

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



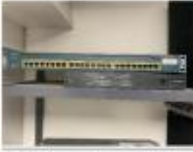


Searching

- 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	Computer Science Espresso Coding 2.0 - Block Coding Level 5 – Speed, direction and coordinates <ul style="list-style-type: none"> • Explore setting precise values in code to have some more control over the speed of an object. • Controlling an object’s properties, including its x and y coordinates on the screen. • Setting values and using coordinates in code to control movement and location 	<ul style="list-style-type: none"> • To program buttons to set or change the speed of an object • To use positive and negative values • Test and debug programs 	

<p>Autumn 2</p>	<p>Data Handling: Spreadsheets</p> <ul style="list-style-type: none"> To understand that MS Excel can be used to store, organise and calculate data Collect, analyse, evaluate and present data and information To understand and demonstrate the need for accuracy when creating databases. To relate and discuss the use of spreadsheets to situations in the wider world 	<ul style="list-style-type: none"> To enter data and formulas into a spreadsheet To present data based on calculations by inserting a graph To use formulas to calculate totals and averages To sort data by different criteria To create a formula to solve a specific problem (using figures and cell references) To replicate formulas over several cells To plan and calculate a spending budget 	
<p>Spring</p>	<p>Digital Literacy – Web Development</p> <ul style="list-style-type: none"> Name and describe the function of hardware used to connect computers. <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Ethernet port</p> </div> <div style="text-align: center;">  <p>Wi-Fi router</p> </div> <div style="text-align: center;">  <p>Network switch</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 10px;"> <div style="text-align: center;">  <p>Wi-Fi manager</p> </div> <div style="text-align: center;">  <p>School server</p> </div> </div> <ul style="list-style-type: none"> The Internet and the World Wide Web are different - the web is many pages of information linked together (the pages you see when you're at a device and you're online) and the internet is the global network of computers and local networks that the web works on, as well as what emails and files travel across. The Internet is the network (hardware, infrastructure and protocols) that connect computers all over the world, and the World Wide Web is the HTML and other documents (the web pages that you see) which are stored on web servers and connected via the internet. Both are about making connections, but the World Wide Web connects documents to similar documents stored on different computers, and the internet connects computers together 	<ul style="list-style-type: none"> Understand the hardware used to connect computers. Understand how the internet works and the difference between the internet and the web. View and edit the HTML for a web page. Create a web page that includes images. Add links to a web page. Use search technologies effectively, including to search for Creative Commons images and if needed to research information for a web page <p>Digital Day with Dan</p>	

	<p>across the world.</p> <ul style="list-style-type: none"> • Web pages are written and transmitted in HTML. • HTML (HyperText Markup Language) is the language used for the content and structure of a web page. The HTML tag adds a hyperlink and the HTML tag adds an image. • Explain how data is transmitted via the Internet (https://www.bbc.co.uk/bitesize/topics/z7wtb9q/articles/z3tbgk7) including how packets of data go through many different routers between the sender's switch and the recipient's one. • URL stands for uniform resource locator. The parts of a URL are the http (or https), the domain name and the directory name. (example) • HTTP stands for hypertext transfer protocol. HTTPS stands for hypertext transfer protocol secure 		
Summer 1	<p>Computer Science Espresso Coding 2.0 - Block Coding Level 5 – Random numbers and simulations</p> <ul style="list-style-type: none"> • Know that a simulation is a computer program which models something from real life • The value of a variable can be generated randomly in response to an event or at set time intervals. • Apply and consolidate their knowledge of randomised code, heading and conditional events 	<ul style="list-style-type: none"> • Create code that controls an object's speed • Create code that uses a random number generator to determine how and when an object moves • Create a ping pong simulation • Make a pinball game • Detect and correct errors in the game using logical reasoning 	
Summer 2	<p>Digital Literacy – Podcasts</p> <ul style="list-style-type: none"> • To understand that a podcast is a downloadable recording • Know how they are broadcast • To know what features make good quality audio content 	<ul style="list-style-type: none"> • Plan own podcast • Record own podcast using tablets • Construct a simple interview and record it • Insert appropriate sound effects • Suggest improvements to audio content 	
Online Safety Lessons (1 per half term)	<p>Online Safety</p> <ul style="list-style-type: none"> • Use technology safely, respectfully and responsibly • Recognise acceptable/ unacceptable behaviour • Know a range of ways to report concerns and inappropriate behaviour 	<ul style="list-style-type: none"> • To identify spam emails and what to do with them • To explain how false photographs can make people feel bad about themselves • To demonstrate ways to build positive and healthy online relationships and friendships 	
<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 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.</p>			

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.