SUBJECT: COMPUTING

Year Group	YEAR 8					
Rationale	The year 8 computing curriculum is designed to build resilient learners who have strong programming and problem solving skills with an enhanced knowledge of how computers and the hardware and software that makes them. It is also designed to develop the creative thinking that is required in a lot of areas of Computer Science when producing sophisticated and well-designed computer programs.					
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Topic/Unit	**How to stay secure?**	**Small Basic**	**Web Development**		**Hardware & Software**	**Computer Networks**
Knowledge	**Digital Literacy** This unit is designed to expand on the knowledge gained in Y7 around online dangers. As part of this unit pupils will be develop knowledge of a range of different security issues that they may face online that could make them vulnerable to data theft. Pupils will be able to recognise how to find accurate information online, how to reduce their risks to phishing and other social engineering attacks. In addition to knowledge of the different types of malicious code and how to prevent these.	**Computer Science** This unit is designed to build up on the know-ledge gained in the Y7 Coding unit. As part of this unit pupils will be developing their programming abilities further by creating programs in a text based language. As part of this unit pupils will be able to program solutions that solve a range of computational problems using techniques such as; Variables, constants, Input, output, selection, Iteration, and data structures(lists).	**Computer Science and Information Technology** This unit will be carried out across a full term. This unit is designed to give pupils the opportunity to under-take a creative project. In this unit pupils will develop their understanding of web design and develop knowledge of what makes a good website and how to code one. Pupils will develop knowledge of the scripting language HTML including what it is and how to structure the code to make a simple website. Additionally pupils will develop knowledge of how to re-use, revise and re-purpose digital artefacts for a given audience, with attention to trust-worthiness, design and usability.		**Computer Science, IT and Digital Literacy** The final unit of Y8 will bring the three different strands together. Pupils will develop knowledge of a range hardware and software components that make up computer systems, and how they communicate with one another and with other systems. Pupils will develop knowledge of the purpose of each internal component and will be able to recognise the difference between input and output Boolean logic (AND, OR & NOT)	**Computer Science** This unit is designed to expand on the knowledge that pupils have of computer networks from being users of the networks and from their experiences at KS2. In this unit pupils will be able to understand the clear difference between the internet and www, what the internet actually is, and how it works. In addition to developing knowledge of how mobile networks work, the impact that they have had on society. Final pupils will develop knowledge of how search engines working using Boolean.
Skills	The fundamental skills developed in this unit will be **analytical** skills when identifying the different types of security issues. Pupils will also develop their **research** skills as they investigate a range of different cyber-attacks. Additionally **ICT** and **presen-tation** skills will be developed as pupils use a range of software to present information in a more meaningful way.	**Programming** and **problem solving** skills. As pupils are identifying different code samples **analytical** skills will be developed in addition to **debugging** skills which will be developed through identifying and fixing errors in code. As pupils work through a range of challenges they will develop their **computational thinking** skills and **numeracy** as they program solutions	This unit focuses on two main skills **programming** and **creativity.** Programming skills are developed as pupils' code their own websites using HTML. As part of this unit pupils will develop their **design** skills as they start to add content and colour to their websites as they target it towards a given audience. In addition to this **numeracy** skills will be developed as pupils think about		**Communication and team work** skills will be developed through working in pairs to create and deliver a presentation. **Presentation and ICT** skills will be developed as pupils use a range of different ICT software to present information in a more formative way. **Computational thinking** skills will be developed as pupils develop understanding of how the different	In this unit there will be a big focus on developing **literacy and evaluation** skills through discussion and the production of written reports on key networking themes. In addition to this **computational thinking** skills will be developed as pupils carry out a range of searching tasks. Finally **communication, debating and oracy skills** will be developed through class discussion

		that use a range of arithmetic. **Resilience** and **metacognitive skills** will be enhanced throughout this unit.	proportions, ratios and percentages when designing and coding the website. In addition to this **analytical** and **evaluation** skills will be developed as pupils identify the positive and negative aspects of websites. Like all units that require coding **computational thinking**, **resilience** and **metacognitive** skills will be enhanced throughout this unit.	hardware and software elements work together linking this back to binary	and debate on key themes
Assess-ments	**Formative Practical:** Pupils will complete a presentation in Sway that will focus on a 3 key security threats, including what they are, how they happen and how to avoid them. **End of unit test**:- Summative test on the computer consisting of multiple choice and open-ended questions on the topic of e-safety, this will assess understanding of key terms, how to prevent different issues and assess the pupils ability to spot issues.	**Formative Practical**: Pupils will complete a programming project, they will be expected to code a solution for a given problem using a range of programming techniques. Feedback will be given on this and pupils will have the opportunity to improve the code. **End of unit test**: Summative test on the computer consisting of multiple choice and open-ended questions on programming techniques, evaluating code and debugging. This test will consist of 5 questions from how to stay secure unit.	**Formative Practical:** Pupils will complete a practical project where they will need to design and develop a webpage to match a given coding specification for a theme of their choice. This will assess pupils practical programming skills and their ability to design a professional looking web page for a given audience. Pupils will have the opportunity to gain peer and teacher feedback on this before getting a further opportunity to make improvements. **End of unit test:** Summative test on the computer consisting of multiple choice and open-ended questions on programming techniques, evaluating code and debugging. This test will also consist of 10 questions from the how to stay secure unit and the small basic unit.	**End of Year:** In this term pupils will complete the end of year assessment that will contain a range of open ended and multiple choice questions off the 4 topics studied throughout year 8 and some key questions from year 7 units. **Practical** – Pupils will produce a sway presentation to inform a technophobe about the different components of a computer systems and what the purpose of the components are.	**Formative:** Pupils will produced a short essay discussing the impact that computer networks have had on society. This will be assessed on their ability to discuss positives, negatives and give their own opinion in addition to quality of the written work. **End of unit test**: Summative test on the computer consisting of multiple choice and open-ended questions to check

Homework	Integration – Pupils asked to use their creative, design, digital literacy and literacy skills along with their knowledge of effective web searching to produce a leaflet on how to search the web effectively. **Preparation and Practice –** Pupils given the task to improve on their sway presentations based on teacher feedback and to use it as a tool to prepare and revise for their summative assessment.	**Practice –** Pupils given a Microsoft forms quiz consisting of a range of basic programming questions to practice and aid retention. **Practice and Application –** Pupils given a debugging activity where they will be provided with a piece of code that they need to identify errors from and suggest fixes. **Preparation and Practice –** Pupils given the task to revise for their end of topic summative assessment. Suggested revision strategies provided to pupils and a knowledge organiser to aid revision.	Integration – Pupils asked to use their creative, design, digital literacy and literacy skills along with their knowledge of effective web design to produce a design portfolio to present their final web design plans. **Preparation and Practice –** Pupils given the task to revise for their end of topic summative assessment. Suggested revision strategies provided to pupils and a knowledge organiser to aid revision.	**Preparation and Practice –** Pupils given the task to revise for their end of topic summative assessment. Suggested revision strategies provided to pupils and a knowledge organiser to aid revision.	**Preparation and Practice –** Pupils given the task to revise for their end of topic summative assessment. Suggested revision strategies provided to pupils and a knowledge organiser to aid revision.