# **COMPUTING** at Ham DIngle

Our Computing curriculum aims develop computer scientists by explicitly developing the knowledge, understanding and skills.Our core Computing curriculum builds progressive knowledge of technology in our world and how it can be used in everyday life. Through this, children will become more confident and creative in their uses of technology for a wide range of purposes.

## Big Ideas

We use Purple Mash to support the delivery of Computing across the whole school. The pupils are actively involved and engaged in Computing for sustained periods of time. The Big Ideas are:

- Understand use of algorithms
- Understand computer networks
- Design, write and test programs to achieve goals, including solving problems.
- Use logical reasoning to make predictions
- Organise, store, retrieve, manipulate and present data
- Use and communicate online safely and respectfully
- Recognise uses of IT outside of school

## Content and Sequencing

**Content** – Our Computing Curriculum aims to inspire in pupils a curiosity and fascination about the technology that surrounds them on a daily basis. It explores a mixture of units linking to the three predominant areas of computing; computer science, infromation technology and digital literacy.

**Sequencing -** Subject coverage is planned sequentially and with a clear rationale for making connections with prior learning. The overlaps between units serve to deepen understanding of computational concepts and provide opportunities for pupils to apply and extend understanding and make links in their knowledge and capabilities. Strategic and dedicated time allocated to Computing enables a focus on curriculum studies to increase motivation, pace and connection

## Deepening Concepts

Our Computing deepening concepts are the disciplines that help pupils to think and act like a Computer scientist, these are shared at the start of a lesson and are:

- To code (Program using algorithms)
- To communicate using technological language and presenting using different ways.
- To connect using technology with the wider world for a range of purposes.
- To collect data and information and evaluate its purpose

## Learning Modules

Each learning module has a knowledge and vocabulary rich teacher guide and knowledge organiser which identify:

- NC Computing Curriculum expectations
- Connections to previous learning in the sequence
- End point subject skills and knowledge
- Contextual Tier 2 and Tier 3 vocabulary
- Lesson by lesson navigation helps build conscious connections

## Lesson Design

Each lesson has:

- A clear structure of – example, explain, attempt, apply and challenge
- Vocabulary capture where pupils' practise and define words
- Quality assured highly detailed diagrams and images to enrich the teaching sequence
- The teacher will begin with retrieval practice, where children will recall their learning from previous lesson or unit.
- Before the lesson teachers set the children 'To Dos' which promote small steps that can be handed in for feedback.
- Teacher will clearly model the skills that the children will be practising during the lesson
- The children will then practise the skills independently
- The opportunity to share work via the computing class blog. Children can then evaluate and reflect on their and each other's work

**COMPUTING continued…**

## Vocabulary

Each learning module includes and teaches subject/unit specific vocabulary. This is linked to the skills that the children will be practising and applying in each unit and will be consistently referred to throughout the lesson and the unit.

## Metacognition

Pupils are encouraged to think about their own learning by monitoring their understanding linked to the lessons learning. Pupils use the class 'WALT' and 'WILFs' to monitor their achievement and purposefully direct their learning. Once they judge their understanding to be secure. they use this to reflect on their class blog and feedback on their lesson 'To Do'.

Pupils further engage in the process of metacognition by reflecting on their lesson through the unit using the Computing 'I can' statements.

## Retrieval Practice

Retrieval practice is used as a learning tool, not just an assessment tool. It allows children to transfer their ideas from their working memory into the long term memory.
Retrieval is also spaced over time to support children in their ability to regularly recall knowledge. Children are given regular opportunities to retrieve through:

- Progressive skill building and using previously taught skills in subsequent lessons and topics.
- Regular quizzing and retrieval activities.

Each lesson begins with a recap of the last lesson and the skills/knowledge acquired.

## Subject Specific Resources

Our core offer ensures that all children have access to:

- Purple Mash Software
- Laptops, Chromebooks or iPads
- Google
- Microsoft Office

### Subject Specific Experiences

- Online Safety Day
- Opportunities to use technology across the curriculum.

## Online Safety

Children are taught to be responsible online and to understand the risks and benefits of online communication. We ensure children are well equipped to effectively deal with situations that do arise. We do this by:

- Feeding online safety through units progressively throughout the year.
- Celebrating special events e.g. Internet safety day, to raise awareness
- Updates shared on weekly Friday flyers to promote parents' support.

## Making Progress

Children make progress when there is a change in long term memory and when content is taught in small, manageable steps. This will reduce cognitive load. Units are sequenced, so prior knowledge, skills and concepts are built upon from previous year groups and units lead to improved skills and increased knowledge.

Progress of individual children is assessed through observations and end of unit outcomes. Class progress is recorded and monitored through a class blog which gives teachers and children the opportunity to share work and leave pupil voice around their learning.