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**Long Term Mapping**

**Computer Science (Non GCSE)**

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|  | | **Cycle 1** | **Cycle 2** |
| **(2021-22)** | **(2022-23)** |
| **Autumn** | **1** | Computer Systems & Hardware | Online Safety |
| **2** | Networks | IT and the World of Work |
| **Spring** | **1** | Protocols | Digital Media |
| **2** | Security | Spreadsheet Management |
| **Summer** | **1** | Coding | Planning a Project |
| **2** | Coding | Delivering a project |

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| **MEDIUM-TERM PLANNING** | | | | | | | | | | | | | |
| ***Aspiration for Life*** | | | To develop their use of technology. | | ***Language for Life*** | | Develop and understand new vocabulary associated with ICT. | | | ***Learning for Life*** | | To use their skills in a range of setting and put them to practical use. | |
| **CYCLE 1 2021-22** | To develop a range of Digital Skills that can be used in a working environment and personally showing an awareness of how the internet works and how to keep safe when using the internet in a range of settings. | **Social Media** | | | |  | | | | |  | | | |
| **Autumn 1**  7 weeks | | **Autumn 2**  7 weeks | | **Spring 1**  7 weeks | | **Spring 2**  7 weeks | | | **Summer 1**  5 weeks | | **Summer 2**  7 weeks | |
| **Computer Systems and Hardware** | | **Network** | | **Protocols** | | **Security** | | | **Coding** | | | |
| Understanding how a computer works | | Understanding how computers communicate | | Understanding how data is sent/ received and stored | | Understand how to protect your computer from attack | | | To learn how to read, follow, write, understand and debug code. | | | |
|  | | **SUGGESTED ACTIVITIES/ SOFTWARE** | | | | | | | | | | |
| Kahoot/ mentimeter  Using devices  Calculating storage  Managing storage  Labelling devices/ parts  Sorting data | | Decoding messages  Build a network (joining devices)  Hangman (passwords)  How computers communicate  |Making strong passwords  Brute forcing passwords | | Sending data  Sniffing  Tracing data around the world | | | Database  Managing data  Snarfing  Spying  Scenarios  Guess the password  Making good/bas passwords  Being a spy | | Scratch  Replit  Python  Flow charts  Cracking codes  Educblocks  Following instructions | | | |
|  | | **VOCABULARY** | | | | | | | | | | |
| Input | Output |CPU | RAM | ROM | Bits | nibble | bytes | megabytes | kilobytes | megabytes | gigabyte | terabyte | petabyte | | Wireless | Wired | SSID | Password/ Key | Encryption: Pigpen cipher | Cloud based storage/ network | IP address | Internet | Data | | FTP | HTTP | HTTPS | SMTP |IMAP | POP3 | | | Phishing | Denial of Service | Trojan | Worm | Botnet | Hacking | Virus | Clickjacking | Encryption | Ransomware | | Script | Conditional | Preventing errors | Repeat | Command | Instruct | Code | Bug | Sequence | Flow chart | If, then | Variables | Logic reasoning | repeating loop | conditional loop | | | |
|  | | **IMPLEMENTATION** | | | | | | | | | | |
| **Week 1:** Input  **Week 2:** Output or Both  **Week 3-4:** Data sizes/ File size/ Storage  **Week 5-7:** Parts of the computer and what they do | | **Week 1:** Encryption  **Week 2:** Binary code  **Week 3:** IP Addresses  **Week 4:** What is a network  **Week 5:** Servers  **Week 6:** Wireless v wired network  **Week 7:** WAN/ LAN | | **Week 1-2:** How data is sent  **Week 3-4:** Secure websites  **Week 5-6:** Emails  **Week 7:** Data protection | | **Week 1:** What is data?  **Week 2-3:** Making a database  **Week 4:** Types of attack  **Week 5:** How to protect yourself from attack  **Week 6:** Scenarios  **Week 7:** Passwords | | | **Week 1:** What is a code?  **Week 2:** Understanding sequences of code.  **Week 3-5:** Understanding if and then statements, and other basic coding terms.  **Week 6:** Write small pieces of code. | | **Week 1:** Recap: Basics of coding  **Week 2:** Planning a game project  **Week 3 -5:** Making a game using a code  **Week 6:** Play testing and finding bugs  **Week 7:** Fixing bugs and final testing. | |
| **INTENT** |

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| **MEDIUM-TERM PLANNING** | | | | | | | | | | | | | | |
| ***Aspiration for Life*** | | | To develop their use of technology. | | ***Language for Life*** | | Develop and understand new vocabulary associated with ICT. | | | ***Learning for Life*** | | To use their skills in a range of setting and put them to practical use. | | |
| **CYCLE 2 2022-23** | To develop a range of Digital Skills that can be used in a working environment and personally showing an awareness of how the internet works and how to keep safe when using the internet in a range of settings. | **Social Media** | | | |  | | | | |  | | | | |
| **Autumn 1**  7 weeks | | **Autumn 2**  7 weeks | | **Spring 1**  7 weeks | | **Spring 2**  7 weeks | | | **Summer 1**  5 weeks | | **Summer 2**  7 weeks | | |
| **Online Safety** | | **It and the World of Work** | | **Digital Media** | | **Spreadsheet Management** | | | **Planning a project** | | | **Delivering a project** | |
| Pupils should develop a deep understanding of how to keep safe online, and key issues about online privacy and how to keep information safe. | | Pupils should have an understanding about IT and how it affects the work place. They should be aware of the sort of expectations they could have in the work place. | | Pupils should have an understanding of how to create and manipulate digital creative projects. This could be digital photos, videos or animations. | | Pupils have an understanding of how to use spreadsheets, and key functions and how and when to use them. | | | Pupils should use their coding skills, to plan a project which fulfils a purpose. | | | Pupils should use their design to create a program which fits a purpose. They should be able to write and debug code. | |
|  | | **SUGGESTED ACTIVITIES/ SOFTWARE** | | | | | | | | | | | |
| Flow charts | ICT Monopoly | Scenario cards | CEOP | Child Line | BBC |Survey Monkey | Spotting phsiing emails | writing phishing emails | Safe or not Safe | Guess who | | Identifying ICT in the workplace | Using different ICT from different jobs | Using teams/google docs to create shared documents | Using teams/zooms to communicate | Using emails | | Taking photos | Taking videos | Editing phots | Editing videos | adding Sound to videos | Layering | Onioning | Photoshop | Movie Maker | | | Colour by grid reference | treasure hunting/maps | creating personal budgets | using formulas | | | Creating GANTT charts | Practicing basic codes | Using code to solve a problem | irepit | Scratch | Eublocks | repl | | | Creating GANTT charts | Practicing basic codes | Using code to solve a problem | irepit | Scratch | Eublocks | repl | testers | Focus groups | |
|  | | **VOCABULARY** | | | | | | | | | | | |
| Online stranger danger | privacy | acceptable and unacceptable behaviour | online bullying | online safety | catfishing | flagging | reporting |phishing | computer viruses | | Work | Employment | IT | Workplace | expectations | computers | | | Editing | cropping | layering | onion layers | enhancing | photo shopping | mixing | composing | | | Spreadsheet | functions | cells | management | formula | editing | data | | Project | algorithm | Gantt Chart | purpose | planning | assessment | tools | flow chart | | | Program | code | debugging | testing | analysing | all coding terms | algorithm | |
|  | | **IMPLEMENTATION** | | | | | | | | | | | |
| **Week 1:** Recap: What do you already know about online safety?  **Week 2:** Phishing and how to spot suspicious emails  **Week 3:** How to spot safe internet sites  **Week 4:** How to report internet sites  **Week 5:** HTTP and HTTPS  **Week 6-7:** Scenarios | | **Week 1:** Recap: IT around us  **Week 2:** What kind of IT can you see in the workplace?  **Week 3:** How IT makes the workplace better/worse  **Week 4:** Communication tools  **Week 5:** Shared working tools  **Week 6-7:** experience of work place IT eg: Tesco scanners | | **Week 1:** Recap: What can we use to take photos and videos?  **Week 2:** Composing photos  **Week 3:** Editing photos  **Week 4:** Review and reflecting on the photos  **Week 5:** Taking a video  **Week 6:** Editing the video  **Week 7:** Reflecting and analysing the video | | **Week 1:** Recap: What are spreadsheets used for and understanding cell location  **Week 2:** Collecting and inputting data  **Week 3:** Organising data  **Week 4:** Formulas  **Week 6:** Cell formatting  **Week 7:** Creating charts | | | **Week 1:** What is the purpose of our program?  **Week 2:** How are we going to meet this purpose and what do we need to do?  **Week 3:** Gantt charts  **Week 4-5:** Creating flow charts of code  **Week 6-7:** understanding key coding concepts e.g.: variables and loops | | **Week 1:** Recap: All of last terms work  **Week 2-4:** Writing the code  **Week 5:** Testing and debugging  **Week 6:** Reviewing and analyse the effectiveness of the project  **Week 7:** Peer assessment | | |