



# Computing Curriculum 2019-2020

## **Intent**

All pupils at Bushbury Lane Academy have the right to have rich, deep learning experiences that balance all the aspects of computing. With technology playing such a significant role in society today, we believe 'Computational thinking' is a skill that children must be taught if they are to be able to participate effectively and safely in this digital world. A high-quality computing education equips pupils to use creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems.

At Bushbury Lane Academy, the core of computing is Computer Science in which pupils are introduced to a wide range of technology, including laptops, iPads and interactive whiteboards, allowing them to continually practice and improve the skills they learn. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology- at a level suitable for the future workplace and as active participants in a digital world. We teach a curriculum that enables children to become effective users of technology who can:

- Understand and apply the essential principles and concepts of Computer Science, including logic, algorithms and data representation;
- Analyse problems in computational term, and have repeated practical experience of writing computer programs in order to solve such problems;
- Evaluate and apply information technology analytically to solve problems;
- Communicate ideas well by utilising appliances and devices throughout all areas of the curriculum.
- 

## **Internet Safety**

At Bushbury Lane Academy, we take internet safety extremely seriously. We have an E- Safety Policy that provides guidance for teachers and children about how to use the internet safely. Every year group participates in lessons on e-safety and children understand how to stay safe when using technology.

## Implementation

Teachers are provided with support to plan their curriculum through our school's CPD offer, inset days, staff meetings and working alongside outside education providers e.g. squirrel learning technologies

As part of this planning process, teachers need to plan the following:

- A sequence of learning which includes a key question, brilliant beginning, skills and knowledge, vocabulary and a fantastic finish;
- The sequence of lessons for each subject, should have careful planning for progression and depth;
- Trips and visiting experts who will enhance the learning experience;
- A means to display and celebrate the pupils' work in their class and finally a way to share their learning with parents and the local community.

## Computing curriculum to be taught at Bushbury Lane Academy

	Year 1	Year 2
Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.	X	X
Write and test simple programs.	X	X
Use logical reasoning to predict the behaviour of simple programs.	X	X
Organise, store, manipulate and retrieve data in a range of digital formats.	X	X
Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school.	X	X

	Year 3	Year 4	Year 5	Year 6
Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	X	X	X	X
Use sequence, selections and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs.	X	X	X	X
Use logical reasoning to explain how a simple algorithm works, detect and correct errors in algorithms and programs.	X	X	X	X
Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.	X	X	X	X
Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.	X	X	X	X
Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	X	X	X	X

## Impact

Our Computing curriculum is high quality, well thought out and is planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes
- Children can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
- Children can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems;
- Children can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems;
- Children are responsible, competent, confident and creative users of

information and communication technology.

- A celebration of learning for each term which demonstrates progression across the school;
- Pupil discussions about their learning.