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| **Computing Curriculum Milestone 3** | | | | | | | |
| **Aspect** | **Key Vocabulary** | | **Sticky Facts** | | | **Essential Knowledge** | |
| **SMSC Programme**  Online Safety Curriculum using the EAware Online Programme. | Password  Security  Strong  Weak  Identity theft  Consequences  Characters  Caps lock | | **Passwords**:   * Passwords must not be shared and kept safe so to protect private online information. * To protect yourself online your password must be strong – including up to 12 character and a mixture of caps / symbols /number. * Sharing your password or using obvious personal info can lead to someone using it to access details. | | | **We are online experts**   * Collaborate with others online on sites approved by teachers. * Make safe choices about uses of technology. * Create strong passwords and review them so stay strong. * Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. * Understand the effect of online comments and show responsibility and sensitivity when online. * Recognise unacceptable behaviour and how to report it. * Understand the obvious risk of sharing personal information on line. * Recognise that people posting info on website might not always be accurate. * Some information is copyrighted and can’t be copied. * School has policy and procedures and can report abuse or anything malicious on VLE page or a trusted adult. * Online environments have security settings which can be altered depending on the user. * It is unsafe to arrange a meeting with unknown people. * You should not share people’s images without consent. * Sharing content online is difficult to remove or control. | |
| Gaming  Purchases  PEGI rating  Risk  Communicate  Report  App | | **Games**:   * Computer games have age ratings to show who it is appropriate for. * There are certain risks with on line apps including talking with others online. * People who we talk to online might not be who they say they are. | | |
| Bystander  Upstander  Bullying  Cyberbullying  Empathy | | **Cyberbullying**:   * Cyberbullying is the use of social media platforms / texting to abuse another person and can lasting damaging consequences. * In school you can report online bullying from your VLE or to a trusted adult. * Don’t be a Bystander – be an Upstander (someone who speaks up and supports someone). | | |
| Time  Internet  Balance  Healthy  Lifestyle   * Screen time | | **Time Online**:   * Spending too much time online can have a detrimental effect on health. * It is important to have balance in life. | | |
| Naked  Sexting  Illegal  Consequences  Pressure  Law | | **Naked Images**:   * There are strict laws against sending naked images. * If you feel pressured ever report it to staff using the VLE. | | |
| Social media  Private information  Location setting  Privacy settings  Messaging  Profile | | **Privacy Settings**:   * It is important to keep information online safe. * Social media are websites and applications that enable users to create and share content or to participate in social networking. * You can use privacy setting to keep information safe online. | | |
| **Cycle A** | | | | | | | |
| **Walk Like An Egyptian**  **Networks:**  **To Connect**  **Using Programmes:**  **To Communicate** | * Describe the input, process, and output of a digital system * Know that computer systems communicate with other devices. * I can identify tasks that are managed by computer systems * Explain the benefits of a given computer system. * Refine web searches. * Compare results from different search engines. * Recognise the role of web crawlers in creating an index * Give examples of criteria used by search engines to rank results | | | | **Systems and Searching**   * Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration * Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content | | |
| * Video is a visual media format * Identify and compare different features of selected videos. * Experiment with different camera angles * Use a microphone to add sounds and commentary. * Suggest filming techniques for a given purpose and describe techniques that will be used. * Store, retrieve, and export recordings to a computer * Identify improvement and select tools to edit. * Evaluate my video and share my opinions | | | | **Video Production**   * Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content * Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information * Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | | |
| **Out of this World**  **Programming:**  **To Code**  **Data Handling:**  **To Collect** | * Program a microcontroller to make an LED switch on * Explain what an infinite loop does. * Use a count-controlled loop to control outputs. * Explain that a condition is either true or false . * Design a conditional loop. * Program a microcontroller to respond to an input. * When a condition is met it can start an action. * If…then…’ statement can direct the flow of a program. * Write an algorithm that describes what their model will do * Test and debug their own project. | | | | **Selection in Physical Computing**   * Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts * Use sequence, selection, and repetition in programs; work with variables and various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information | | |
| * Create a database using cards; order group and sort data. * Explain what a field and a record is in a database. * Choose which field to sort data by to answer a given question. * Explain that data can be grouped using chosen values to answer specific questions. * Outline how ‘AND’ and ‘OR’ can be used to refine data selection * Select an appropriate chart to visually compare data and refine using a filter. | | | | **Flat File Database**   * Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. * Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. | | |
| **Traders and Raiders**  **Using Programmes:**  **To Communicate**  **Programming:**  **To Code** | * Vector drawings are made using shapes. * Vector drawings are different from paper-based drawings. * Each element added to a vector drawing is an object * Move, resize, and rotate objects that have been duplicated. * Each added object creates a new layer in a drawing * You can change the order of layers in a vector drawing | | | | **Creating Media using Graphic Vectors**   * Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. | | |
| * Modify a condition in a programme. * Use selection in an infinite loop to check a condition * Identify the condition and outcomes in an ‘if… then… else…’ statement * Program flow can branch according to a condition * Identify the outcome of user input in an algorithm. * Implement an algorithm to create the first section of a program | | | | **Programming: Selection in Quizzes**   * Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts * Use sequence, selection, and repetition in programs; work with variables and various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information | | |
| **Cycle B** | | | | | | | |
| **Endangered**  **Networks:**  **Communicate**  **Using Programmes:**  **Communicate** | * Data is transferred using agreed methods. * Internet devices have addresses. * Data is transferred over networks in packets. * Send information over the internet in different ways * Working together on the internet can be public or private * The internet enables effective collaboration. * There are a variety of ways to communicate over the internet which can suit different purposes. | | | | **Communication and Collaboration**   * Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information * Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | | |
| * There are different types of media used on websites. * Websites are written in HTML. * You should use copyright-free images * Navigation paths are a collection of user interface components that allows visitors to find content; these components can be linked text buttons, or menus. * Multiple web pages can be linked using hyperlinks. | | | | **Web Page Creation**   * Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content * Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. * use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour. | | |
| **Child in Our Time**  **Programming:**  **To Code**  **Data Handling:**  **To Collect** | * In programming, a variable is a value that can change, depending on conditions or on information passed to the program. * Variables can hold numbers or letters and can have a name and a value. * Make use of an event in a program to set a variable * The value of a variable can be used by a program. * Use variables to extend a game. | | | | **Programming: Variables in games**   * Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts * Use sequence, selection, and repetition in programs; work with variables and various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information | | |
| * Choose and apply an appropriate format for a cell. * You can construct a formula in a spreadsheet to include a range of cells. * Within each cell, changing inputs changes outputs. * You can apply a formula to multiple cells by duplicating it. * Spreadsheets can be used to answer questions. * A formula is created to calculate the data you need to answer questions. * In spreadsheets, charts can be used to show the answer of a question. | | | | **Introduction to Spreadsheets**   * Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. | | |
| **Titanic**  **Using Programmes:**  **Communicate**  **Programming:**  **To Code** | * On Tinkercad, you can add 3D shapes, move them and view from different perspectives. * With Tinkercad, you can resize, lift, lower and recolour a 3D object. * You can rotate objects in three dimensions, duplicate and group them. * Objects can be combined to create a design. * Placeholders can be used to create holes in shapes. | | | | **Creating Media; 3D Modelling**   * Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information * Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | | |
| * Programming can be transferred to moveable objects. * The flow of a program can be controlled with a variable in an if, then, else. * You can use a condition to change a variable. * An operand (e.g. <>=)can be used in an if, then statement. * Algorithms act as an exact list of instructions that conduct specified actions step by step. | | | | **Sensing**   * Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts * Use sequence, selection, and repetition in programs; work with variables and various forms of input and output * Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. | | |
| **Key Stage 2 Computing Glossary** | | | | | | | |
| **To Code** | | **To Communicate** | | **To Collect** | | | **To Connect** |
| **Variable:**  A named piece of **data**stored in a computer’s memory, which can be accessed and changed by a **computer program.**  **Subroutine:**  A named sequence of **commands**designed to perform a specific task.  **Selection**:  Part of a **program** where if a **condition** is met, then a set of **commands** is **run.**  **Run (Exceute):**  To action the **commands** in a **program.**  **Repetition:**  Part of a **program** where one or more **commands** are **run** multiple times in a **loop.**  **Procedure:**  A named set of **commands**that can be called multiple times throughout a **program**. This type of **subroutine** does not return a value.  **Loop (Condition Controlled):**  **Commands**that repeatedly **run**a defined section of **code.**  **Loop (Count Controlled):** A **command**that repeatedly **runs**a defined section of **code**a predefined number of times.  **Loop (Infinite):**  A **command**that repeatedly **runs**a defined section of **code**indefinitely.  **Debugging:**  The process of finding and correcting errors in a **program.** | | **Software**:  The **programs**used to control **computers**and perform specific tasks.  **Output Device:**  A piece of **hardware that** is controlled by **outputs**from a **computer.**  **Input Device:**  A piece of **hardware**used to control, or send **data** to, a **computer.**  **Hardware:**  The physical parts of a **computer system.**  **Digital Device:**  The physical parts of a **computer system.**  **Computer System:**  A combination of **hardware** and **software** that can have **data** **input** to it, which it then **processes** and **outputs**. It can be **programmed** to perform a variety of tasks. | | * **Tab:** * An organizational unit in a spreadsheet. * **Spreadsheet**: * The entire collection of data. * **Row**: * A horizontal collection of cells   **Formula:**   * An equation based on multiple cells. * .   **Data Set:**  A collection of related **data.**  **Data:**  A letter, word, number etc. that has been collected for a purpose, but **stored** without context.   * **Cell:** * The building blocks of a spreadsheet. * **Column**:: * A vertical collection of cells. | | | **World Wide Web**:  A service provided via the internet that allows access to web pages and other shared files.  **WAP (Wireless Access Point):**  A network device that allows wireless computing devices to connect to a wired **network**  **WiFi:**  A technology that allows devices to wirelessly access a **network**and transfer **data.**  **Website:**  A collection of interlinked **web pages**, stored under a single **domain.**  **Web Page:**  A **HTML**document viewed using a **web browser.**  **Web browser:**  A**program** used to view, navigate, and interact with**web pages.**  **URL (Uniform Resource Locator):**  The address of a file on the **internet.**  **Network Switch:**  A device that manages the flow of **data packets** within a **computer network.**  **Server:**  A networked **computer**that manages, **stores,**and provides **data**such as files to other computers.  **Router**:  A device that manages the flow of data between **computer networks.**  **Hyperlink:**  Text or media that when clicked, takes the user to another specified location (**URL**).  **HTMP (Hyper Text Mark up language):**  A standardised language used to define the structure of **web pages.**  **Computer Network:**  A group of interconnected computing devices. |