Areas of Computing - Computer Science

In the National Curriculum (NC), computer science is referred to as 'the core of computing… in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.' Computer Science has strong links to the other two key strands in Computing: Information Technology and Digital Literacy. All three strands build on knowledge from each other.

At Meridian Trust, each school uses child friendly phrasing to teach children what Computer Science is.

In EYFS and KS1, they need to understand that it is being able to control a computer or program. In KS2, they need to understand that it is being able to control a computer and understand how software and hardware communicates.

National Curriculum Computing aims for all pupils:

- Able to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation,
- Able to analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems.

Key Stage 1 statements:

Pupils should be taught to:

- 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.

Key Stage 2 statements:

Pupils should be taught to:

- Design, write and debug programs that accomplish specific goals, including controlling or simulated physical systems; solve problems by decomposing them into smaller parts,
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output,
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

At Meridian Trust, our schools follow a two year cycle for the Computing curriculum where each strand (computer science, information technology and digital literacy) are built on throughout the phases: Reception, Year ½, Year ¾ and Year 5/6.

Cycle A	
EYFS	- Can use the language of forward and backwards independently with using the language left and right with support. - Can find the appropriate button which matches the appropriate language with support. - Can find the appropriate button which matches the appropriate language and make the bot move using three commands.
Year 1/2	- Programming A – Robot (Y1, Y2) (2 hours) - Programming A – Robot (Y1, Y2) (4 hours)
Year 3/4	- Programming A - Sequencing music (Y3) (4 hours) - Programming B - Events and actions (Y3) (4 hours)
Year 5/6	- Programming B – selections in quizzes (Y5) Joined with Programming A – variables in games (Y6) (8 hours) - Programming A – selection in physical computing (MicroBits - Y5) (8 hours)
Cycle B	
EYFS	- Can use the language of forward and backwards independently with using the language left and right with support. - Can find the appropriate button which matches the appropriate language with support. - Can find the appropriate button which matches the appropriate language and make the bot move using three commands.
Year 1/2	- Programming B – introduction to animation (Y1) and quizzes (Y2) (8 hours)
Year 3/4	- Programming A – repetition in shapes (Y4) (4 hours) - Programming B – repetition in games (Y4) (4 hours)
Year 5/6	- Programming B – sensing (Y6) (8 hours)

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