****

**Long Term Mapping**

 **Computer Science (Non GCSE)**

|  |  |  |
| --- | --- | --- |
|  | **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  |

|  |
| --- |
| **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/ mentimeterUsing devicesCalculating storageManaging storageLabelling devices/ partsSorting data | Decoding messagesBuild a network (joining devices)Hangman (passwords)How computers communicate|Making strong passwordsBrute forcing passwords | Sending data SniffingTracing data around the world  | DatabaseManaging dataSnarfingSpyingScenariosGuess the password Making good/bas passwords Being a spy  | ScratchReplitPythonFlow chartsCracking codesEducblocks 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** |

|  |
| --- |
| **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 |