Subject: Computing

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Key content – knowledge and skills	National Curriculum focus
Pupils will be introduced to e safety and understand the dangers of the internet as well as the benefits. Understanding computers and how they work and communicate with each other. Also understanding how the internal components work inside of a computer. Students will understand what databases are and how they work in real life. They will design create improve and evaluate a database which they will create for a purpose. Students will take a look at websites and analyse, Design, Create, Evaluate them. They will also be introduced to HTML coding when creating webpages and understand how Website have evolved with the interent. Students will create, edit sound tracks and create audio for a specific scenario which will help them understand the target audience and purpose. They will be learn this through a specialist software designed to create music.	• design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems • understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem • understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems • understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits • undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users • understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns
Key content – knowledge and skills	**National Curriculum focus**

Key assessment points
Pupils will be assessed over 5 topics in the academic year. One piece of work will be a project (Formative Assessment and there will be a summative assessment at the end of each topic.

Christian ethos
Pupils will be given the oppurtunity to see links to christain ethos throughout the academic year. E – Safety will be taught and how you should conduct your self on social media with the core Christian values. This will be a common theme throughout the various topics students cover.

British values
British values will be taught discretly through out the academic year. When the opportunity arises throughout the topics. Mutual respect and tolerance of people on Social Media. Rule of law will be taught throughout the different topics and how they are applied in business and for individuals. Furthermore how individuals, government and companies use databases, websites to inform individuals of

Year 8
The connected Curriculum
E-Safety - E Safety – This has many links with PSHE. Students look at the mental impact Social Media (SM) can have on an individual it also looks at the financial impact of SM on an individual company alongside looking at the well being of an individual when it comes to using technology, a particular focus on dangers online and steps that can be taken to prevent these dangers (cyberbullying, online grooming, sexting. **Understanding how computes work** – Links to maths how devices communicate through binary. How to calculate binary and denary – The use of hexadecimal

Sound – Students explore how analogue sound works and how digital sound waves are created in a computer system – Linked in with music and how sample rates can help increase the sound quality.

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Week	Month	Learning Intentions and/or Key Questions
Aut1-1	September	**Topic 1 (E- Safety)**
Aut1-2		• Understand the different threats of the Internet
Aut1-3		• Understanding how to use Social Media responsibily
Aut1-4		• To create a poster on the above (to be displayed in L&E Corridor) **(Formative Assessment)**
Aut1-5	October	• **End of unit assessment – Summative**
Aut1-6		
Aut1-7		**Topic 2 (Understanding Computers)**
		• To explore difference between hardware and software.
		• To investigate RAM and ROM and CPU memory
		• Understanding binary data representation
		• Investigate different types of storage devices **(Formative assessment)**
		Half term holiday
Aut2-1	November	• Investigate development of communication
Aut2-2		• **End of Unit Assessment (Summative)**
Aut2-3		
Aut2-4		**Topic 3 Databases**
Aut2-5		• Investigate use of databases in society/commercially
Aut2-6	December	• Create a database
Aut2-7		• Investigate and apply validation techniques to make the database more accurate
		• Refine and analyse data and information using simple & complex search techniques
		• Understand how and why queries should be used to refine search results **(Formative Assessment)**
		Christmas holiday
Spr1-1	January	• Create a form with macros buttons to help users navigate and apply skills using visual basic to automate tasks.
Spr1-2		
Spr1-3		• Create a reports for 2 different types of end users, customise it using a range of features.
Spr1-4		• Investigate applying functions to a report for advanced users.
Spr1-5		• Analyse, interrogate and report on range of given databases
Spr1-6	February	• Evaluation of the project
		• **End of Unit Assessment (Summative)**
		Half term holiday
Spr2-1		**Topic 4 – Web Design**
Spr2-2		• Investigate WWW structure
Spr2-3	March	• Understand that the WWW is a huge collection of websites all over the world
Spr2-4		• Understand what HTML is and what it is used for
Spr2-5		• Investigate features of Dreamweaver
Spr2-6		• Identify website components
		• Create basic HTML tags using a text editor to create a page that can be viewed in a browser **(Formative Assessment)**
	April	**Easter holiday**
Sum1-1		• Identify website components

Sum1-2	May	• Identify the audience/ purpose for your website • Locate components for your website • Investigate features of Dreamweaver • Create a website • Evaluate websites • Improve your website • **End of Unit Assessment**
Sum1-3		
Sum1-4		
Sum1-5		
Sum1-6		
	June	**Half term holiday**

Sum2-1		**Topic 5 – Sound**
		    • Understanding sound elements and file types
		    • Manipulating multiple sound tracks and investigate industry roles
		    • Manipulating multiple sound tracks
		    • Manipulating multiple sound files
		    • Identify sound files
		    • Create an advert is suitable for audience and purpose **(Formative Assessment)**
		    • Evaluate sound file created and enhance
		    • **Summative Assessment (end of unit)**

Sum2-2		
Sum2-3		
Sum2-4		
Sum2-5	July	
Sum2-6		
Sum2-7		

Subject:
Unit:
Medium-term plan (1)

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Week	Learning Intentions/Key Questions	Learning goals for students/ content to cover	Suggested activities and differentiation	Resources needed
1	To explore difference between hardware and software.	Name 5 pieces of software What is hardware/ software What is input/output	• Identify input, output and storage • Name 5 pieces of software • Explain the difference between hardware and software • Suggest appropriate input and output devices for a given scenario Worksheets will be at Lower, Middle, Higher with vairied information. Less information for the higer, more information for the lower.	L1 ppt Worksheet 1 Worksheet 2
2	To investigate RAM and ROM and CPU memory What are the components of a computer? What is RAM – What does it do? What is ROM – What does it do? What is memory? What is the difference between a hard disk and memory? What is a processor?	• State examples of input, processing, output • Explain difference between RAM and ROM • Explain the difference inmain memory and permeant storage	• Students will find examples of devices that allow information to go inside of a computer • Students research what RAM and ROM is and the difference between the two. • Students will take a look at the different types of memory	L2 ppt Worksheet 3 Worksheet 4

3-4	Understanding binary data representation What is binary? Who understands Binary? What do 0 and 1 represent to a computer? How many Gb in a Terabyte? How many bytes in a Megabyte? How are characters represented in Binary? How many characters are there on your keyboard? How many bits would be needed to represent up to 128 characters?	• Understand why all data is represented in binary in a computer • Define a Bit, Byte, Kb, Mb and Gb • Convert integers to binary numbers • Convert binary numbers to integers • Show how characters can be represented using ASCII	• Students to understand know how computers use 1s and 0s to convert • Understand the converision rates of sizes in data storage • Students to create • Students to decode ASCII code in to plain text.	L3 ppt Worksheet 5 + Worksheet 6
5-6	Investigate different types of storage devices Name different types of devices that store information? How many Gb in your USB memory stick? How many Gb memory in your mobile phone? How many Megapixels in a digital camera photo?	Investigate independently on 7 different types of storage devices Draw the device you are researching.	Students are to fill in a table with different types of storage advantages/disadvantages of device, Maximum storage reliability and cost of device. L M H for differentiation. For Lower end there are prefilled boxes. For higher there is no boxes filled and there is extended work for independent research.	L4 ppt Worksheet 7
7	Assessment week		Students to have a summative assessment on the previous weeks learning.	Test will be online ppt has been provided with a link