

Below outlines the learning focus for each term

KS2 End Points:**Problem solving**

- design, write and debug programs that accomplish specific goals
- control or simulate physical systems
- solve problems by decomposing them into smaller parts

Programming

- use sequence, selection, and repetition in programs and to work with variables
- work with various forms of input and output

Logical thinking

- 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
- understand how networks can provide multiple services, such as the world wide web.

Creating content

- select, use and combine a variety of software (including internet services) on a range of digital devices
- design and create a range of programs, systems and content that accomplish given goals
- collect, analyse, evaluate and present data and information

Searching

- use search technologies effectively
- appreciate how search results are selected and ranked

E-safety

- use technology safely, respectfully and responsibly
- recognise acceptable/ unacceptable behaviour
- know a range of ways to report concerns and inappropriate behaviour
- be discerning in evaluating digital content
- understand the opportunities networks offer for communication and collaboration

Term	Learning Focus		Cross Curricular links
	Knowledge	Skills	
Autumn 1	Computer Science Espresso Coding 2.0 - Block Coding Level 3 – Sequence and animation. <ul style="list-style-type: none"> • An algorithm is a sequence of instructions to complete a task. Sets of directions or movements are an example of an algorithm. • Programs are sequences of code. These are precise instructions (or a set of rules) that can be understood and followed by a computer. • Scratch is a simple block-based programming language in which programs for characters are built by snapping together code blocks 	<ul style="list-style-type: none"> • Create sequences of move instructions. • Implement algorithms as programs using block-based programming (Scratch). • Scratch is a simple block-based programming language in which programs are built by snapping together code blocks • Give logical explanations for what programs will do when run. • To use a timer event to control a sequence • To create an animated scene • To program a set of traffic lights 	

	<ul style="list-style-type: none"> Computers can be programmed to run the same code repeatedly. This is called repetition. Using repetition makes programs quicker to write To know that computers need to receive information to work To know that input devices put digital information into the computer To know that information sent out of the computer is called an output 		
Autumn 2	<p>Computer Science Espresso Coding 2.0 - Block Coding Level 3 – Conditional events (selection)</p> <ul style="list-style-type: none"> Can read a programming sequence using algorithms (instructions) Make predictions about algorithms. Test and evaluate programs Use commands to control physical devices (e.g. outputs and sensors: automatic doors, traffic lights, intruder alarms Computer programmers often make mistakes, which they call bugs, and fixing these mistakes (debugging) is a big part of their work. 	<ul style="list-style-type: none"> Use a conditional event to program one or more than one object at a time (selection) Create a maze game Use commands to control physical devices Debug errors in program 	
Spring Term	<p>Information Technology - photography</p> <ul style="list-style-type: none"> Digital cameras and digital devices that take photographs are a common use of information technology beyond school. Digital cameras have a sensor. The sensor measures the amount of light and stores this information as a number. A pixel is a picture element - one of the small, square dots that make up a digital image. A camera roll is a directory on a tablet where all images are stored. The Photos app uses image recognition to work out what a photo is of. You should turn the screen off, close the laptop lid or turn over the tablet if you see an image you are concerned about. You should tell a teacher straight away.* Three techniques for sharp, clear images are: focus (on tablet tap the screen), keep the device steady, and ensure the subject is well lit (naturally or with flash). 	<ul style="list-style-type: none"> Search online photo collections (flickr - with safe search on, swiggle.org.uk) to find pictures related to a theme. Take digital photographs and use the tablet camera app. Review and reject/pick photos. Retrieve stored photographs on a digital device. Edit and enhance photographs, including cropping and straightening. Can identify which photos are real and which have been changed Follow the e-safety rules (see key knowledge) and tell a teacher if they see an image that concerns them. 	<p>Art - photography, exploring portrait and landscape orientation.</p>

	<ul style="list-style-type: none"> • A rule for taking a good photograph is to position the horizon one-third or two-thirds of the way up the photograph. • To use tools to change an image • Recognise that photos can be changed 		
Summer 1	<p>Digital Literacy – MS word</p> <ul style="list-style-type: none"> • To understand that MS Word can be used to type and compose text and use this effectively to create documents <p>E Safety – search engine – 1 lesson</p> <ul style="list-style-type: none"> • Google’s search engine lists web pages containing the keywords that were searched for. A Google custom search searches only a specific list of sites • Anyone can publish anything on the internet, so when using search engines there is a risk of accidentally finding content that can concern you. • You should turn your screen off if you see something online that you are concerned about. You should report the content to the teacher (if at school) or a parent (at home). 	<ul style="list-style-type: none"> • Can recognise common uses of information technology beyond school • To type using two hands • To select text in different ways • To use <ctrl> keyboard shortcuts • To align text • To use bullet points • To insert images by using text wrapping • To use a child appropriate search engine to research a specific topic • To identify how word order affects search results • To evaluate digital content (websites) 	
Summer 2	<p>Digital Literacy – PowerPoint</p> <ul style="list-style-type: none"> • To understand that MS PowerPoint can be used to create digital branching quizzes • To explore different ways children can communicate online • To discuss positive and negative aspects of online communication 	<ul style="list-style-type: none"> • To create a plan for a digital quiz • To insert new slides • To insert and format text boxes • To work with two different programs • To insert hyperlinks that link to other slides • To insert hyperlinks that link to web pages • To identify online communities I am a part of • To identify different forms of online communication 	
Online Safety Lessons (1 per half term)	<p>Online Safety</p> <ul style="list-style-type: none"> • To know what cyberbullying is and how to address it • To understand how websites use digital footprints to target advertising • To understand privacy settings • To discuss emails as a form of communication • To explore different ways children can communicate online • To discuss positive and negative aspects of online communication 	<ul style="list-style-type: none"> • To recognise cyberbullying and identify a safe person to tell if I encounter cyberbullying • To identify adverts online • To create strong passwords and explain why strong passwords are important • To identify an email or message that I should not open • To identify online communities I am a part of • To identify forms of online communication 	PSHE
<p>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</p>			

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.

