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HALF TERM 1: How we work in IT **KQ1 - How do we work in Teams?** (a) What is Teams – what is Teams, why is Teams used, when will Teams be used, how will Teams be used across the Academy. (b) Using Teams – Accessing Teams, accessing resources on Teams, using class notebook, viewing assignments on Teams, handing in assignments on Teams, uploading work to assignments on Teams, using the chat feature on Teams and what it is appropriate to do so. **KQ2 - Why is file management important?** (a) Importance of file management – why folders are used, finding files easier for students and teachers. (b) Organising files – where to save files, creating folders, moving files, renaming files, deleting files. **KQ3 - How can email be used effectively?** (a) Email etiquette – how emails are formatted, why formatting emails correctly is important, the purpose of email subjects. (b) Organising files – reading emails, sending emails, replying to emails, sending attachments, forwarding emails, CC, BCC. **Keywords** • File management • File • Folder • Organise • Shared • Etiquette • Uploading • Downloading • Email • Inbox • Password • Communication • BCC • CC • Attachment • Forward • Reply		Students will read an article about the increase of users using MS teams during the pandemic and the benefits it has brought to many users including businesses. Also, how it has changed a lot of businesses use of technology.
		Extended writing task about Teams, File management, emails and the benfits to businesses. Also the benefits of using VLE's in schools.
		Discussion of an article, students will identify the benfits of MS teams to businesses and society but also draw upon the negative impacts this will have.
		Homework: (All homeworks are revision-based, unless otherwise stated) Week 1: KQ1 - Teams knowledge from knowledge organiser Week 3: KQ2 - File management knowledge from knowledge organiser Week 5: KQ3 - Email knowledge from knowledge organiser
HALF TERM 2: Working Online **KQ1 - How do I stay safe online?** (a) People - (i) Issues - are people online who they say they are? -What is grooming: Building a relationship, trust and emotional connection with a young person so they can manipulate or exploit them. -What is exploitation: Using a youngster for profit, labour, sexual gratification, or other personal or financial advantage (ii) How to stay safe – -What is personal information: information that can be used to identify, locate, or contact an individual e.g. Name,		Reading of newspaper articles linked to online conduct, cyberbullying, digital footprint or responsible content creation.
		Explanation of the impact of social media on mental health, how technology in general is affecting mental health and how this can be reduced.
		Class discussion about social media and the mental impacts.

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address, email, telephone, including photographic image etc. -Why you shouldn't give out personal information -What to do if you encounter issues -Who should you report an issue to: teacher, someone you trust, parents, police, CEOP, Childline. <u>(iii) The mental impact of social media</u> – -How social media affects mental health: Inadequacy about your life or appearance, Fear of missing out, Cyberbullying, Self-absorption -How to reduce the affects: Use an app to track how much time you spend, turn off your phone at certain times of day, don't take your device to bed, disable notifications, limit checks of your device, only check social media on computer -Who to talk to if you are feeling low: parents, a teacher, someone that you trust. <u>(b) Technical</u> – <u>(i) Issues</u> – -What are viruses/malware: Software which is designed to cause harm to a computer: delete files, access information. -What is hacking: Gaining of unauthorised access to data in a system or computer. -What is data interception: Intercepting data as it is being sent between two devices. -What is phishing: Sending emails pretending to be from reputable companies to induce individuals to reveal personal information, such as passwords, credit card details -Entering data into spoof websites: Websites which are designed to look like the 'real' website. <u>(ii) Reducing risks</u> – -Anti-virus/anti-malware software: Software which is designed to scan a computer system for viruses/malware. -What is data encryption: Scrambling data so that it can only be viewed by authorised people. A key is needed to decrypt. -What are the signs of a phishing email: Fonts may be 'similar', email is not from an authentic address or domain is misspelled e.g. amaz0n.com, urgent action is required, links to a fake web site. -Where to enter your data: Check the website URL is authentic. **KQ2 – How should I conduct myself online?** <u>(a) Cyberbullying</u> – -What is trolling: Upsetting people by posting inflammatory about someone for 'fun' to get a rise out of other users. -What is online bullying: Use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature. -Which legislation covers cyberbullying: Not covered by a specific law in the UK, however cases of cyberbullying and online harassment, fall under: Protection from Harassment Act 1997, Malicious Communications Act 1988, Communications Act 2003. -What to do if you encounter cyberbullying: parents, a teacher, someone that you trust, CEOP, Child line. <u>(b) Digital footprint</u> – -What is a digital footprint: Information about an individual that exists on the Internet as a result of online activity.	 	Links to PSHE – Internet Safety **Homework: (All homeworks are revision-based, unless otherwise stated)** Week 1: KQ1 - Threats to people, how to stay safe and the mental health impacts of social media knowledge from knowledge organiser. Week 3: KQ1 - Technical threats and KQ2 - Digital Footprint and Cyberbulling knowedge from knowledge organiser. Week 5: KQ3 - Influences and responsirble content creation knowledge from knowledge organiser.

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-What harm can a negative digital footprint have: online reputation, can be viewed by prospective employers, difficult to remove a digital footprint. **KQ3 – Why is it important that online content is created responsibly?** (a) Influencer – The impact 'influencers' can have on others - setting trends, influence/persuade others, do influencers have a moral responsibility. **Keywords** • Grooming • Exploitation • Malware • Virus • Trojan • Worm • Spyware • Ransomware • Anti-virus • Hacker • SPAM • Emails • Attachment • Phishing • Data interception • Encryption • Cyberbullying • CEOP • Childline • Social media • Mental health • Trolling • Legislation • Digital Footprint • Influencer		
HALF TERM 3: Understanding Computers **KQ1 - Which components are in my devices and what are their purpose?** (a) The role of the CPU – The purpose of/need for the CPU: To process data/perform instructions. Clock Speed: -The number of instructions that the CPU can process per second -1 hertz = 1 instruction, 1megahertz = 1 million instructions, 1 gigahertz = 1 billion instructions -Higher clock speed can improve CPU performance. (b) How data is stored -What is stored in the RAM: Any files which the computer is currently using e.g. documents that are open, files for software that is currently running. -What is stored in secondary storage and why is it needed: Files/documents that need to be stored permanently.		Historical information relating to the invention of some of the main computing components.
		An explanation of the computer components contained within a chosen device at home.
		Discussion of the need for/use of devices for individuals with additional needs.
		Links to Maths – Number systems, use of powers, division, subtraction, addition. Links to Technology/Science – Circuits/switches

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-Magnetic storage: Magnetic hard-drive. Has moving parts.
-Optical storage: CD/DVD/Blu-ray.
-Solid state storage: Storage without moving parts e.g. SSD, memory stick, used in portable devices etc.
(c) Other components – the purpose of/need for:
Motherboard: Enable each of the internal components to connect/exchange data.
A sound card: Process data relating to the input/output of sound. Integrated into motherboard or separate card.
A graphics card: Process data relating to the input/output of graphics. Integrated into motherboard or separate card.
A network card: Enable a device to connect to a network. Can be wired or wireless network card.
A power supply: Supply power to each internal component.
(d) Input and output devices – the purpose of/need for:
-Input/output devices: Devices which are used to enter data / output data to/from a computer system.
-Common input/output devices and their uses e.g. keyboard, mouse, monitor, touch screen, printer, camera, microphone, speakers etc.
-Input/output devices for additional needs e.g. braille keyboard, foot mouse puff/suck switch etc.

KQ2 – What is the binary number system and why is it used?

(a) Why binary is used – computers are circuits/two state systems, flow of electricity is represented as 1/0, on/off.
(b) The binary number system – counting in binary, converting from binary to denary, converting from denary to binary, binary to represent text, binary addition.

Keywords

- CPU
- Instruction
- Clock Speed
- Hertz
- Megahertz
- Gigahertz
- Performance
- RAM
- Secondary storage
- Magnetic storage
- Optical storage
- Solid state storage
- Motherboard
- Sound card
- Graphics card
- Network card
- Wired
- Wireless
- Power supply
- Input/output devices - Keyboard, mouse, monitor, touch screen, printer, camera, microphone, speakers, braille keyboard, foot mouse

Homework: (All homeworks are revision-based, unless otherwise stated)

Week 1: KQ1 - CPU components knowledge from knowledge organiser – CPU, RAM and storage

Week 3: KQ1 - Other components knowledge from knowledge organiser: Motherboard, sound card, graphics card, network card, power supply.

Week 5: KQ2 - Binary to Denary convertion practice

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- Binary
- Denary

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HALF TERM 4: Presenting Information

KQ1 – How do you present information in Microsoft Word?
(a) When should Microsoft Word be used – purpose, when Word should be used, types of documents created in Word.
(b) Microsoft Word Tools – alignment, tabs, font formatting, bullets, numbering, tables, table formatting, format painter, highlighting, font properties, page layout, margins, cut, copy, paste.
(c) Presenting Data – Presenting a letter, presenting a report.
KQ2 - How do you present information in Microsoft PowerPoint?
(a) When should Microsoft PowerPoint be used – purpose, when PowerPoint should be used, creating an effective PowerPoint.
(b) PowerPoint Tools – add/delete slides, transitions, animation, notes, themes, slide layouts, formatting background.
KQ3 – How do you work collaboratively online?
(a) What is SharePoint – purpose, how can SharePoint be used.
(b) Working collaboratively using SharePoint – editing documents collaboratively using Word and PowerPoint.

Keywords

- Formatting
- Font
- Alignment
- Format painter
- Margins
- Paragraphs
- Page layout
- Slide layout
- Master slide
- Themes
- Animation
- Transition
- Collaboratively

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<td>Reading a report/letter for a given purpose – link to a prior topic covered from half terms 1-3.</td>
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<td>Creation of a report/letter for a given purpose – link to a prior topic covered from half terms 1-3.</td>
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<td>Delivering a PowerPoint/creation of a video of delivering a PowerPoint, for a given purpose.</td>
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<td>English – letter writing/speaking and listening.</td>
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<td>Homework: (All homeworks are revision-based, unless otherwise stated)

Week 1: KQ1 - Identification of MS Word tools used and KQ1 knowledge from knowledge organiser.

Week 3: KQ2 - Identification of MS PowerPoint tools used and KQ2 knowledge from knowledge organiser.

Week 5: KQ3 – SharePoint and collaborative working knowledge from knowledge organiser.</td>
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HALF TERM 5: Computer Programming using Microbits HT1

KQ1 – What is an algorithm?
(a) Algorithm uses – a set of steps to solve a problem or complete a task, can be represented using structured English, used to turn real world problems into something that can be solved by a computer system.
(b) Writing algorithms – writing/writing algorithms using structured English to then create MicroBit programs.

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<td>Reading of algorithms using structured English, to then be represented in diagrammatic form.</td>
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<td>Written explanation of an algorithm that has been created</td>
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<td rowspan="3">KQ2 – What is a MicroBit computer?
<u>(a) How a MicroBit works</u> – operating, controlling, powering, connecting to the computer.
<u>(b) Writing code for a MicroBit</u> – writing code, adding code to a MicroBit.
KQ3 – How do you control the output on a MicroBit computer?
<u>(a) Inputs</u> – button press, shake, movement, input to trigger output, temperature input
KQ4 – How do you control the input on a MicroBit computer?
<u>(a) Output</u> – displaying numbers, displaying strings, the different between numbers and strings, displaying images
<u>(b) Other commands</u> – delay/pause, on start, forever
KQ5 – How can instructions be repeated on a MicroBit?
<u>(a) What is iteration</u> – allows you to repeat instructions/code forever/a specific number of times, allows you to reduce the number of lines of code, efficiency.
<u>(b) Iteration in Microbits</u> – on start, forever, repeat a specific number of times (for loop).

Keywords
• MicroBit
• Code
• Input
• Output
• Instruction
• Command
• String
• Variable
• Declaring
• Value
• Repeat
• Iteration
• Loop
• Condition
• Decision
• If statement
• Efficiency
• Algorithm</td>
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<td>Peer explanation/discussion algorithms that have been written.</td>
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<td>Technology - Links to flow charts/diagrams used in technology</td>
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<td>Homework: (All homeworks are revision-based, unless otherwise stated)

Week 1: KQ1 Algorithms and KQ3 MicroBit Output knowledge from knowledge organiser.

Week 3: KQ3 and KQ4 Inputs and Outputs knowledge from knowledge organiser.

Week 5: KQ5 Loops/Repetition knowledge from knowledge organiser.</td>
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<td rowspan="3">HALF TERM 6: Computer Programming using Microbits HT2

KQ1 – How can a problem be simplified?
<u>(a) Abstraction uses</u> – removing unnecessary detail, focussing on the important information needed to solve a problem
<u>(a) Decomposition uses</u> – splitting a task down into the smallest possible set of sub tasks, smaller tasks are easier to solve
<u>(b) Applying abstraction and decomposition</u> – apply to programming scenarios
KQ2 – What are variables and why are they used?</td>
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<td>Reading of guides for how to use MicroBit computers and create programs using them.</td>
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<td>Written explanation of a MicroBit program that has been created</td>
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<td>Peer explanation/discussion of code that has been created.</td>
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(a) Why are variables used – store values that have been set/entered, stored values can be used later
(b) Variables in MicroBits – declaring a variable, setting a variable value, changing a variable value.

KQ3 – How can decisions be made about data input on a MicroBit?

(a) What are decisions/if statements – make decisions about a value/input, the outcome if true/false, making multiple decisions, else condition, conditions.
(b) Decisions in MicroBits – if, else if, else, making a decision about an input, making a decision about a variable

Keywords

- MicroBit
- Code
- Input
- Output
- Instruction
- Command
- String
- Variable
- Declaring
- Value
- Repeat
- Iteration
- Loop
- Condition
- Decision
- If statement
- Efficiency
- Abstraction
- Decomposition
- Algorithm

Geography – a potential MicroBit project is a simple weather station to collect temperature data.

Homework: (All homeworks are revision-based, unless otherwise stated)

Week 1: KQ1 Loops/Repetition knowledge from knowledge organiser.

Week 3: KQ2 Variables and KQ3 Decisions/If Statements knowledge from knowledge organiser.

Week 5: Planning for microbit challenge assessment – decomposition/abstraction of problems.