Curriculum Map: **Computing**   **Year 1**

Below outlines the learning focus for each term

<table>
<tr>
<td colspan="4">
KS1 End Points
Algorithms/Problem solving

understand:
-what algorithms are
-how algorithms are implemented as programs on digital devices
-that programs execute by following precise and unambiguous instructions

Programming

create and debug simple programs

Logical thinking

use logical reasoning to predict the behaviour of simple programs

Creating content

use technology purposefully to create, organise, store, manipulate and retrieve digital content

Using IT beyond school

Recognise common uses of information technology beyond school

E-safety

Use technology safely and respectfully, keeping personal information private.
Identify where to go for help and support when they have concerns about content or contact on

</td>
</tr>
<tr>
<td rowspan="2">Term</td>
<td colspan="2">Learning Focus</td>
<td rowspan="2">Cross Curricular links</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Skills</td>
</tr>
<tr>
<td>Autumn 1</td>
<td>
Computer Science
Espresso Coding 2.0 - Block Coding Level 1 – On the move

An algorithm is a set of step-by-step instructions to solve a problem or complete a task.
A computer program is a sequence of instructions that can be followed by a computer.
I know that when you run a program, the computer executes code
Input is data supplied to a computer (in this case pressing buttons on the keyboard)
Output is information produced by a computer (in this case movement of the object, like moving forwards).
A computer is a device with inputs, outputs and the ability to store programs.
To understand how people use computers at work

</td>
<td>

To program objects to move when the program starts (start events)
To program objects to move when they are clicked on (click events)

</td>
<td></td>
</tr>
</table>

Autumn 2	**Information Technology – Paint (Multimedia)** • Analogue media is real-world traditional media like paint and paper, and digital media is media on a computer (stored as numbers). • Different brushes and brushstrokes can be used for different effects, for example choosing a thick brush and creating broad, horizontal strokes to paint. • To closely match a pencil mark, you should choose a brush with a small size and clear edge. • The undo tool can be used to correct mistakes. • Bitmap digital images are images made up of lots of dots called pixels. • A layer is one of a virtual pile (or stack) of images on top of one another that make up the whole picture. Layering in a painting app means making a stack of images. • Saving your image means storing it (as numbers) in the devices memory. • To understand how people use computers beyond school	• To paint with different colours • To paint with different brushes • To create shapes and fill areas • To add text to a painting • To create a digital poster • To save and retrieve digital content	**Art link - the children will be studying the work of famous artists including Georgia O'Keefe in summer 1 and can make links.**
Spring	**Computer Science** Espresso Coding 2.0 - Block Coding Level 1 – Simple inputs – Magic castle. • To understand that when you run a program, the computer executes code • I understand that an algorithm is a set of step-by-step instructions to solve a problem or complete a task. • I know that a computer program is a sequence of instructions that can be followed by a computer • Input is data supplied to a computer (in this case pressing buttons on the robot) • Output is information produced by a computer • A bug is an error or mistake in a program. • Debugging means finding and correcting mistakes in a computer program algorithm. The term was made popular by Grace Hopper.	• To combine start events and click events to make a simple game • To program an object to hide when it is clicked on • To program an object to stop when it is clicked on • To practise debugging code	
Summer 1	**Digital Literacy – Introducing MS Word** • To understand that MS Word can be used to type text and save documents • The font is the design of the letters used for the writing. • Create a document using different font styles, sizes and colours and format text (underline, bold, italics) • To identify information technology in jobs	• To type capital letters and symbols using the shift key • To select and format text (underline, bold, italics) • To select and format text (font, size, colour) • To create a digital fact file • To save and retrieve digital content	**Literacy - spoken and written language skills are practised while planning and typing** **The use of speech synthesis links to phonics**

Summer 2	**Computer Science - Programming Bee-Bots** • An algorithm is a set of step-by-step instructions to solve a problem or complete a task. • A computer program is a sequence of instructions that can be followed by a computer. • A programmable toy (or robot*) can be made to move by inputting the algorithm as button presses. It is then stored as a program. • Input is data supplied to a computer (in this case pressing buttons on the robot) • Output is information produced by a computer (in this case movement of the robot - like moving forwards). • A computer (for example a Bee-bot) is a device with inputs, outputs and the ability to store programs. • A robot is a computer that can move. • A bug is an error or mistake in a program. • Debugging means finding and correcting mistakes in a computer program algorithm. The term was made popular by Grace Hopper	• To program a Bee-Bot using the arrow buttons • To program a Bee-Bot to follow an algorithm • To practise debugging code	**Links to future literacy and maths topics - instruction writing and position and direction.**
Online Safety Lessons (1 per half term)	**Online Safety** • To understand how to communicate safely online • It is important to keep personal information private. • Schools ask for parents'/carers' permission to take and share photos.	To safely search for images online To communicate safely online To explain how to be SMART online To sort personal information into safe and not safe to share	**PSHE – keeping safe**

Intent

We know that computing and digital technology is going to play a pivotal role in our children's lives and as a result we aim to develop 'thinkers of the future'. We aim for our children to be digital creators rather than just consumers when using technology and to equip them to navigate the rapid and extraordinary changes taking place in digital technology effectively and safely.

Our curriculum, encompassing computer science, information technology, digital literacy and online safety, is progressive, ambitious and carefully sequenced. Children know that they need to face and overcome challenge in computing lessons; they accept that they will fail, will need to persevere and develop skills as logical, computational thinkers. We offer children access to a wide range of software, platforms and devices to help them, using technology as a tool for both creativity and learning. We want our children to be active participants in the digital world, whilst ensuring they are respectful, responsible and confident users; children will constantly be made aware of measures they can take to keep themselves, and others, safe online.

Implementation

Our children follow a carefully structured Computing curriculum which has been designed to ensure children know more, do more and remember more as they progress through our school. Our content is supported by advice, requirements and guidelines presented in the National Curriculum.

Computing is taught weekly. Detailed medium-term planning supports teaching, ensures continuity and carefully plans for progression and depth. Children have opportunities to use high quality resources and materials to support their learning. Wider Curriculum links and opportunities for the safe use of digital systems are considered in wider curriculum planning.

Our computing curriculum is inclusive for all children; each lesson is sequenced so that it builds on the learning from the previous session. Where appropriate, activities are scaffolded so that all children can succeed, children may be provided with extra resources and support, such as visual prompts, so that they can reach the same learning points as the rest of the class.

Impact
A high quality computing education aims to develop a range of programming and technological skills that are transferable to other curriculum areas, including Science, Mathematics, English and History. As pupils progress through KS1 and KS2 children will become increasingly confident in:

- The application of their digital skills,
- Becoming increasingly efficient and effective communicators, collaborators and analysts,
- Showing imagination and creativity in their use of ICT in different aspects of their learning and life beyond school.
- E-safety and the risks involved when using the internet.

The impact of the computing curriculum is assessed continuously against the age-related expectations in computing for each year group. In doing so, we are ensuring that the necessary support is provided for all children to have a good understanding of the primary computing curriculum whilst allowing us to effectively differentiate tasks for students.

Other methods of judging the impact of the computing curriculum offered are through the following methods:

- Pupil discussions and interviewing the pupils about their learning (pupil voice).
- Monitoring planning of lessons by the subject lead and providing feedback.
- Photo evidence and images of the pupils' practical learning.
- Monitoring of children's work.