



KS3 COMPUTING/ICT

INTENT

At our school we want pupils to be skilled learners of technology and not slaves to it. Technology is everywhere and will play a pivotal part in students' lives, therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators not consumers and our broad curriculum encompassing computer science, information technology and digital literacy reflects this. We want our pupils to understand that there is always a choice with using technology and as a school we utilise technology to model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. Building our knowledge in this subject will allow pupils to effectively demonstrate their learning through creative use of technology. We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. Our knowledge rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skilful computer scientists. We encourage staff to try and embed computing across the whole curriculum to make learning creative and accessible. We want our pupils to be fluent with a range of tools to best express their understanding and hope by Key Stage 4, children have the independence and confidence to choose the best tool to fulfil the task and challenge set by teachers.

IMPLEMENTATION

We have created a comprehensive progression document for staff to follow to best embed and cover every element of the computing curriculum. The knowledge/skills statements build year on year to deepen and challenge our learners.

IMPACT

We encourage our children to enjoy and value the curriculum we deliver. We will constantly ask the WHY behind their learning and not just the HOW. We want learners to discuss, reflect and appreciate the impact computing has on their learning, development, and well-being. Finding the right balance with technology is key to an effective education and a healthy lifestyle. We feel the way we implement computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils showcase, share, celebrate and publish their work will best show the impact of our curriculum. We also look for evidence through reviewing pupil's knowledge and skills digitally through observing learning regularly. Progress of our computing curriculum is demonstrated through outcomes and the record of coverage in the process of achieving these outcomes.

OVERVIEW

<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>
Intro to Computing	Netflix	Algorithms
Rules & Expectations	Types of networks	Flow diagrams
Intro to Inspire	Network Hardware	Abstraction & Decomposition
Using Email	Network Topologies	Sorting algorithms
Software Basics	Encryption	
Health & Safety	The Internet	
Online Safety	Cloud Computing	
Under The Hood	Binary	Pure Gym
What is a computer	Conversions	Analysing Products
Different Types of Computers	Conversion	Visualisation Diagram
The inside of a computer	Hex	Buttons
Input & Output devices	Units	Selecting Content
CPU & FDE	Addition	Primary & Secondary Research
Storage	Image rep	Finalising Your Product
Sealife Centre	Programming	Computer Ethics & Legislation
Logo	Edublocks - Input and Output	Legislation
Digital Advert- Planning	Selection	Digital Divide
Digital Advert	Iteration	Censorship
Leaflet		Technology & The Environment
Shop		Types of Software
Advert		Privacy
GCHQ	Comic Con	Programming
Threats to networks	Wed Design	Python - Selection & iteration
Preventing threats	Rocket Cake	Fundamentals of programming
Encryption		IDEs and Tools
NASA	Logic	GCHQ 2
Graphics	Binary	Threats
PPT	Gates	Vulnerabilities
Hyperlinks	Truth Tables	Pen testing
		People as weak points
Video Gaming	Programming	Programming
Operating Systems	BBC Basic	Python - Selection & iteration
Applications	Input and Output	Fundamentals of programming
Memory and Storage	Variables	IDEs and Tools

SCHEME OF LEARNING

This scheme is designed to be linear. Year 7 is designed to flow straight through into year 8 allowing progress to be shown over time.

Each lesson is complete with:

- **Start activity** – typically designed to be simply and straight forward (minimal printing etc)
- **Objectives** – with success criteria and bigger picture
- **Scenarios**
- **Activities** – with some differentiation built in (this is not designed to be perfect and will need to be adjusted to meet the needs of individual learners or groups of learners)
- **Plenary** – again, typically designed to be quick and easy

N.B. Some lessons include task sheets or exemplar work where necessary. Other PowerPoints include speaker notes to help guide teachers or non-specialists with the delivery of the lessons or tasks.

Projects were designed to be broken up allowing students to explore a range of software applications per term. Students then continuously revisit software applications gaining an in-depth understanding of their functions and features. Research suggests that students learn better when revisiting topics over and over as oppose to learning a topic for an extended period of time. This scheme of work follows the same strategy.

It is sometimes up the teacher to direct the learning and ensure that students are progressing each time they revisit an application but also demonstrate the ability to do skills over and over again.

For example, a student who demonstrates the ability to perform IF statements in Excel will be expected to complete this skill again the following term. This helps to reinforce learning.

YEAR 7

Project based activities with a heavy weighting of ICT. This is designed to provide students with the foundation to learn using a computer, learn digital literacy and learn basic office applications. Some projects do include a Computing topic which will be from the statutory national curriculum for KS3 Computing.

YEAR 8

The weighting of ICT to Computer Shifts to approx. 60:40 in favour of ICT. However, this curriculum includes other elements such as graphics and app development designed to

make the subject interesting and engaging as well as continuing to learn the fundamentals of ICT. Students will be introduced to Python Programming at the end of the year when they are more mature.

YEAR 9

Year 9 is designed to follow two pathways; GCSE Computer Science and AQA Unit Award Scheme (UAS). This will depend on the individual learner.

UAS is used to record learner achievement. It builds confidence and acts as a stepping stone towards further education, employment, training or independent living.

The projects are half termly based again and switch from Computer Science and iMedia throughout the year. The design of the lessons is different and constant advertising of each subject is encouraged to ensure students are in the best position to pick the right subject for them.

ASSESSMENT

Assessment is designed to be as easy as possible for the teacher but also as productive and constructive to the students as possible. Assessment sheets provided are designed to be printed with the TOP SHEET in booklet format.

These assessment booklets are to be used formatively, providing students with regular updates on the skills that they are mastering as well as highlighting skills that they are yet to develop.

The assessment sheets will begin to paint a picture of progress as students continue to meet skills lesson on lesson.

Assessments will be done at the end of each unit by the pupils completing a series of questions.

Special Educational Needs Disability (SEND) / Pupil Premium / Higher Attainers

Children may have work additional to and different from their peers in order to access the curriculum dependent upon their needs. As well as this, our school offers a demanding and varied curriculum, providing children with a range of opportunities in order for them to reach their full potential and consistently achieve highly from their starting points.

KS3 Computing

Knowledge of Computing



Grade	Level Descriptor	Emerging (-)	Developing (=)	Secure (+)
1	I can explain that computers need human instruction to operate.			
1	I can identify that all software on a digital device is programmed.			
1	I can identify different types of computers			
2	I can identify a range of input and output devices.			
2	I can identify that programs specify the function of a computer.			
2	I can identify when and why computers are used.			
3	I can identify the difference between hardware and software .			
3	I can identify the main functions of an operating system .			
3	I can identify the difference between physical, wireless and mobile networks .			
3	I can identify different parts of computer hardware and their job inside a computer .			
4	I can explain the Fetch-Execute Cycle .			
4	I can identify different operating systems and application software for computers.			
4	I can explain the roles of hardware and software within a			