



& Creative I Media Learning Journey



Intent · Implementation · Impact

Curriculum Intent

Computers are firmly embedded in our modern-day society. The vast number of objects that we use and interact with in our homes, places or work or study, and the places where we socialise will, typically, in some way, contain a form of computer. Gone are the days where we needed a keyboard, mouse and monitor to interact with computers; we now have computers in our pockets and bags in the form of smartphones, on our wrists in the form of smartwatches, and on our tables and shelves in the form of smart-speakers. Computers are here to stay – our interaction with them should only increase.

Computing is multifaceted – we could consider it to have three main components in Hardware, Software and Data, with each of the components having further subcomponents that relate to the user, the administrator, and the creator - the Computer Science curriculum at Parkside has been designed to allow students to get a well-rounded understanding these different aspects and components of computing. It is important for students to understand that computers aren't just boxes that operate by some unknown power.

Parkside Computer Science curriculum ensures that school students are initially introduced to the fundementals of computing, investigating and learning about basic office tools, email, and the positives and negatives of the World Wide Web. The students will then go onto taking their first steps into programming with languages such as Scratch and Python – an area of computing that will allow the development of logical thinking to create things such as algorithms that handle everyday problems and will be the basis of the developed computer code so important to the Programming discipline.

As the curriculum develops, aspects of computing that relate to things such as computer graphics and HTML development are introduced. These aspects of the Computer Science curriculum allow the students to understand the user interface and its need to be engaging for the user.

Data is introduced into the curriculum initially in terms of how it can be manipulated and presented in spreadsheets but then in terms of how it can be stored within databases and how it can be transported within data networks.

Hardware and software are learnt about in topics within the curriculum that relates to components of a computers system.

There is a cross curricular aspect to the Parkside Computer Science curriculum. For example, an understanding of switches introduced in Technology is key to understanding how a computer processes and stores information, understanding of number systems in Mathematics helps computing students appreciate how computers utilise binary and hexadecimal, and a good grasp of English grammar and the ability to learn new languages in MFL assist students when learning computing programming. The school is committed to providing its students an appreciation of all of the various aspects of computer science so that they can work towards being expert participants in this ever-growing part of our lives and world.

K Flowers – Teacher of Computer Science and Creative Imedia





Curriculum Implementation

The Computer Science learning journey is currently three years, consisting of learning in Y7, 8 &9, with Creative Imedia offered for year 10 & 11 recently. We are planning as a school to enhance the curriculum and broaden to learning over 5 years as we develop this curriculum area in our school.

At the initial stages of the learning journey students will develop their understanding of Computing fundamentals and will acquire skills to be able to develop their computer science literacy. There are three distinct units of Computer Science, understanding software, developing knowledge of hardware and architecture and understanding data. As the curriculum progresses students will have the opportunity to see how these distinct units interleave and support holistic understanding of the use of computers. In 2021/22, year 7 and 8 both followed the initial stages of the learning journey to support missed learning time due to COVID restrictions and ensure that they are equipped an elementary understanding of the subject area before progressing onto more complex content. As the years progress units of learning have been developed to ensure all years have a variety of topics to allow transition between prior learning and progression pathways.

The planned curriculum within year 9 is structured to support transition into GCSE learning of Creative Imedia. The learning journey in year 9 targets key components that will be essential in years 10 and 11; students will develop their understanding of coding (in different computer programming languages), computer architecture and data (its structure, how it is stored, and how it is transported).

Disciplinary literacy and the knowledge of specialised vocabulary which are used in Computer Science is essential to supporting students' academic and theoretical knowledge of the subject. Computer Science literacy is important to all aspects of the subject, for example when students are learning to use computer programming, they must follow grammatical rules for script and syntax to ensure that the software accurately understands the intended program request. The development of subject specific literacy will also support pupils' ability to express their knowledge of Computer Science and the theoretical understanding of the subject. We know that without competent and confident literacy skills, our pupils cannot flourish in the world; it is therefore our duty to prioritise the vital acquisition of high-quality communication skills within all areas of the curriculum.

Embedded within the computer science journey, is teaching student about diversity within the subject area. It is essential to us that students understand the breadths of progression pathways with computing and the wide variety of people within the industry. To develop the students' understanding of diversity within computing, we build upon their cultural capital by teaching them about the emerging democracy of the computing industry. We promote inclusivity in our curriculum through our visual displays in the classroom and through additional content which supports students' broad and balanced knowledge of computer science.

The development of computing means that the use of technology is central to the majority of job roles regardless of whether they are seen as traditional computing role or an alternative vocation where students would be expected to understand computing and ICT. The computer science learning journey is structured to ensure that students are equipped as confident and competent digital users.





Curriculum Impact

The impact of our Computer Science Curriculum Learning Journey is defined through the accessibility pupils have to developing knowledge and the application of skills. This is determined through a number of measures:

- ✓ Formative Reporting of Pupil Progress will take place through assessments each lesson, and include pupil questioning, discussion, the completion of differentiated questions for each learning objective and the completion of homework.
- Summative Reporting of Pupil Progress will take place through topic assessments and assessment of student's practical outcomes on the computer at the end of each topic. Parents/Carers receive a report following each mid and end point assessment to understand their child's current depth of knowledge and the support they need to further develop this knowledge both inside and outside of school.
- ✓ In-lesson learning, participation and belonging is measured by continually monitoring pupil punctuality to lessons, rewards and sanctions, behaviour referrals, pupil voice and work-scrutiny. Our hope is that by continued positivity in these areas, our Computer Science Curriculum Learning Journey is accessible and will, therefore, positively impact knowledge growth and skill application.
- Knowledge and understanding of the key concepts and skills. Pupils will be able to use a computer with confidence. Pupils will develop their understanding of how computers can be used to present information and how to use the internet to find information. Over the course of the learning journey, pupils will develop their skills in data manipulation and using computer science for coding. All pupils will understand the vocational and academic opportunities available to them in the field of computer Science

Computer science is currently delivered Y7-9. Parkside is working with pupils in these year groups to develop their understanding of Computing, allowing the KS4 Progression pathway to Creative Imedia from 2022. At KS4 the GCSE Computer Science should be offered in the near future working with the pupils and where it is viable to enable this subject to be delivered as a KS4 option in the future.





Learning Journey overview

Year 7: Topic summary

How we interleave topics to enable pupils to build and recall knowledge.

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			KS3 Yea	ır 7 Com	puting -	Interlea	aving Ap	proach		
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r.7	Uni	• 1		Un	it 2		Un	it 3		
¥e	- Oni			lle	ie 1		Linit 1	Linit 2		
			1	01		1	OnitI	Unit 2	1	
	Uni	t 4		Un	it 5					
	Unit 1	Unit 2	1	Unit 1	Unit 2					
	Unit 3			Unit 3	Unit 4					
	Year 7									
			Ur	nit 1 Introductio	n to Computing	5				
Unit 1	Unit 1 Memory Recall		н	1112	111213	11121314	11121314	1112131415	111213141516	
	Lesson Content	L1 Folder & file management	L2. Email	L3. Phishing	L4. Diffice 365	L5. E-safety	L6. Cyber Bullying	L7. Searching the VWV	L7. Assessment	
							-			
					Un	it 2 Flowol				
Unit 2	Unit 2 Memory Recall		и	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5	L2 L3	L1 L2 L3 L4 L5 L6 L7	L1 L2 L3 L4 L5 L8 L8 Unit 1
	Lesson Content	El Introduction to Flow Charts	L2. Pelican crossing	L3. Robots	L4. School bus	L5. Cot mobile	L6. Variables	L7. train set 1	L8. Train set 2	L.9 Assessment
								-		
					Uni	t 3 Scratch				
init 3	Unit 3 Memory Recall		и	1112	111213	11121314	L1L2L3L4L5	111213141516	L1 L2 L3 L4 L5 L6 L7	
-	Lesson Content	L1.Sprites	12. Movement	L3. Co-Ordinates	L4. Variables	LS. Catch the Ball	L& Duck Shoot	L7. Helicopter	Unit 1 & 2 LS Assessment	
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				Unit 4	Spreadsheet M	lodelling				
14 4	Unit 1 Memory Recall		u	L1 L2	L1 L2 L3	11121314	L1 L2 L3 L4 L6	LI L2 L3 L4 L5 L6	LT L2 L3 L4 L6 L6 L7	
ž	Lesson Content	L1 Spreadsheet Basics	L2.IF statements	L3. What F	L4. Vicokups	L5. Absolute Cells	L8. Named ranges	L7. Spreadsheet functions	L8. Assessment	
				Unit 5 Mi	cro Bits				1	
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Ť	Unit 5 Memory Recall		LI	L1L2	L11213	L1L2L3L4	L1L2L3L4L5	111213141516		PARKSIDE
	Lesson Content	L1 Micro Bit introduction	L2 Dice Roll	L3.Compass	L4. Games	L5.Pong	L6. Catch the Ball	L7. Assessment		







Year 7 Unit 1 Introduction to Computing



This unit is an introduction to Computing at Parkside Community School. Students will be introduced to different components to equip them with the basic knowledge and skills when working with Computers. Students begin by looking at file management and security. Students will know how to use the school email system and Office 365 which all students have access to at home. Students will look at online dangers and understand how to protect themselves online and how to effectivity search the Internet and understand that not all information on the Web is accurate or truthful.

Unit 2 Flowol

Flowol 4

This unit introduces students to computer programming logic using the software Flowol which is a Flow chart programming language. This unit enables students to create their own simulations using the software Flowol. Each lesson builds on the previous lessons work to create a fully playable and interactive game. Students arrive at Parkside with very little previous experience of using Flow chart and logical programming.

Unit 3 Scratch



This unit introduces students to computer programming using the software Scratch which is a block-based visual programming language. This unit enables students to create their own "Super Mario" game using the software Scratch. Each lesson builds on the previous lessons work to create a fully playable and interactive game. Students arrive at Parkside with very little previous experience of using Scratch to program.





Microsoft Excel

This is a practical, skills-based unit covering the principles of creating and formatting basic spreadsheets to produce and use simple computer models. It is suitable for pupils who have a basic knowledge of spreadsheets including cell references, simple formulae and formatting, although these topics are revised in the first lesson, making it also suitable for pupils new to spreadsheets due to the inconsistencies of ability from KS2.

The unit is centred around creating a financial model for a Bumper cars company. Students start by looking at different types of model and then use basic spreadsheet techniques to create. The model is then extended to include sales from merchandising, with the introduction of "what if" scenarios. Spreadsheet features covered include SUM, MAX, IF and COUNTIF functions, cell naming for absolute referencing, conditional formatting, validation, charting and simple macros. Microsoft Excel software is used in this unit.

<u>Unit 5 Micro bits</u>



This is a practical, skills-based unit covering the principles of creating and formatting basic coding, to produce and use simple computer models. Key concepts students can know about the different types of programming structures, selection sequence and iteration for the starting then building and developing this knowledge into more complex programs. This unit is directly linked to BBC : MICROBIT which is free website set up by the BBC to encourage students in simple and basic programming, this is aimed at year 7 students throughout the country . Procedural knowledge will also be valued with students reading websites, practicing numeracy skills within programming, decision making and inferring from texts and other support materials. We want students to be curious investigators who work from a concrete knowledge base as they seek to make sense of increasingly unfamiliar contexts. Students will use a learning portfolio to evidence the tasks they have completed throughout this unit.







Year 8: Topic summary

How we interleave topics to enable pupils to build and recall knowledge.



		Unit 1 Spreadsheet Modelling										
Unit 1	Unit 1 Memory Recall		и	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5	L1 L2 L3 L4 L5 L6	L1 L2 L3 L4 L5 L6 L7			
	Lesson Content	L1. Spreadsheet Basics	L2. IF statements	L3. What If	L4. Vlookups	L5. Absolute Cells	L6. Named ranges	L7. Spreadsheet functions	L8. Assessment			

	- 1	Unit 2 Understanding Computers										
]	~ [Memory recall	Memory recall									
	ij	Unit 2 Memory Recall	nit 2 Memory Recall L1 L1 L1 L2 L1 L2 L3 L4 L1 L2 L3 L4 L5 L1 L2 L3 L4 L5 L1 L2 L3 L4									
		Lesson Content	L1. Input, Output and Storage Devices	L2. Inside a computer	L3. Binary to Denary	L4. Binary Addition	L5. Storage Devices	L6. New technology	L8. Assessment			

Unit 3					Unit 3 Edublo	ks			
	Memory recall				Y7 Unit 2 Scratch				Unit 1& 2
	Unit 3 Memory Recall		ហ	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5	L1 L2 L3 L4 L5 L6	L1 L2 L3 L4 L5 L6 L7
	Lesson Content	L1. Introduction and Interface	L2. Sequence of Code	L3. User input	L4. Variables	L5. Functions	L6. Extended Project	L7. Extended Project	L8. Assessment

Unit 4		Unit 4 2D Animation									
	Memory recall			١	17 Unit 3 Using Fireworl	15			Unit 1& 2		
	Unit 4 Memory Recall		LI	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5	L1 L2 L3 L4 L5 L6	L1 L2 L3 L4 L5 L6 L7		
	Lesson Content	L1. Stick Figures	L2. Stick People	L3. Stick Animals	L4. Custom Animals	L5. Backgrounds	L6. Library Characters	L7. 2D motion	L8. Assessment		

		Unit 5 Introduction to Python								
9	Memory recall			Y7 Unit 2 Scratch				Unit 1& 2		
ii i	Unit 6 Memory Recall		អ	L1 L2	L1 L2 L1 L2 L3 L1 L2 L3 L4			L1 L2 L3 L4 L5 L6 L7		
2	Jaccon Content	L1. First Steps in	L2. Crunching	13 Crossroads	L4 Breaks	IF David and David	L6. Pulling all code	18 Accordment	1	
		Python	numbers	ED. Crossroads	E4. Draitciles	Lo. Houlid alid Houlid	together	EO. Assessment		

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Year 8 **Unit 1 Spreadsheet Modelling**

Microsoft Excel This is a practical, skills-based unit covering the principles of creating and advanced formatting spreadsheets to produce and use simple computer models. It is suitable for pupils who have a basic knowledge of spreadsheets (from year 7) including cell references, simple formulae and formatting, although these topics spreadsheets (from year 7) including cell references, simple formulae and formatting, although these topics are revised in the first lesson, making it also suitable for pupils new to spreadsheets.

The unit is centred around a variety of skills linking to job and career opportunities which the students may wish to pursue when leaving the school. Students start by looking at basic formatting, moving on to If Statements and costing for a food chain restaurant. Students also cover advanced spreadsheet skills including Vlookups, Absolute cell references and relative cell references. Students will use a learning portfolio to



Unit 2 Understanding Computers Unit 2 Understanding Computers Unit 2 Understanding Computers Work and the set of the set of The unit is subdivided into six learning hours. It is a theoretical unit covering the basic principles of computer architecture and use of binary. Students will revise some of the theory on input and output covered in previous learning and continue to look at the Input-Process-Output sequence and the Fetch-Decode-Execute cycle through practical activities. Students will then look at some simple binary to decimal conversion and vice versa, and learn how text characters are represented using the ASCII code. This will be followed by some simple binary addition. Students will learn more in depth how storage devices represent data using binary patterns and physically save these patterns. Finally, they will look at a brief history of communication devices, how new technologies and applications are emerging and the pace of change. Students will use a learning portfolio to evidence





The unit is subdivided into six learning hours. It is a practical unit covering the basic principles of Edublocks, which is a step for students between block based coding and text coding. Students will learn some basic principles of coding in different languages. These will include key aspects such as sequences, functions and variables. Finally, they will look at integrating all the skills together to create an interaction coded game. Students will use a learning portfolio to evidence the tasks they have completed throughout this unit.

Unit 4 2D animation



The unit is subdivided into six learning hours. It is a practical unit covering the basic principles of 2D animation. Students will learn some basic principles of 2D animation creating stick figure dancers and animating of multiple characters through practical activities. Students will then look at animations that interact with backgrounds to tell a story. Finally, they will look at integrating all the skills together. Students will use a learning portfolio to evidence the tasks they have completed throughout this unit.

Unit 5 Introduction to Python



This is a practical, skills-based unit covering the fundamentals of Python. The aim of this unit is to help learners with limited or no programming experience build the skills and knowledge needed to tackle GCSE-level programming challenges in Python. Core theory is interweaved among practical programming challenges and multiple choice questions to ensure students remain engaged and are continually applying theory to reinforce attainment. Challenges come in a number of forms to ensure students build up the required knowledge while remaining accessible for all levels. Challenges include familiar Parsons Problem and Code from Scratch exercises, as well as missing-code exercises in block format (students simply click the correct blocks) or typed format (students are required to type answers into the gaps). The course should be achievable by all students, with the ability to progress at their own pace allowing the more advanced students to challenge themselves. Students will use a learning portfolio to evidence the tasks they have completed throughout this unit.





How we interleave topics to enable pupils to build and recall knowledge.

		KS3 Y	ear 9 Co	mputing	- Interleaving Approach	
Unit 1			Uni Uni	it 2 it 1	Unit 3 Unit 1 Unit 2	
Un	it 4]	Uni	it 5		
Unit 1	Unit 2		Unit 1	Unit 2		
		•	Unit 3	Unit 4		

		Unit 1 Advanced Python									
_	Memory recall					Unit 1& 2					
Unit	Unit 6 Memory Recall		ы	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5	L1 L2 L3 L4 L5 L6 L7			
	Lesson Content	L1. First Steps in Python	L2. Crunching numbers	L3. Crossroads	L4. Branches	L5. Round and Round	L6. Pulling all code together	L7. Assessment			
	Unit 2 Computer Graphics										

Memory recall		Unit 1& 2							
Unit 4 Memory Recall		ы	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5	L1 L2 L3 L4 L5 L6 L7		
Lesson Content	L1. Shapes	L2. Multiple objects	L3. Paths	L4. Making new images	L5. Behind the scenes	L6. Showcase	L7. Assessment		
				images					

_							
			Uni	it 3 3D Animatio	n		
~	Memory recall		Unit 1& 2				
Unit 3	Unit 2 Memory Recall		ы	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5
	Lesson Content	L1. Move,rotate , scale and colour	L2. Animation and names	L3. Extrude	L4. Loop cut	L5. Knife tool	L6. Assessment

				Unit 4 HTML						
4	Memory recall									
ii.	Unit 4 Memory Recall		LI	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5			
2	Lesson Content	L1. Website building blocks	L2. CSS	L3. Web design	L4. Collecting Assets	L5. Development	L6. Assessment			
	Unit 5 Audacity									
LO.	Memory recall									
Unit	Unit 4 Memory Recall		LI	L1 L2	L1 L2 L3	L1 L2 L3 L4	L1 L2 L3 L4 L5			
	-	14.00.000	L2. Working with	L3. Listening and	14 Country of the second	L5. Finishing and	L6. Evaluation and			



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Year 9 Unit 1 Advanced Python



This unit introduces students to text-based programming with Python. This is unit is the second in this programming language the first being in year 8. The lessons form a journey that starts with simple programs involving input and output, and gradually moves on through arithmetic operations, randomness, selection, and iteration. Emphasis is placed on tackling common misconceptions and elucidating the mechanics of program execution. A range of pedagogical tools is employed throughout the unit, with the most prominent being pair programming, live coding, and worked examples. Students will evidence their creations and knowledge in their student portfolio presentations.

Unit 2 Computer Graphics



This unit offers students the opportunity to design graphics using vector graphic editing software. By the end of the unit students will have produced an illustration, a logo, or some icons using vector graphics. The lessons are tailored to <u>Inkscape</u> (inkscape.org), which is open source and cross-platform, but the resources should be readily adaptable to any vector graphics editor.

Vector graphics can be used to design anything from logos and icons to posters, board games, and complex illustrations. Through this unit, students will be able to better understand the processes involved in creating such graphics and will be provided with the knowledge and tools to create their own. Students will evidence their creations and knowledge in their student portfolio presentations.

<u>Unit 3 HTML</u>



Students will learn the basics of HTML and CSS. They will learn how to create text styles and add content, including text and graphics, in a specified position on a page, as well as navigation links to other p ages on their website and to external websites. The basics of good design are covered and students will develop their own templates using Notepad as a text editor. Students will decide on a topic for their websites, document their designs





and collect suitable text and images. They will then use their HTML templates to create their websites, including a web form. Students will use a learning portfolio to evidence the tasks they have completed throughout this unit.

Unit 3D animation



Films, television, computer games, advertising, and architecture have been revolutionised by computer-based 3D modelling and animation. In this unit students will discover how professionals create 3D animations using the industry-standard software package, Blender. By completing this unit students will gain a greater understanding of how this important creative field is used to make the media products that we consume. Lessons will take students through the basics of modelling, texturing, and animating. Links are made throughout to computer science, computational thinking, and the world of work. Students will use a learning portfolio to evidence the tasks they have completed throughout this unit.

Unit 5 Sound



In this unit students will learn how sound is digitized and stored on computers. Students will learn basic sound editing techniques and how to add sound effects and mix tracks. Students will learn ways of creating different sound effects (the job of a "foley artist") are described. Students will undertake a creative project to analyse, plan, record and edit a short sound file. This could take the form of a radio advertisement or short podcast.





Core Knowledge Concepts

Computer Science Curriculum implementation Knowledge concepts used to form Schemes of Learning

Year 7 Core Knowledge Concepts

Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 1 Introduction to Computing	 I can send and reply to emails and send attachments I can use an email signature I can identify a probable phishing email and deal with it appropriately I can explain the advantages and disadvantages of email as a method of communication I can manage a Contacts list efficiently for email I know how to access Office 360 at home I understand the term "cloud" computing I understand how I can use "OneDrive" I can create an online document and save it in my OneDrive so I can access at home/school I can explain what Social Networking means I can explain why using privacy settings on Social Networking sites is important I can explain how to create an online profile that will keep me safe I can use a search engine to locate information on the internet 	 Word Power Folder File Email Phishing E-safety Search engine Reliable
	 I can explain why information on the internet is not always accurate I can use advanced searches to locate meaningful information 	







Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 2	I can use a mimic to simulate real situations	Variable
Flowol	I can use a variable	Control
	• I can identify how a control system can be used	system
Flowol 4	• I can annotate a simulation of a control system	 Sub-routine
	I can create code for a simulation	 Input
	• I know how to use inputs, outputs and decisions	Code
	 I understand the term sub-routines 	Output
	 I understand how I can use sequences 	 Annotate
	• I can create a simulation to mimic a real world	 Simulation
	situation	 Algorithm
	I can explain what a control system decision is	
	 I can explain the difference between input and output 	







Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 3 Scratch	I can navigate the Scratch environment	Scratch
	I can edit and import sprites into Scratch	• Stage
SARAMIAH	I can add costumes to my sprites	• Sprite
BORAGE	 I can clearly explain the use of sprites and costumes 	Costume
	I can give a sprite basic movement	• Script
	 I can use a range of sprites which I can control in different ways 	 Coordinates Variable
	 I can write code to make a sprite jump 	 Annotate
	 I can add comments to my code to clearly explain how it works 	Algorithm
	 I can design and create an algorithm that: makes the sprites disappear 	
	 I can design and create an algorithm that: 	
	 uses the <u>broadcast</u> function 	
	 I can write like a Computer Scientist to explain 	
	how my algorithms work	
	• I can design and create an algorithm that:	
	 used variables to set the lives 	
	 I can write like a Computer Scientist to explain how my algorithms work 	
	 I can design and create an algorithm that: 	
	 Allows sprites to interact 	
	 I can write like a Computer Scientist to explain how my algorithms work 	
	 I can design and create a stage screen that: 	
	 Includes at least two suitable images 	







Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 4 Spreadsheet Modelling Microsoft Excel	 I can describe what is meant by the term computer model I can use a spreadsheet basics: entering text, numbers and formulae I can compare different types of model I can format cells & insert a graphic I can use and understand relative and absolute referencing I can make the model as realistic as possible based on known sales figures and prices I can consider ways of increasing profit to meet a given target I can use a spreadsheet to model outcomes I can use functions including Max, Min and If I can use validation techniques to ensure that only valid data can be entered I can assign the macro to a button to make the spreadsheet more user friendly I can explain what a macro is and the advantages of using Macros I can explain the different types of Charts available and how they are used for different types of data 	 Computer model Spreadsheet Cell Format Function Formulae Macro Chart Absolute referencing Relative referencing







Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 5 Micro bits	 I can describe what is meant by the term Micro:Bit I can use and understand Basic code blocks I can use and understand Input code blocks I can make variables and use them in block code I can describe what Show LED's means I can sort data into different sequences I can try out different If statements to show different outcomes I can use a compass to show the direction I can display text on a Micro:Bit I can create Dice on a Micro:Bit 	 Computer Program Microbit Compass Variable Button Pins Reset Shake Make Code Loop Repeat Simulator While If True





Year 8 Core Knowledge Concepts

Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 1 Advanced Spreadsheets Microsoft Excel	 I can describe what is meant by the term computer model I can identify spreadsheet features: editing text, numbers and formulae I can compare different types of models I can format cells & insert a graphic I can use and understand relative and absolute referencing I can make a model as realistic as possible based on known sales figures and prices I can consider ways of increasing profit to meet a given target I can use functions including Max, Min, Vlookup and If I can use AutoFill function I can use a Streadsheet in a spreadsheet I can use a Countif function in calculations I can use validation techniques to ensure that only valid data can be entered I can add comments to my work to show an increased level of understanding of the formulas, functions and tool I have used. I can use relative cell references 	 Computer model Spreadsheet Cell Format Function Formulae Macro Chart Absolute referencing Relative referencing







Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 2 Computer Hardware	 I can describe what is meant by the term computer elements I can describe input-Process and output devices I can detail the purpose and function of a CPU I can detail the purpose and function of a RAM I can detail the purpose and function of a ROM I can detail the purpose and function of a Motherboard I can detail the purpose and function of a Graphics Card I can detail the purpose and function of a Graphics Card I can detail the purpose and function of a Graphics Card I can detail the purpose and function of a Graphics Card I can provide detail about the FDE cycle I can count in binary I can convert Binary to Denary I can complete correct calculations using binary addition I can create some new technology research and how it will impact on the student 	 CPU Binary Memory Monitor Input device Output Device Storage device RAM FDE Graphics card Motherboard Binary addition Denary





Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 3 Edublocks	 I understand what is meant by the term interface I can create a sequence of code I can use a repeat function in code I can use a range function in code I can use an iterate function in code I can describe the term sequence I can describe the term selection I can describe the term iterate I can use code to draw a shape I can code changes in sizes and shape I can code ranges into code I can use integers in code I can set up and use variables in code 	 Coding Python Import time Loop Integer Interface User input Variables Functions Sequence Selection Iteration





Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 4 2D animation	 I can explain what is meant by the term animation I can create an animation using basics: new frame I can use library characters I can create new characters I can import backgrounds I can change the speed of my animation I can change the characters as realistic as possible I can change the joints of the characters I can create my own character I can change the colours of the characters I can move characters effectively I can flip the characters I can import an independently designed background I can export my animation for other purposes 	 Animation Library Edit figure Frame Characters Background Import Export Rotate Key Frame





Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 5 Introduction to Python Python	 I can describe and use a command in python I can describe and use a function in python I can describe and use a string in python I can describe and use a string in python I can describe and use a sequence of code in python I can call a function in python I can call a function in python I can create simple python syntax I can create simple python syntax I can create algorithms to complete sequential tasks I can describe and use a for loop in python I can describe and use a for loop in python I can describe and use a while loop in python I can detail what Python is and some of the applications it is used for I can write, save and run a program I can detail what a syntax error is and how to interpret an error message I can list the rules for variable names and use variables in a program I can use statements correctly 	 Python Programming language String Variable Data types Selection Algorithms Command Function Sequence Pseudocode Debug Snake – Case For Loop While Loop

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Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 1 Advanced Python	 I know what Python is and some of the applications it is used for I can run a simple Python program in Interactive mode using the input and print functions I can write, save and run a program in Script mode I understand what a syntax error is and how to interpret an error message I know the rules for variable names and use variables in a program I understand the use and value of using comments I understand the importance of using correct data types: string, integer or float I can use the int, float and round functions I can describe what algorithms and programs are and how they differ I can recall that a program written in a programming language needs to be translated in order to be executed by a machine I can locate and correct common syntax errors I can use simple Python programs that display messages, assign values to variables, and receive keyboard input I can use simple arithmetic expressions in assignment statements I can use simple arithmetic expressions in assignment statements to calculate values I can send input from the keyboard and convert it to a numerical value 	 Python Programming language String Variable Data types Selection While loops Algorithms Pseudocode Debug Syntax Error Integer Float Round











Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 2 Computer Graphics	 I understand what is meant by the term Computer Graphics I know Inkscape basics: draw and modify shapes I know Inkscape basics: Change the position and rotation of shapes I know Inkscape basics: Z-order and how to use it appropriately I know Inkscape basics: Align and Distribute I know Inkscape basics: Grouping several objects I know Inkscape basics: Grouping in union, intersection and difference I know Inkscape basics: Vector paths (straight and curved) I can create my own logo I can evaluate my project against criteria I can use markup in a vector graphic I can modify markup code for an object 	 Computer Graphics Position Align Logo Rotation Z-order Distribute Union Intersection Difference Vector paths







Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
Unit 3 HTML	 I can demonstrate that the WWW is a huge collection of websites all over the world I know what HTML is and what it is used for I can type basic HTML tags using a text editor to create a page that can be viewed in a browser I can edit the HTML code and view the changes in a browser I know how CSS is used to set the styles in web pages and websites I can write CSS code to set styles, e.g. background colour of sections of the page; size, font, colour and alignment of text I understand what is meant by responsive design, and create a responsive web page I know the main principles of good website design I can use an HTML template to create consistent web pages I can add well-formatted content, including text and images, to each page I can identify parts of search engine results 	 HTML Website Browser Tag Alignment Template Web form Replicate Consistent CSS Responsive design





Unit	Student Learning Outcomes	Disciplinary Literacy Word Power		
Unit 4 3D animation	 I can detail what is meant by the term animation I can add, delete, and move objects I can Scale and rotate objects I can use a material to add colour to objects I can join multiple objects together using parenting I can use edit mode and extrude I can use loop cut and face editing I can apply different colours to different parts of the same model I can use the knife tool 	 Animation Library Frame Key frame Characters Background Import Export Rotate Extrude Parenting Loop cut Proportional editing Knife tool 		







Unit	Student Learning Outcomes	Disciplinary Literacy Word Power		
Unit 5 Sound	 I can identify different sound file types I can record and delete sounds in Audacity I can apply effects to recordings I can process of converting analogue sound waves to digital format I can list job roles in sound editing I can use of sound effects I can use stereo effects I can edit a sound file – trim, move/remove sections, working with multiple tracks I can identify different elements used in a radio advertisement I can eplain how the advert is suitable for audience and purpose I can edit a sound files into a radio advertisement I can edit a sound files into a radio advert I can apply effects to enhance your work I can ensure it is suitable for audience and purpose I can be aware of different sound file types and choose an appropriate type to export to I can evaluate someone else's work I can review requirements for a sound editing project 	 Digital Analogue Sound waves Effects Dialogue Purpose Audience Storyboard Elements Edit Evaluate Foley artist Stereo Sound Ducking Envelope tool Keyframes Amplitude 		
	- rearreview requirements for a sound cutting project			





KS4 | Media Learning Journey Overview

The media industry is vast, covering both traditional and new media sectors and providing work for individual freelance creatives as well as large teams in design houses and multinational companies. Job roles frequently overlap multiple sectors, and products often need to be suitable for more than one kind of output. However, there are common aspects to all media products. Pre-production and planning are vital; saving clients time and money and enabling creatives and designers to charge appropriately for their services. Products also make use of similar media codes to convey meaning, create impact and engage audiences. In this unit you will learn about the sectors, products and job roles that form the media industry.

Students will learn the legal and ethical issues considered and the processes used to plan and create digital media products. Students will learn how media codes are used within the creation of media products to convey meaning, create impact and engage audiences. Students will learn to choose the most appropriate format and properties for different media products. Completing this unit will provide them with the basic skills for further study or a range of creative job roles within the media industry.







KS4 | Media: Summary

How we interleave topics to enable pupils to build and recall knowledge.

Unit	Student Learning Outcomes	Disciplinary Literacy Word Power	
R094	 I can produce a visual identity I can detail the purpose, elements and design of visual identity I can describe features of visual identity I can detail what is meant by visual identity I can detail the features of visual identity I can describe the elements of visual identity I can describe how visual identity relates to brand identity I can detail how visual identity elements are influenced by business type, brand values and brand positioning I can produce visual identity needs to encapsulate brand values and be appropriate/relevant for the audience and type of market I can design concepts of a graphic using correct conventions I can add appropriate layout conventions for different graphic products and purposes I can detail technical properties of images and graphics I can detail technical properties of assets I can detail rights and permissions of 	 Visual identity Typography Target audiences Business types Brand values Brand positioning Colour palette Application of visual identity Alignment Typography Use of colour and colour systems Use of white space Headlines and copy Image content Titles and mastheads Mood board Mind map Concept sketch Visualisation diagram Image/canvas size Layout tools Drawing tools Adjustments to brightness/contrast and colour Use of selections Use of layers and layer styles 	
	inages	 Typography 	





- I can produce pre production and planning documents
- I can use software tools to produce a digital graphic
- I can source assets for digital graphics
- I can create assets for digital graphics
- I can modify images and other assets
- I can create a visual identity using graphic software
- I can set up new graphic products using conventions
- I can compile an image using basic techniques
- I can use basic tools and techniques such as shapes, filters and paint brushes
- I can use advanced techniques such as isolating images , layers and special effects
- I can use retouching techniques such as cloning, healing , blur
- I can re size and resample and modify image properties
- I can store assets appropriately
- I can save and export digital graphics appropriately

- Filters and effects
- Drop shadows
- Effects
- Textures
- Cloning
- Healing
- Blur
- Colour swatches
- Colour picker
- Pencil
- Brush
- Text
- Text font styles
- Text sizes
- Text effects
- Stylise
- Monochrome
- Colour toning
- Vignette
- Sharpen
- Bitmap/raster properties
- Colour depth
- Colour mode
- Compression settings
- Overall quality
- Transparency
- Vector graphic properties
- Compatibility
- File size
- Scalability
- Software support
- Brightness
- Contrast
- Levels
- Colour balance
- Hue
- Saturation
- Resize





Unit	Student Learning Outcomes	Disciplinary Literacy Word Power		
R097	 I can provide detail on different formats interactive digital media takes I can show how format is linked to the purpose of interactive digital media products I can provide detail on how format is linked to the audience of interactive digital media products I can describe devices used to access interactive digital media products impact on its format I can detail how each type of content is used in interactive digital media products I can provide content type is used for I can collect assets to be used to create content I can form and structure of interactive digital media products is affected by digital media content I can form and structure of interactive digital media products is affected by digital media I can list a range of devices used to access interactive digital media I can detail the devices used to access interactive digital media I can detail the devices used to access interactive digital media I can detail the devices used to access interactive digital media I can adapt content to suit different access methods I can give features of interactive digital media I can detail user interaction methods for digital media I can detail the differences between interface and interactive digital 	 Websites Information points Mobile apps E-learning products Digital maps Games Images Audio Video Animation Text Tables Lists Forms Navigational buttons Maps Quiz Layers Computers Games consoles Kiosks Phones Smart TV Tablets Touch screen/stylus Voice controls Camera input Keyboard/buttons Mouse/joystick control colour scheme house style 		





- I can select appropriate accessibility features
- I can detail the difference between imaginative and derivative design
- I can detail hardware that is required to create interactive digital media
- I can detail software that is required to create interactive digital media
- I can create a master page template
- I can create Pre -production documents relevant to the scenario
- I can choose assets and complete an asset table
- I can detail technical compatibility of assets
- I can create navigation and hierarchy diagrams
- I can create interactive features and controls
- I can create an interactive system which allows user interaction
- I can use libraries and stock media identify digital media
- I can save and export suitable file formats
- I can edit varieties of vector and bitmap images
- I can use techniques to repurpose assets
- I can use techniques to repurpose audio
- I can use techniques to repurpose video
- I can use techniques to repurpose interactive assets
- I can use technical skills to create interactive media
- I can save interactive digital media products during creation
- I can export / publish finished interactive digital media products
- I can use techniques to test/ check technical properties of interactive digital media
- I can detail constraints which limit the effectiveness of interactive digital media

- typography selection
- white space
- touch/gesture
- voice control
- motion/movement
- drag/drop
- feedback/closure
- alternate text
- text readability
- captions
- contrasting colour
- resizable text
- flexible input
- mobile device accessibility
- screen size and orientation adjustments
- Web authoring software
- App creation software
- Authoring tools
- Kiosk interface software
- Wire frames
- Storyboards
- Navigation and hierarchy diagrams
- Interactive features and controls
- vector
- bitmap
- adjust
 - brightness/contrast and colour
- adjust image/canvas size
- apply filters





- apply transformations
- retouching
- File naming conventions
- house style
- navigation system
- fixed/editable content
- test plan
- success criteria
- Further developments
- Interactive digital media improvements
- Non-linear navigation
- User friendly intuitive interfaces
- Suitability for target audiences
- Imaginative design
- Derivative design
 suitability of content
- Suitability for client requirements
- Suitability for target audience
- Review of audiovisual quality,
- Review of aesthetics,
- Review of interaction
- Review of engagement





 Interactive digital media constraints

Unit	Student Learning Outcomes	Disciplinary Literacy Word Power
R093	 I can provide the different sectors that form the media industry and how these are evolving I can detail the types of products produced by, and used in, different sectors I can detail the same product can be used by different sectors I can list the sectors of the media industry (traditional and new) I can list the products in the media industry I can list and detail all Creative job roles in the media industry I can list and detail all Technical job roles in the media industry I can list and detail all Senior job roles in the media industry I can detail how each role contributes to the creation of media products I can give detail on some job roles are specific to preproduction, production or post-production phases I can give detail that some job roles span multiple production smeans that individuals may perform more than one role I can provide details on the purpose of Products that are designed 	 Media industry Media sectors Traditional media Animator content creator copy writer graphic designer illustrator/graphic artist photographer script writer web designer camera operator games programmer/developer sound editor audio technician video editor web developer campaign manager creative director director editor production manager Client requirements Client brief formats Categories of audience segmentation focus groups interviews online surveys
	of Products that are designed	





- I can detail style, content and layout detail linked to purpose
- I can define client requirements
- I can detail client brief formats
- I can detail how target audiences are segmented
- I can define and give examples of primary and secondary research sources
- I can detail the difference between qualitative and quantitative information
- I can detail the different media codes
- I can explain how media varieties impact on the engagement ways
- I can explain camera techniques
- I can explain lighting differences
- I can explain mise-en-scene
- I can use and explain typography styles
- I can produce and explain a work plan
- I can produce and explain a mind map
- I can produce and explain a Mood Board
- I can produce and explain an Asset log
- I can produce and explain a Flow Chart
- I can produce and explain a Script
- I can produce and explain a Storyboard
- I can produce and explain a Visualisation Diagram
- I can produce and explain a Wireframe Layout
- I can explain hardware and software to create pre-production documents
- I can explain legal issues to protect individuals
- I can explain Intellectual property rights
- I can detail regulation. Certification and classification of media

- questionnaires
- Secondary research sources
- Work Plan
- Mind Map
- Mood Board
- Asset log
- Flow chart
- Script
- Storyboard
- Visualisation diagram
- Wireframe layout
- Privacy and permissions
- Data protection
- SFX
- VFX
- Ebooks
- conventions of genre
- formal/informal language
- positioning of elements
- style of audio
 representation
- style of visual representation
- tone of language
- qualitative information
- quantitative information
- Media codes
- Technical
- Symbolic
- Written
- Camera techniques
- angles
- shots
- movement
- Mise-en-scene
- Transitions





- I can identify Health and Safety of production phases
- I can list the purpose of a risk assessment
- I can give detail on distribution platforms and how they reach audiences
- I can find and detail properties of image file types
- I can find and detail properties of Audio file types
- I can find and detail properties of Moving image file types
- I can describe the differences between Lossy and Lossless compression

- Typography
- contingencies
- Defamation
- libel
- slander
- Protecting intellectual property (IP)
- ASA (Advertising Standards Authority)
- Ofcom (The Office of Communications)
- BBFC (British Board of Film Classification) certifications
- PEGI (Pan European Game Information)
- Certifications
- Risks assessments
- Location recces
- DPI/PPI resolution
- pixel dimension
- raster/ bitmap
- vector
- uncompressed
- compressed
- bit depth
- sample rate
- resolution (SD, HD, UHD, 4K, 8K)
- Lossy compression
- Lossless compression





KS4 : Topic summary How we interleave topics to enable pupils to build and recall knowledge.

Year	R093 : Media	R093 : Work	R094:	R094:	R094 : NEA	R097
10	industry	planning and	Techniques to	Techniques to	Assessment	Features and
	sectors and	documents	plan visual	save and	(Working on	conventions
	products (TA1)	used to	identity and	export visual	and submit	of animation
		support	digital	identity and	for	and audio
	R093 : How	ideas	graphics	digital	moderation)	
	style, content	generation		graphics (with		R097:
	and layout are	(TA3)	R094 : Tools	integrated	R097 :TA	Creativity in
	linked to the		and	R093 TA4	Introduction	animation
	purpose. Client	R093:	techniques to	distribution	(with R093	and audio
	requirements	Documents	create visual	considerations	key content	
	and how they	used to	identity and	and file	embedded)	R097:
	are defined	design/plan	digital	formats)		Resources
	(TA2)	media	graphics			required to
		products		R094: NEA		create
	R093:	(TA3)	R094:	Assessment		animation
	Audience		Technical	(working on)		with audio
	demographics	R094:	skills to			
	and	Purpose,	source, create			
	segmentation	features,	and prepare			
	(TA2)	elements	assets for use			
		and design	within digital			
	R093 : Media	of visual	graphics			
	codes used to	identity				
	convey					
	meaning,	R094:				
	create impact	Graphic				
	and/or engage	design				
	audiences	concepts				
	(TA2)	and				
		conventions				
		R094:				
		Properties of				
		digital				
		graphics and				
		use of assets				
Year	R097 Pre-	R097:	R097:	R097 : NEA	R096:	R093:
11	production and	Techniques	Techniques to	Assessment	(submit Error!	Revision and
	planning	to obtain,	save and	(Working on)	Bookmark	mock
	documentation	create and	export		not defined.	papers/tests
	and techniques			R093:		
				Distribution		



PARI	KSIDE		24			
	for animation with audio	manage assets R097 : Techniques used to create animation with audio	animation with audio R097 Techniques to test/check and review animation with audio R097: Improvements and further developments	platforms and media to reach audiences (TA4) R093 : Properties and formats of media files (TA4)	for moderation) R093 : Sources of research and types of research data (TA2) R093 : The legal issues that affect media (TA3) R093 : Job roles in the media industry (TA1)	R093: Examination (Terminal unit)

