Computing at Meols Cop

As a department, we aim to ensure that all of our learners are fully prepared for the future of Computing and understand how to use new technologies safely. Learners develop transferable skills that will equip them for the work place, college, university, and beyond. Our priority is to ensure that all learners develop a strong interest in Computing, make excellent progress, develop skills for employment, prepare them for further education, and remain safe while doing so. The computing department at Meols Cop delivers a wide as possible curriculum at school to find something for everyone. We want to have our students become life long learners for our subject. Students extend their learning independently at home by using open source sofwtare so they are able to freely download the software we use at school. We have extensive extra curricular opportunities for students at Meols Cop. Including lunchtime and after school computer clubs, guest speakers from a variety of local companies, external visits. We have recently successfully achieved the Computing Quality Mark.

Year 7

Autumn Term 1	Spring Term 1	Summer Term 1
M365 • Teams • Can they log in at home • Installing office at home • One drive: saving work to it and opening it up • Email: sending and receiving and using it appropriately • Office online • Forms • Assignments: assign the quiz and have them do it • Practice a meeting with them using webcam	**E safety 3 lessons/Creating a how to keep yourself safe guide** • Digital footprint • Cyberbullying • Grooming • Sexting • Bullying • Malware • Identity Theft	**Animation** • Onion Skinning • Stop motion • Importing background • Adding frames • Frame rate • Importing figures • File type and properties
Key Concepts: Digital Literacy, Information technology	Key Concepts: Digital Literacy, Information technology,	Key Concepts: Digital Literacy, Information technology
Autumn Term 2	**Spring Term 2**	**Summer Term 2**
Digital Literacy • Log onto network. Username, passwords, folder structure. What is a network. • Creation of a presentation on computing ○ Software ○ Hardware ○ Networks ○ Cloud computing ○ esafety • Saving Files into your area with correct file name • Word • canva	**Digital Literacy** • Log onto network. Username, passwords, folder structure. What is a network. • Creation of a presentation on computing ○ Software ○ Hardware ○ Networks ○ Cloud computing ○ esafety • Saving Files into your area with correct file name • Word • canva	**Animation** • Onion Skinning • Stop motion • Importing background • Adding frames • Frame rate • Importing figures • File type and properties
Key Concepts: Digital Literacy, Information technology, Computer Science	Key Concepts: Digital Literacy, Information technology	• Key Concepts: • Digital Literacy, Information technology

Year 8

Autumn Term 1	Spring Term 1	Summer Term 1
M365/Python • Able to open up python and run a programme • Understand difference between shell and script • What is a function • Be able to define a variable • Understand syntax • Able to insert comments • If, else statements • Write working programmes • Create a sleep calculator • Lists • 25 tasks sheet	**E safety 3 lessons/Creating a how to keep yourself safe guide** • Digital footprint • Cyberbullying • Grooming • Sexting • Bullying • Malware • Identity Theft	**Sound Editing** • Importing music files, sound effects • Recording Sound, creating sound files using AI • Tools/features of sound editing • 5. Save as correct file type WAV/MP3. File properties
Key Concepts: Computer Science, Information technology	Key Concepts: Digital Literacy, Information technology	Key Concepts: Digital Literacy, Information technology
Autumn Term 2	**Spring Term 2**	**Summer Term 2**
Graphics • features of graphic editing • Resizing Images • Eraser • Insert Text • Pencil • Magic Wand • Adjustments • Effects • Layers • Saving as correct file type. File properties.	**Computer Science Theory** • Binary • Networks • Hardware • Flowcharts • Algorithms	**Video Editing** • Importing video files/images • Importing sound • Editing video clips • Saving as file types, mp4, avi. • Using the drone to create your own video
Key Concepts: Digital Literacy, Information technology	Key Concepts: Computer Science	Key Concepts: Digital Literacy, Information technology

Year 9

Autumn Term 1	Spring Term 1	Summer Term 1
Spreadsheets • Able to open up and save a spreadsheet • Able to format a spreadsheet appearance • Able to format a spreadsheet cells for data • Create a formulae • Use sum function • Use max, min function • Create charts and graphs • Understand concept of modelling using a spreadsheet • Absolute cell referencing • Complete the 5 spreadsheets: introduction to spreadsheets 1+2, shop to format, zoo animals, staff	**E safety 3 lessons/Creating a how to keep yourself safe guide** • Digital footprint • Cyberbullying • Grooming • Sexting • Bullying • Malware • Identity Theft	**Animations** • Onion Skinning • Stop motion • Tweening • Importing background • Adding frames • Frame rate • Importing figures • File type
Key Concepts: Digital Literacy, Information technology	Key Concepts: Digital Literacy, Information technology	Key Concepts: Digital Literacy, Information technology
Autumn Term 2	**Spring Term 2**	**Summer Term 2**
Create a mobile phone app with Java • Create a working app • Able to use block code/java • interface • Functions • Variables • Else if • lists • Download app for phone	**Web Authoring** • Creating using a template • Creating a website using AI. • Multimedia on a website, video, animations, sound • Design elements • Publishing it to the web • HTML	**3D Printing** • Creating a 3D printed object • STL and OBJ file types • Cura software, gcode • Careers in 3D printing • Uses of 3D printing in industry
Key Concepts: Computer Science	Key Concepts: Digital Literacy, Information technology	Key Concepts: Digital Literacy, Information technology

Creative Imedia Year 10

Year 10

Autumn Term 1	Spring Term 1	Summer Term 1
R094 Visual identity and digital graphics In this unit you will learn to how to develop visual identities for clients and use the concepts of graphic design to create original digital graphics to engage target audiences. Topics include: • Develop visual identity • Plan digital graphics for products • Create visual identity and digital graphics	**R094 Visual identity and digital graphics** In this unit you will learn to how to develop visual identities for clients and use the concepts of graphic design to create original digital graphics to engage target audiences. Topics include: • Develop visual identity • Plan digital graphics for products • Create visual identity and digital graphics	**R097** Interactive digital media In this unit you will learn how to plan, create and review interactive digital media products. Topics include: Plan interactive digital media Create interactive digital media Review interactive digital media
Autumn Term 2	**Spring Term 2**	**Summer Term 2**
R094 Visual identity and digital graphics In this unit you will learn to how to develop visual identities for clients and use the concepts of graphic design to create original digital graphics to engage target audiences. Topics include: • Develop visual identity • Plan digital graphics for products • Create visual identity and digital graphics	**R093** Creative iMedia in the media industry In this unit you will learn about the media industry, digital media products, how they are planned, and the media codes which are used to convey meaning, create impact and engage audiences. Topics include: • The media industry • Factors influencing product design • Pre-production planning • Distribution considerations	**R097** Interactive digital media In this unit you will learn how to plan, create and review interactive digital media products. Topics include: Plan interactive digital media Create interactive digital media Review interactive digital media

Creative Imedia Year 11

Year 11

Autumn Term 1	Spring Term 1
R097 Interactive digital media In this unit you will learn how to plan, create and review interactive digital media products. Topics include: • Plan interactive digital media • Create interactive digital media • Review interactive digital media	**R093** Creative iMedia in the media industry In this unit you will learn about the media industry, digital media products, how they are planned, and the media codes which are used to convey meaning, create impact and engage audiences. Topics include: • The media industry • Factors influencing product design • Pre-production planning • Distribution considerations
Autumn Term 2	**Spring Term 2**
R097 Interactive digital media In this unit you will learn how to plan, create and review interactive digital media products. Topics include: • Plan interactive digital media • Create interactive digital media • Review interactive digital media	**R093** Creative iMedia in the media industry In this unit you will learn about the media industry, digital media products, how they are planned, and the media codes which are used to convey meaning, create impact and engage audiences. Topics include: • The media industry • Factors influencing product design • Pre-production planning • Distribution considerations

Computer Science

Year 10

Autumn Term 1	Spring Term 1	Summer Term 1
Boolean Logic Units: Binary and Denary conversion Binary addition Data Storage (numbers, characters) Computational Thinking Designing, creating and refining algorithms	Architecture of the CPU CPU performance Embedded Systems Primary Storage Secondary Storage Compression	Operating Systems Utility Software Hexadecimal conversion
Autumn Term 2	**Spring Term 2**	**Summer Term 2**
Data Storage (images, sound) Programming fundamentals Programming skills & techniques	Networks & Topologies Wired & Wireless networks, protocols and layers Threats to computer systems and networks Identifying and preventing vulnerabilities Mock exam preparation and revision	Ethical, legal, cultural and environmental impact

Computer Science

Year 11

Autumn Term 1	Spring Term 1
Recap on Programming fundamentals etc Programming skills & techniques Programming project Defensive design Testing Languages	System Architecture Recap Memory And Storage Recap Networks Recap
Autumn Term 2	**Spring Term 2**
Integrated Development Environment Searching Algorithms Sorting Algorithms Mock exam preparation and revision	Network Security Recap Systems Software Recap Ethical, Legal, Cultural and Environment Recap Computational Thinking Recap

Computing at Meols Cop

Aims of the Department

- To prepare students for the world of work and further education. To give them the skills necessary to enter employment in computing related fields.
- To give students the digital skills necessary to be able to use IT in other subjects across the school and at home
- To give students the skills necessary to keep themselves safe online
- To deliver a wide as possible curriculum at school to find “something for everyone”. To have our students become lifelong learners for our subject. Students extend their learning independently at home.
- To meet the needs of the National Curriculum and beyond.
- Provide a personalised learning experience in which engaged and computing confident learners achieve improved learning outcomes
- Create a flexible learning environment in which learning resources can be accessed whenever and wherever they are needed
- Support all staff in professional development, providing tools for collaboration, management and administration
- Educate learners to use a wide range of computing resources and tools confidently, flexibly and creatively across the whole curriculum
- Educate learners to gain confidence, capability and independence to operate responsibly and ‘e-safely’ outside the school
- Promote a culture of creativity and innovation in the way computing is used to enhance / support learning

KS4 curriculum overview

OCR Creative Imedia

The Cambridge Nationals in Creative iMedia course is an IT qualification that provides a good foundation for students who want to study IT at College and University. Topics covered include game design, graphics, animations, web development, film and sound editing. They provide knowledge in a number of key areas in this field from pre-production skills to digital animation and have a motivating, hands-on approach to both teaching and learning. Students develop practical skills and knowledge relating to a broad employment area. Students will complete four units. Three units are coursework based and one unit is exam based. Units are chosen from a range of topics including game design, web authoring, graphics, film and sound editing.

OCR Computer Science GCSE

Computer Science is the science of how computers work and an understanding of how to make computers do exactly what you want them to do. Year after year employers are struggling to fill their vacancies for computer programmers and game designers. With a qualification in Computer Science, you might choose a career in engineering, aerospace, medical science, software development, research and many more. Computer Science is now recognised as a science, along with biology, chemistry and physics, and is therefore part of the English Baccalaureate (EBacc). This course is popular with people who have an excellent knowledge of maths, science, technology and who enjoy problem solving using software to program algorithms, it offers opportunities for pupils with a range of abilities to progress.

Computing at Meols Cop

Extra-Curricular

To motivate, challenge and reward our students we have many enrichment activities that reach beyond the classroom. Through these extracurricular activities the department aims to inspire and motivate students to pursue their interest in Computing outside of the classroom. These include:

Lunchtime and after school clubs - These clubs are open to all students within the school. They are held every lunch time and most days after school. It is an opportunity for students to come in to complete coursework from other subjects or extend the coursework set from computing lessons. Separate computer clubs for girls are also held at lunchtimes to encourage female students to study Computing at KS4.
Programming Clubs – Programming clubs are held once a week after school at various times throughout the year. The primary focus is on the development of programming skills using the language Python. It is an opportunity for students to develop their coding skills in a creative and encouraging setting. Students are encouraged to independently develop their own projects share with the group the skills that they have gained. This is an excellent opportunity for students to develop the skills required for GCSE Computer Science.
Educational visits – Students visited a games programming company in Liverpool, SETGO games. They had the opportunity to experience what working for a computer programming company is like. They had the opportunity to discuss career options and how best to get involved in the industry. Visit to Edge Hill to get experience of further education in a computing setting.
3D Printing Club - After school clubs for students to build any 3D printed objects. Using open source software to create STL and OBJ files.
BAFTA Game competition - Students enter the national BAFTA game design competition. This is an opportunity for students to gain some experience in what work is involved in the games design industry. We also hope it will inspire those students who have an interest in the design industry to develop their skills.
Raspberry Pi club – We use Raspberry Pi's to investigate and adapt different projects that use externally driven devices. The students can decide what type of project they want to run and it's feasibility. The Raspberry Pi can be programmed using Python to remotely operate wireless devices such as a weather station or wireless radio or use wired connections to operate a fully functional robotic arm or any type of electronic device using a Pi-face. "If they build it, it will work".
Guest Speakers – A wide variety of guest speakers from organisations including Amazon, Techedia, Bank of England. The speakers work with the students showing them how computing is used in real world environments and the careers that computing opens up to them. Visitor from Hatters digital agency to discuss with imedia students careers using the qualification.
Esports team – MCHS has an esports team that has taken part in the national British Esports Association Tournament.