



## Lake Haven - Computing Curriculum

### Intent

At Lake Haven we appreciate that becoming computer literate is increasingly important in enabling our children to be confident, creative and independent learners; and we acknowledge that the younger generation will rely heavily on their computational confidence and digital skills in order to accomplish many career goals. As such, it is our intention to provide a wide range of experiences and opportunities to help them achieve this. We want our children to understand the potential of technology, and to start to build a repertoire of useful computing skills for their future.

Whilst we want our children to become digital creators (using technology to support their learning and lives); we also want them to understand the potential impact of being digital consumers (on their time, relationships and wellbeing). Indeed, as

well as the huge potential of technology, we teach our children to understand the challenges and problems it can create. We enable our children to become good digital citizens, to know how to stay safe and keep others safe online, to be aware of the need to be critical thinkers and test out what they see, and the importance of carefully controlling what they share so that they can ultimately manage and maintain their own digital footprint.

Our key aims are to:

- To enable the children to use the computers that we provide at Lake Haven
- To use and see technology as their tools to be successful in particular during literacy lessons.
- To use technology as their usual way of working to support them once their examinations arrive.
- Empower our children to keep themselves safe in an increasingly digital society
- Promote an understanding of how technology plays a role in most aspects of modern life; considering the benefits and potential challenges that this can bring
- Provide a safe space in which our children can learn to navigate and interact with the digital world, whilst exploring their own personal expression and identity
- Develop resilient, reflective and creative approaches to using technology; to enable our children to enhance their learning and their lives, and to solve problems
- Enable our children to find, explore, analyse, exchange and present information in discriminating and effective ways
- Develop the skills to use technology to communicate in a range of ways; including combining text and images, and recording and editing sounds and motion pictures
- Develop the skills to control technology in a purposeful way to achieve a goal, evaluating progress and remaining resilient when actions need to be reviewed or refined

## Implementation

At Lake Haven, we teach the children how to be computer literate using their own laptops that we provide. We use Google as our chosen cloud storage and also Google Classrooms for our children to access their work with a personal Google Drive for them to save their work. For this to work successfully, we need to teach the children how to use the Google tools and access the Drive and classrooms before we can do anything. As many of our children have comorbid diagnosis and have dyslexia and/or hypermobility, we need to ensure that our children can access the dictation tools and the read back technology for them to access. All of this is taught prior to using the scheme of work. Once the basic skills have been delivered and understood, we have adopted the Purple Mash Computing Programme and will follow the step by step plans which offer our children a progressive skills and knowledge based curriculum. However, if the children have missed too much of their education and are not particularly computer literate, we have also devised a bespoke curriculum which is carefully sequenced and interconnected; and which enables our children to develop their knowledge and understanding of computing and digital technology as they move through our school. At all times, we will endeavour to help the children follow the National Programme to allow an equal opportunity of learning and education, but know that this sometimes isn't possible. Should the children be following Lake Haven's bespoke computing curriculum, it is organised in a two year cycle, with topics of study being reviewed collaboratively by our teaching team at the end of each cycle. Within learning how to use a computer, we will also help the children learn to touch type and edit and check their written work. Many of our learners have dyslexia and the use of a computer will be invaluable to them as they become independent adults.

As with all areas of our curriculum, it is important to remember that all of our children have significant gaps in their learning due to the experiences that have brought them to Lake Haven – indeed, all of our children have not been able to access the full curriculum for at least a year before joining us. As explained in our Curriculum Policy, this means that many of our children are working at a level below their chronological age whilst we support them to re-engage with education and enjoy high levels of interest and success, which help them to rebuild their self-esteem and start to value their own social and academic achievements.

As most of our children routinely use online devices to play games and watch videos at home, in Lower Key Stage 2, our

children start by learning about the potential dangers of using the internet; and how they can keep themselves safe. As part of our Online Safety Programme, we introduce the children to CEOP's SMART code. The children learn that not everything they see online can be trusted, and how to react and report their concerns if anything online makes them feel uncomfortable, upset or frightened.

As they start to build their computing skills, we continue with Lower Key Stage Two children learning how to combine and edit text and images to present information to an audience; and how to record, retrieve and edit sounds. They also learn how to send an email, and begin to explore coding using Scratch Jnr.

In Upper Key Stage Two our children deepen their knowledge of how to stay safe online by looking at cyber bullying (including exploring the social and legal outcomes for perpetrators); and they begin to understand that we all leave a 'digital footprint' when we go online.

These children develop their publishing skills by learning how to incorporate additional features such as graphs, data and hyperlinks into their documents and presentations; and begin to experiment with stop motion animation. They also continue to use Scratch Jnr to develop their coding skills, using a wider range of commands to achieve more complex goals.

Key Stage Three and Four builds securely on the previous stages. In their continued learning about E-safety, the children find out about the potential risks of e-commerce, and about their rights and responsibilities as a digital citizen. In preparation for Key Stage Four and life beyond school, the children start to develop their knowledge and skills in using common software applications, such as Google's equivalent to PowerPoint (Slides) and Excel (Sheets); and they become increasingly confident in using word processing to communicate effectively across the curriculum.

In order for our children to know more and remember more, prior learning is always considered; and opportunities for the revision of processes and understanding is built into all lessons. Through revisiting and consolidating, our approach helps children build on existing knowledge whilst introducing new skills and challenges; and the revision and introduction of key

vocabulary is built into each lesson.

As the children acquire and develop new knowledge and skills, they are provided with a wide range of opportunities to apply them across the curriculum, and are supported in using digital technology to follow their own interest and to seek information to answer their own questions.

## **Impact**

Through our Purple Mash Programme and our bespoke approach alongside quality first teaching, we will see the impact of this subject in different ways. Our children will be engaged in lessons and know how to keep themselves safe when interacting with the digital world. They will be able to talk about and demonstrate the knowledge, skills and vocabulary that they have acquired; and will show increasing levels of understanding and critical thinking when using technology to communicate information and carrying out coding activities.

Evidence collected will show that a range of topics are being covered, and that our carefully sequenced and inter-connected approach to learning is enabling our children to develop a broad range of computing skills which they can apply to enhance their learning across the curriculum.

Ultimately, our children will develop a sense of their responsibilities as a digital citizen, and build a strong base of skills which will support them with learning, life and future career choices.

## **Cultural Capital**

Computing and technology is a really important tool for our learners and them being able to overcome any barriers to learning. All of our children will have an individual laptop for them to complete their work or be able to research or complete their computing scheme of work. We have decided that it is easier to have a laptop for each child to really assist with their

future lives and for them to become computer literate. We didn't want any of our children to miss out on being computer savvy in today's modern world. Our laptops have Microsoft packages that will enable the children to fully know how to make their way around a computer and be able to communicate or present and save their information or findings. Our laptops also have a dictation tool which for many of our reluctant or dyslexic children, this allows them to still access and record their ideas and gain a feeling of success rather than struggle.

Alongside the laptops, children have access to Ipads, Kindles and cameras. We strive to ensure that all children have access to the latest technology so as not to disadvantage them in future prospects in their adult life. We teach the children their computing scheme of work, but we also teach them about safety which surrounds the internet and online world. For this to really resonate with the children, a visit to 'The Warning Zone' also supports the understanding of cybercrime and being safe online.

## **National Curriculum Key Stage 2 Objectives**

Key stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating 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
- 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

## National Curriculum Key Stage 3 Objectives

### Key stage 3

Pupils should be taught to:

- design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems
- understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem
- use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions
- understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]
- understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems
- understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can

- undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users be represented and manipulated digitally, in the form of binary digits
- create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability
- understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.

#### Key Stage 4

Our students will continue to have lessons dedicated to computing skills and technology. This will be on a very bespoke basis and geared to support them in accessing their GCSEs and also their chosen Post 16 options.

### Lake Haven - Computing Overview

Key Stage Equivalent	Term 1	Term 2	Term 3
Lower KS2 Year A	Safety Rules SMART Word Processing	E-Safety Searching Safely Online	Email Email Etiquette and Safety
Lower KS2 Year B	Safety Rules SMART Power-Point	E-Safety Spreadsheets	Instructions - Coding
Upper KS2 Year A	Safety Rules SMART Word Processing	E-Safety Digital footprints	Blogging Blogging Etiquette and Safety

<b>Upper KS2 Year B</b>	Safety Rules SMART Stop Motion Animation	E-Safety Spreadsheets	Instructions - Coding
<b>KS3 Year A</b>	Safety Rules SMART Word Processing - touch typing Coding	E-Safety Being a Digital Citizen Databases	Website Creation Blogging Etiquette and Safety Spreadsheets
<b>KS3 Year B</b>	Safety Rules SMART Music and Video Creation Graphing	E-Safety Power-Point or Google Slides Animation	Instructions - Coding Game Creation

NB: In addition to these focus units of work being taught, all children routinely apply and refine their computing skills across the curriculum; i.e. creating and publishing a wide range of documents in English and Understanding the World, using data handling software in Maths, and exploring digital simulations in Science. Extensive additional coverage to staying safe online is also achieved through our PSHE learning.



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