which two people or groups are able to communicate back to each other e.g. whatsapp</p>	 <p>LEGALITY The state of being in accordance with the law</p>	 <p>RULES Understood principles that are to be followed</p>