

# ICT

## Scheme of Work for Academic Year September 2024 - July 2025

	Lesson	Term 1	Lesson	Term 2	Lesson	Term 3	Lesson	Term 4	Lesson	Term 5	Lesson	Term 6
<b>Class</b>		<b>Protecting Personal Information Online / Tinkering with 'Scratch'</b>		<b>Google: Creating meadia: Website Design</b>		<b>Positive Self Image Online / Programming 1 : Further coding with 'Scratch'</b>		<b>Collaborative Learning</b>		<b>Data Handling: Investigating Weather</b>		<b>Programming Music: Scratch</b>
<b>KS2 Year 1</b>	1	To understand the role privacy and security play in keeping our personal information safe online	1	To explore the features of Google Sites.	1	To understand how content online can affect users' self-image.	1	To understand that software can be used to work online collaboratively.	1	To log data taken from online sources in a spreadsheet.	1	To tinker with Scratch music elements.
	2	To explore a programming application	2	To plan content for a collaborative webpage.	2	To recall the key features of Scratch.	2	To understand how to contribute to someone else's work effectively.	2	To design a weather station.	2	To create a program that plays themed music.
	3	To use repetition (a loop) in a program.	3	To create a webpage as part of a collaborative class website.	3	To understand how a Scratch game works by using decomposition to identify key features.	3	To understand how to create effective presentations.	3	To design an automated machine to respond to sensor data.	3	To plan a soundtrack program.
	4	To program an animation.	4	To plan and create a website.	4	To recognise what a variable is.	4	To understand how to create and share Google Forms.	4	To understand how weather forecasts are made.	4	To program a soundtrack.
	5	To program a story.	5	To create and evaluate a website.	5	To understand how to make a variable in Scratch.	5	To understand how to use a shared spreadsheet to explore data.	5	To use tablets or digital cameras to present a weather forecast.	5	To program music for a specific purpose.
	6	To program a game.	6	To evaluate mine and peers websites	6	To create a quiz using variables.	6	To understand how to use a shared spreadsheet to explore data.	6		6	
	7		7	7	7	7	7	7	7	7	7	7
<b>Class</b>	<b>Lesson</b>	<b>Term 1</b>	<b>Lesson</b>	<b>Term 2</b>	<b>Lesson</b>	<b>Term 3</b>	<b>Lesson</b>	<b>Term 4</b>	<b>Lesson</b>	<b>Term 5</b>	<b>Lesson</b>	<b>Term 6</b>
<b>KS2 Year 2</b>		<b>Online Safety</b>		<b>Mars Rover 1</b>		<b>Mars Rover 2</b>		<b>Skills Showcase: Inventing a Product</b>		<b>Computing Systems and Networks</b>		<b>Programming: Intro to Python</b>
	1	To describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy.	1	To identify how and why data is collected from space.	1	To recognise how bit patterns represent images as pixels.	1	To design an electronic product.	1	To understand there are many different types of secret codes.	1	To tinker with a new piece of software.
	2	To describe some of the methods used to encourage people to buy things online.	2	To read and calculate numbers using binary code.	2	To explain how the data for digital images can be compressed.	2	To code and debug a program.	2	To understand the importance of having a secure password.	2	To understand nested loops.
	3	To explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true.	3	To identify the computer architecture of the Mars Rovers.	3	To identify and explain the fetch, decode and execute cycle.	3	To use CAD software to design a product.	3	To recognise the importance of the history of computers and create a well-researched presentation.	3	To understand basic Python commands.
	4	To explain that technology can be designed to act like or impersonate living things.	4	To use simple operations to calculate bit patterns.	4	To learn the basics of using Tinkercad through tutorials.	4	To create a website.	4	To design a computer of the future.	4	To use loops when programming.
	5	To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology.	5	To represent binary as text.	5	To design a functional tyre for the Mars rover using Tinkercad.	5	To create a video advert.	5	To create an audio advert for a future computer.	5	To understand the use of random numbers.
	6		6	6	6	6	6	6	6	6	6	6
7		7	7	7	7	7	7	7	7	7	7	
<b>Class</b>	<b>Lesson</b>	<b>Term 1</b>	<b>Lesson</b>	<b>Term 2</b>	<b>Lesson</b>	<b>Term 3</b>	<b>Lesson</b>	<b>Term 4</b>	<b>Lesson</b>	<b>Term 5</b>	<b>Lesson</b>	<b>Term 6</b>
<b>KS3 Year 1</b>		<b>Getting Started</b>		<b>Introducing Spreadsheets</b>		<b>Computing: Past, Present and Future</b>		<b>Porgramming in Scratch</b>		<b>Computing Components</b>		<b>Programming in Python: Sequence</b>
	1	ONLINE SAFETY / BASELINE ASSESSMENT - To Identify what pre-KS3 ICT knowledge the students have	1	LESSON 1 - Formulae, replication and referencing - Know the main elements of a spreadsheet - Be able to write formulae to add, subtract, multiply and divide using cell references - Be able to replicate data and extenernal data series - Understand the difference between relative and absolute cell references	1	LESSON 1 - The history of word processing - Develop an appreciation of the history of word processing - Familiarise themselves with word-processing software	1	LESSON 1 - Introduction to Scratch Environment and Sequencing - To define sequencing - To use sequencing in a program - To construct a working program to solve a problem	1	LESSON 1 - Computer Hardware - To identify the different components of a computer - To explain the purpose of each component of a computer	1	LESSON 1 - Computer Programs - To understand the widespread use of computer programming - To be able to write a program in Python that asks for an input from a user and produces a suitably formatted output - To understand what variables are and how to use them to store data - To understand the need for meaningful variable names.
	2	LESSON 3 - The Internet and Digital Welbeing - Understand which online activities are acceptable to do at school and which are not - Know how to use the internet for research and how to assess the trustworthiness of information found online - Understand the basic principles of keeping safe and acting responsibly online - Understand what is meant by digital wellbeing and have considered their own relationship with digital technology	2	LESSON 2 - Functions using SUM, AVERAGE, MAX and MIN - Be able to write functions to calculate totals and averages using cell ranges - Be able to write functions to find the largest or smallest value in a range - Choose the appropriate function to complete a task	2	LESSON 2 - Designing a leaflet - Have taught themselves to use a range of word-processing tools - To understand the design cycle - To be able to create a well-designed leaflet using word-processing software	2	LESSON 2 - Sequencing - To decompose a complex problem - To use sequencing to solve problems with multiple elements - To construct efficient code by identifying patterns	2	LESSON 2 - Measuring Computer Performance - To order the different measures of storage and speed in computing - To justify their choice of computer hardware for a given scenario	2	LESSON 2 - Getting data from the user - To get input from a user and store it using a variable - To combine strings using concatenation to form complex output messages - To use escape characters to include punctuation and basic formatting in an output message.
3	LESSON 4 - Vector Graphics - Understand how a Vector graph is stored and created - Understand the main features of a Vector graphics - Know some Vector graphic file types - To be able to use the shapes to create Vector-style graphics	3	LESSON 3 - Boolean operators and IF and COUNT functions - To know the Boolean operators - To be able to write IF functions to return different values depending on a condition - To understand the difference between the COUNT and COUNTA functions - To be able to use COUNT and COUNTA functions appropriately	3	LESSON 3 - Moore's Law - To understand Moore's Law - To understand how computer technology has developed and changed over time - To be able to create a well-designed report using word-processing software	3	LESSON 3 - Using Variables - To know how to input and output data using Scratch - To be able to define the term 'variable' - To know how to use variables to temporarily store data in Scratch - To be able to apply concatenation to join strings and variables	3	LESSON 3 - Computer Peripherals - Identify computer peripherals - Explain how data can be input into, and captured by, a computer.	3	LESSON 3 - Data Types - Tounderstand the basic data types: strings, integers and real or floating point numbers - To be able to cast a variable with a data type - To be able to use the arithmetic operators add (+) and multiply (*) - To understand the concept of a constant.	



KS3 Year 3		1	LESSON 1 - Basic Styling Using CSS - To edit an external style sheet to control the styling of an HTML document - To write and uses classes to control the styling of individual HTML elements	1	LESSON 1 - IP addressing and Switches - To know the format for an IP address - To understand the role of an IP address - To be able to identify whether an IP address is public or private understand the role of a switch	1	LESSON 1 - Repeating Instructions - To understand how to use iteration to create a repeated sequence of instructions - To be able to write a program in Python that uses a for loop to repeat a section of code - To understand the structure of a for loop in Python	1	LESSON 1 - Sourcing content responsibly - To understand the importance of crediting content creators - To know how to find out who originally created material posted online - To have a better understanding of how to use the internet responsibly	1	PROJECT 1 Demonstrate: - their ability to write a program in Python - their understanding of testing - the importance of versioning.	1	PROJECT 2 Demonstrate: - their ability to use spreadsheet functions to build a finance system for a business - the iterative approach to development - the importance of versioning
		2	LESSON 2 - Images and Lists - To embed an image into an HTML document - To float elements and add margins to control the layout of a web page - To write ordered and unordered lists	2	LESSON 2 - Domain Names and DNS - To know the format of a domain name - To understand the role of domain names - To know that a website's IP address is key to accessing web pages - To know that DNS stands for Domain Name System - To understand how DNS is used to find the IP address of a website.	2	LESSON 2 - User-defined for Loops - To understand how user input can be used to determine the range of a for loop - To be able to use for loops with concatenation - To be able to write a program in Python that uses a for loop with user-defined variables.	2	LESSON 2 - Using technology responsibly - To have explored the difference between illegality and immorality - To have considered some of the ways technology might be used immorally - To understand that technology is not immoral, but the way people use it can be - To understand how to protect themselves from people who want to use technology immorally	2	PROJECT 1 Demonstrate: - their ability to write a program in Python - their understanding of testing - the importance of versioning.	2	PROJECT 2 Demonstrate: - their ability to use spreadsheet functions to build a finance system for a business - the iterative approach to development - the importance of versioning
		3	LESSON 3 - Hyperlinks and Navigation - To create a hyperlink to an external web page - To link pages of a website together - To use an image as a clickable hyperlink - To create and style a navigation bar	3	LESSON 3 - Packets and Packet Switching - To know that data is split into packets - To understand the pros and cons of splitting data into packets - To know what packet switching is - To understand why packet switching is important.	3	LESSON 3 - For Loops and Strings - To understand how to use for loops to manipulate strings - To be able to design and write programs in Python to manipulate strings using for loops.	3	LESSON 3 - Technology and the environment - To know that e-waste has a negative impact on the environment - To know that mining the minerals used in mobile phones fuels conflict - To know that using digital devices uses a considerable amount of energy, contributing to climate change - To have researched one negative environmental impact of technology in depth - To be able to describe the benefits and drawbacks of one environmental impact and how the drawbacks might be minimised.	3	PROJECT 1 Demonstrate: - their ability to write a program in Python - their understanding of testing - the importance of versioning.	3	PROJECT 2 Demonstrate: - their ability to use spreadsheet functions to build a finance system for a business - the iterative approach to development - the importance of versioning
		4	LESSON 4 - Layout elements and web page design - To set up an HTML web page correctly - To use semantic elements to define different parts of a web page - To adjust the styling to control the layout and appearance of a web page.	4	LESSON 4 - The Internet - To understand that the internet is a global collection of computer networks - To be able to describe a range of online services - To understand what is meant by cloud computing - To be able to describe the advantages and disadvantages of cloud computing	4	LESSON 4 - For Loops and Lists - To understand how to use lists with for loops - To be able to design and write programs in Python that use for loops to work with lists	4	LESSON 4 - Technology and the Law - To understand the main laws that govern data protection in the UK - To apply their understanding of the GDPR and the Data Protection Act 2018 to a case study	4	PROJECT 1 Demonstrate: - their ability to write a program in Python - their understanding of testing - the importance of versioning	4	PROJECT 3 Demonstrate their ability to: - plan a solution to meet a brief - use graphics, audio- and video-editing software - review and refine their work
	Enter focus of the week for week 5 here	5	LESSON 5 - Web Design (Part 1) - To plan the content of a website - To create a site plan for a website - To design the web page layout for a website. - To define the styling for a website in a style sheet.	5	LESSON 5 - Connecting to the Internet - To know about different ways to connect to a network - To understand the advantages and disadvantages of wired vs wireless connections - To know about different methods of connecting wirelessly to the internet - To understand the security risks of connecting to public and private Wi-Fi - To be able to make informed decisions about how best to connect to the internet in different scenarios	5	LESSON 5 - Searching using For Loops - To understand how to use for loops to search for values in a list - To be able to design and write programs in Python that can search for values in a list - To be able to nest selection within a for loop	5	LESSON 5 - Moral dilemma (part 1) - To have considered the Trolley Problem - To understand that driverless cars create moral dilemmas - To have considered the two moral dilemmas created by driverless cars	5	PROJECT 1 Demonstrate: - their ability to write a program in Python - their understanding of testing - the importance of versioning	5	PROJECT 3 Demonstrate their ability to: - plan a solution to meet a brief - use graphics, audio- and video-editing software - review and refine their work
		6	LESSON 5 - Web Design (Part 2) - To finish developing their own website about their hobbies or interest .	6	LESSON 6 - A Community Guide to the Internet - To demonstrate what they have learnt about networking and the internet over the course of the module - To identify strengths and areas for improvement in their understanding	6	LESSON 6 - While Loops - To understand the use of while loops to repeat a section of code while a condition is met - To be able to design and write programs in Python that use while loops - To be able to nest selection within a while loop	6	LESSON 5 - Moral dilemma (part 2) - To understand how algorithms are used to program driverless cars to make moral decisions - To have designed algorithms to program a driverless car to make moral decisions - To be able to justify their algorithms	6		6	PROJECT 3 Demonstrate their ability to: - plan a solution to meet a brief - use graphics, audio- and video-editing software - review and refine their work
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	Lesson	Term 1	Lesson	Term 2	Lesson	Term 3	Lesson	Term 4	Lesson	Term 5	Lesson	Term 6	
Class		Unit 1: Esports Games, Teams and Tournaments		Unit 1: Esports Games, Teams and Tournaments		Unit 1: Esports Games, Teams and Tournaments		Unit 2: Establishing an ESports Organisation		Unit 2: Establishing an ESports Organisation		Unit 2: Establishing an ESports Organisation	
	1	- Investigate different genres of Esports Games - Research Genres of Esports Games	1	<u>Introduction To Unit</u> - Discuss: Definition and Classification, Similarities and Differences between Esports and Traditional Sports, Benefits of Playing Esports, Misconceptions or Preconceptions around Esports and The Importance of Balance, Moderation and Maintaining a Healthy Lifestyle	1	- Explore different professional ESports Teams - Features of successful, high performing teams - Explore different professional ESports UK Teams - - Explore different professional ESports Global Teams	1	<u>Introduction To Unit</u> - Discuss successful and recognisable global sporting organisations and their brands - Discuss what a brand is and how it can be promoted to an audience - Discuss what it takes for a global sporting organisation to be successful and how the brand helps promote the image of the organisations	1	<u>Activity: Creating a brand for your organisation</u> - To understand what a brand is, what defines it and what it represents in the larger scale of an organisation - Use web-based research to inform research - Visit organisations and talk about their brand and how it was started - To take part in discussions and case studies to develop and create own brand	1	<u>Activity: Developing A Logo and Designing Merchandise</u> - To work in groups to start constructing their plans for their designs - To use web-based information to research different logos and merchandise - To develop new ideas for logo and merchandise, using some of the creativity techniques listed	
	2	- Investigate different genres of Esports Games - Research Genres of Esports Games	2	<u>Activity: Genres and Games</u> - Research, discuss and play different genres of Esports Games, highlighting the similarities and differences between the different types of games. - Research the success and popularity of different genres of games, including use of appropriate data and statistics	2	<u>Activity: Tournaments and Leagues</u> - Use web-based information to research different Tournaments and Leagues - Visit a Live Tournament or Event where tournaments are happening	2	<u>Introduction To Unit</u> - Discuss successful and recognisable global sporting organisations and their brands - Discuss what a brand is and how it can be promoted to an audience - Discuss what it takes for a global sporting organisation to be successful and how the brand helps promote the image of the organisations	2	<u>Activity: Creating a brand for your organisation</u> - To understand what a brand is, what defines it and what it represents in the larger scale of an organisation - Use web-based research to inform research - Visit organisations and talk about their brand and how it was started - To take part in discussions and case studies to develop and create own brand	2	<u>Activity: Developing A Logo and Designing Merchandise</u> - To work in groups to start constructing their plans for their designs - To use web-based information to research different logos and merchandise - To develop new ideas for logo and merchandise, using some of the creativity techniques listed	



