Long Term Mapping 2025-2026

KS3 – Year 7 – Computer Science

Subject Intent/ Aims:

At St Philip Howard the Computer Science department provides a high-quality computing education that challenges the pupils to use an apply computational thinking and creativity to understand how they can have impact in the wider world through Computer Science.

The core aspects of the computer science curriculum are to support the pupils to develop an understanding of key computational principles; allowing them to learn how digital computer systems work and put this knowledge to use through the progressive use of programming.

The subject's intent is for pupils to build on the knowledge and skills each year as they progress from year 7 to year 11; with the overall aim being that the pupils will leave the school knowing and appreciating the opportunity they were given to learn and develop in an engaging subject that has a huge impact of the wider world.
As well as the Computer Science content delivered through the curriculum there is also an intention to ensure that pupils are given the chance to become digitally literate and be able to express themselves through the key aspects of information and communication technology.

The Computer Science department has a programme of study the follows the aims of the national curriculum. Within this, pupils are given the opportunity to learn how to understand and apply basic principles of computer science, analyse problems whilst confidently providing solutions, and acquire competency in using information and communication technology.

The overall intention of the computer science department at St Philip Howard to provide the pupils with a safe and engaging learning environment, that will foster a love for learning computer science and acquire a wide range of knowledge and skills that could have a huge benefit on their lives in and out of school.

In year 7 from lent onwards topics will be interleaved due to having a non-specialist delivering the material.

Key Concepts - Advent		Key Concepts – Lent		Key Concepts - Pentecost	
• Getting to know the network. • Developing office skills		• Understanding how computers work • Understanding the basic function on spreadsheets		• Introduction into Programming • Preparing for assessments	
National Curriculum Coverage		**National Curriculum Coverage**		**National Curriculum Coverage**	
✓ Undertake creative projects that involve selecting, using, and combining multiple applications. ✓ Understand a range of ways to use technology ✓ Safely, respectfully, responsibly and securely.		✓ Understand how instructions are stored and executed within a computer system. ✓ Understand how data of various types can be represented and manipulated digitally, in the form of binary digits. ✓ Undertake creative projects that involve selecting, using, and combining multiple applications. ✓ Create, reuse, revise and repurpose digital items for a given audience, with attention to trustworthiness, design and usability		✓ Use programming languages, at least one of which is textual, to solve a variety of computational problems. ✓ Design and develop modular programs that use procedures or functions	
Components		**Components**		**Components**	
Term 1	*Term 2*	*Term 1*	*Term 2*	*Term 1*	*Term 2*
• Know how to use the school IT systems. • Know how to stay safe online.	• Know how to use the main features if word processing software. • Know how to use the main features of presentation software.	• Know how computers work. • Know how to convert binary numbers.	• Know how to use spreadsheet software to collect, analyses and present data.	• To know how to use a graphical based programming language to solve computational problems. • To know how to create algorithms	• To learn how to revise and revisit content from the whole year.
HO Knowledge		**HO Knowledge**		**HO Knowledge**	
Term 1	*Term 2*	*Term 1*	*Term 2*	*Term 1*	*Term 2*
❖ Can evaluate the most important aspects of the school computer systems. ❖ Can analyze the dangers of using technology online. ❖ Can suggest a range of solutions to potential e-safety issues.	❖ Can determine what the most important features of a word document are and apply them to any situation. ❖ Can combine multiple skills to produce a well-presented presentation.	❖ Can describe how to convert between binary and denary. ❖ Can solve binary conversion questions.	❖ Can construct different spreadsheets. ❖ Can examine a spreadsheet based on different scenarios. ❖ Can make judgements on the data stored in a spreadsheet.	❖ Can organize instructions. ❖ Can experiment with different programming features in scratch to solve problems. ❖ Can judge the efficiency of blocks of code being used in scratch.	❖ Can recognize previous learning. ❖ Can schedule revision and prep for exams. ❖ Can execute revision developed in lessons through the exam.

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St. PHILIP HOWARD
CATHOLIC VOLUNTARY ACADEMY

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Composite Skills		Composite Skills		Composite Skills	
Term 1	*Term 2*	*Term 1*	*Term 2*	*Term 1*	*Term 2*

➤ Logging in to all school IT systems.
➤ Creating secure passwords.
➤ How to create and organize a folder system.
➤ The dangers of being online.
➤ Methods to stay safe online.
➤ The pros and cons of social media.
	➤ Produce word processing documents:
	   ○ Fundamentals
	   ○ Formatting
	   ○ Table tools
	➤ Produce PowerPoint presentations:
	   ○ Fundamentals
	   ○ Design considerations
	   ○ Use of text.
	   ○ Use of Images.
	   ○ Use of effects.
		➤ Define what computer science is.
		➤ State what computer understands.
		➤ Crack codes using binary numbers.
		➤ To apply the binary conversion table.
		➤ Convert between denary and binary numbers.
			➤ State how spreadsheets are used in society.
			➤ Read and understand data from a spreadsheet.
			➤ Analyze problem based on data in a spreadsheet.
			➤ The fundamentals of spreadsheets.
			➤ How to apply formatting techniques to enhance how a spreadsheet is displayed.
			➤ How to add data to a spreadsheet.
				➤ Can write a set of instructions.
				➤ Can follow a set of instructions.
				➤ Can identify issues within a set of instructions.
				➤ State the difference between text and graphical programming.
				➤ Label the interface of the IDE
				➤ Describe the functions of the IDE
				➤ Plan an algorithm for a game.
				➤ Order instructions together to form a basic game.
				➤ Use variables with a game
				➤ Be able to apply selection to a program
				➤ Be able to include iteration in a program
					➤ Retrieve, revisit and recal knowledge from the previous topics.
					➤ Apply revision techniques.
					➤ Complete exam.

Final composition/ Deliberate Practice		Final composition/ Deliberate Practice		Final composition/ Deliberate Practice	
Term 1	*Term 2*	*Term 1*	*Term 2*	*Term 1*	*Term 2*
o Basic skills exam at the end of the whole term.	o Presentation about the students.	o Pupils will complete a binary exam paper.	o Pupils will complete a practical assessment where they must create analyze data on a spreadsheet.	o Pupils will develop small games and evaluate their code.	o Pupil will prepare and complete the end of year exam
Assessment/s (Formative and Summative)		**Assessment/s (Formative and Summative)**		**Assessment/s (Formative and Summative)**	
• Key terms tests • Multiple choice quizzes • Questioning • Basic skills exams		• Key terms tests • Multiple choice quizzes • Questioning		• Key terms tests • Multiple choice quizzes • Questioning • End of Year Exam	

Key Terms				Key Terms				Key Terms		
Term 1		*Term 2*		*Term 1*		*Term 2*		*Term 1*		*Term 2*
Monitor	Folders	Save	Header and	Binary	Spreadsheet	Colour coding		Programming	Variable	All terms from previous
Keyboard	File path	Save As	Footer	Denary	Excel	Technique		Graphical	Sequence	modules.
Log In	Sticky keys	Copy	Tables	Digit	Data	Formatting		Instructions	Selection	
Username	Social media	Paste	Table Tools	Bit	Information	Bold		Algorithms	Iteration	
Password	E-safety	Format	Merge	Byte	Calculations	Borders		Scratch	Loop	
Network	Cyberbullying	Bold	Recent	Instructions	Cell	Styles		IDE	Background	
(Home and	Trolling	Italic	documents	Nibble	Row	Merge		Stage	Events	
Student Share)	School policy	Underline	Undo	Converting	Analyse	Input		Sprites	Blocks	
VLE		Font	Animations	Code	Cell reference			Backdrops	Drag	
		Alignment	Transitions	Addition	Data			Scripts	Motion	
			Design	Character	Collection			Costumes	Control	
				Subtraction						

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Literacy/ Numeracy/ Cross-Curricular Links		Literacy/ Numeracy/ Cross-Curricular Links		Literacy/ Numeracy/ Cross-Curricular Links	
Term 1	*Term 2*	*Term 1*	*Term 2*	*Term 1*	*Term 2*
Literacy There will be plenty of opportunity for literacy in this topic, especially in the e-safety topics where students will be required to answer questions. **Numeracy** There is limited need for numeracy in this topic; there is a need for students understand password lengths. **Cross-Curricular** PSHE is defiantly a subject that is used within this topic, as the students learn about the danger of online use and how to be protective.	**Literacy** Plenty of opportunity to use literacy, especially in planning tasks. **Numeracy** Limited numeracy use. **Cross-Curricular** Developing the learning in the module allows the students to use them across all the subjects on the curriculum.	**Literacy** The main literacy will come from the students learning new terms within the topic. Key terms test will help with this. **Numeracy** The focus in this topic will be for students to use their numeracy skills to convert between denary and binary. **Cross-Curricular** Math's will be the primary cross-curricular subject.	**Literacy** The main literacy will come from the students learning new terms within the topic. Key terms test will help with this. **Numeracy** Pupils will touch on numeracy briefly in this topic, as spreadsheets deals with numbers and data. **Cross-Curricular** Math's as numeracy will be used.	**Literacy** The main literacy will come from the students learning new terms within the topic. Key terms test will help with this. **Numeracy** Pupils will certainly use numeracy within this topic. There will be many moments where students will have to use numeracy within blocks of code. **Cross-Curricular** Math's due to the numeracy needed.	**Literacy** **Numeracy** **Cross-Curricular** All revisited through revision sessions.

SMSC	British Value	RSHE
✓ *There will be multiple opportunities for students develop spiritually; being creative in their learning with the different systems that they will create and programs, they will cultivate.* ✓ *The high expectations placed on the student from the school and department mean that pupils will regularly be made aware of the right and wrong morally; especially through the online safety lessons.* ✓ *Pupils are expect to share the views morally on the different topics but also show respect and appreciate others in the classroom.* ✓ *The majority of topics will give the students opportunity to develop their social skills, from presenting presentations to working in group tasks.*	✓ *Students will be taught the legal implications of using the internet and social media.* ✓ *Students will be taught to fully appreciate other students viewpoints and the importance of being respectful when online as a digital citizen.* ✓ *Students will be taught the importance of selecting valid information from reliable sources for any presentation tasks that they do.* ✓ *Students are taught how to contribute to life in modern Britain by learning about the history of computing.* ✓ *Students will learning how to display British Values to use the internet and social media positively.*	✓ *The students will be taught about how to be safe online and the dangers.* ✓ *The students will be made aware of online relationships and the sexual issues that may arise.* ✓ *The students will be regularly conversed on their physical and mental health when overusing computers.*

Adaptive Curriculum Content Basic skills	Adaptive Curriculum Content Binary Representation	Adaptive Curriculum Content Introduction to programming

✓ Lesson job lists.
✓ Adapted handouts for practical tasks.
    o Full versions
    o Partially complete
✓ Extended time provided for certain students.
✓ The end of topic online exam modified to reflect the topics covered by certain classes and ability levels.
	✓ Lesson job lists.
	✓ Adapted handouts.
	✓ Not all parts of binary (math's) with be covered by all groups based on numeracy ability.
	✓ Calculators will be used for some students.
	✓ The end of topic online exam modified to reflect the topics covered by certain classes and ability levels.
		✓ Lesson job lists.
		✓ Adapted handouts.
		✓ Most students (classes) will be introduced to text-based programming by the end of topic.
		✓ Some students (classes) will stay on scratch throughout the topic.

Adaptive Implementation Practices

This is a summary of the practices used throughout the curriculum.

Differentiated Instruction: Tailoring class instructions to meet the diverse needs of students by providing varied materials, activities, and assessments.	*Scaffolded Instruction:* Break down complex concepts into smaller, more manageable steps, providing additional support and guidance as students' progress through the material.	*Formative Assessment:* Use ongoing assessments, such as quizzes, discussions, and peer reviews, to continuously monitor student progress and provide timely feedback.	*Self-Paced Learning Job Lists:* Create self-paced lesson job lists or learning paths that allow students to progress through the lessons at their own speed, enabling them to take ownership of their learning process.