Subject on a Page COMPUTING

'Everyone should learn to program a computer, because it teaches you how to think'

Provide children with opportunities to explore progressive coding and develop their skills throughout their journey in school.

Ensure that all children access a range of age appropriate resources for physical computing from Nursery to Year 6. Children will have the opportunity to explore to develop ability and confidence.

Equip the children with transferrable problem solving skills through the use of computational thinking.

Deliver a diverse and engaging curriculum that provides children opportunities to discover an interest within the subject.

Provide children with informative and well-planned safety weeks to incorporate and highlight the importance of digital literacy and develop their understanding of staying safe in the digital world.

Provide opportunities for the children to experience and use a range of technology in different contexts to broaden their knowledge and experiences.

COMPUTER SCIENCE

Children's knowledge and skills will build throughout each phase of school, building upon their programming skills each year. They will become increasingly confident at applying computational thinking skills. Children will develop their skills through opportunities and experiences.

There are 4 main strands of Computer Science: Computational thinking, Programming, Networks and Artificial intelligence.

DIGITAL LITERACY

Throughout school, digital literacy is built into the curriculum supporting the children's learning. With links to our PSHE curriculum, they will develop their understanding of digital literacy through the use of devices and tools competently before learning how to store and handle digital content. As they progress through Key Stage 2, they will have the opportunity to learn how to design, create and edit their own content. Their safety underpins all of the learning, from Nursery to Year 6, considering the emerging changes within society.

PROGRAMMING

Children will be exposed to a range of different variations of physical programming from Nursery to Year 6. Through the use of programmable toys in Early Years and Key Stage 1, the children will begin to understand algorithms and implement this as basic code. They will also learn about debugging-to find their mistakes and fix them.

As the children progress into Key Stage 2 they will apply the code in a more complex way, the programs they write will become more complex using a range of constructs such as sequence, selection, repetition and variables in their programs.

COMPUTATIONAL THINKING

The children will begin to learn about computational thinking from Nursery to Year 6, with opportunities to explore with both unplugged activities and using equipment to support their learning. By promoting logical thinking from a young age it encourages the children to self solve problems by reviewing them from different angles.

In Key Stage 1, they will use resources such as robots to create algorithms and plan how to resolve any problems encountered whilst writing code and facing other problems.

As they move into Key Stage 2, the language encountered with develop to supplement the depth of the logical problems they will encounter . By introducing physical computing, and web design, it makes the problems relevant to their everyday lives by exposing them to areas that they may experience in the ever expanding technological world.

INTENT

WHAT DO WE AIM TO DO?

IMPLEMENTATION

HOW WILL WE ACHIEVE OUT INTENT?

RESOURCING

Children in all phases, from Nursery to Year 6 have access to high-quality and age appropriate resources that are used in enhance and provide experiences. It is key that the children are able to use the resources to practice and apply skills that have been taught in an interactive way to build their confidence. Access to practical resources will allow teachers to develop learning further to provide opportunities for the children to apply their learning and build their confidence with the technology.

All classes have access to devices which allows for the children's computational learning to extend beyond the curriculum, supporting the development of digital literacy in a broader context.

ONGOING CPD

Staff will receive ongoing, relevant CPD to ensure that they are able to support the curriculum through their teaching. Training and planning support will be offered through the subject leader and SLT teams.

Training is also available through the local NCCE hub, that all teachers are able to access if required to further develop their own knowledge.

EXTERNAL LINKS

There will be links developed with the local NCCE hub through the use of their equipment loan scheme, where we will be able to borrow the physical equipment needed to support the children's learning.

VOCABULARY

All vocabulary will be taught to the children throughout the teaching sequence to ensure that they have the appropriate language to support their learning. Teachers will ensure that all Computational terms are embedded and built upon through the children's journey at school.

INCLUSION & INTERVENTION

Teachers will continually assess children's ability and progress using information from lessons, observations and assessment. Swift intervention will be made where necessary. Lessons will be well-planned to ensure progressions between areas of study and lessons. They will be aware that children may have gaps in their learning and will consider how to identify and support these before developing new learning.

IMPLEMENTATION

HOW WILL WE ACHIEVE OUT INTENT?

Children's computing knowledge will allow them to problem solve with increasing independence using logical thinking skills.

Children will have a good understanding on how to create, manipulate, store and retrieve digital content safely and responsibly

Physical computing will allow children to actively problem solve to find resolutions to algorithmic problems.

Children will have the opportunity to learn about and experience areas that may impact their lives in a safe and controlled environment.

Children will have a deeper understanding of technology, experiencing how technology is connected and how it can used within everyday life.

Children will have a good understanding of digital literacy and will be have experience on being thoughtful digital citizens.

IMPACT

HOW DO WE KNOW WE HAVE ACHIEVED OUR AIMS?