|  |
| --- |
| **Computing Curriculum Milestone 3** |
| **Aspect**  | **Key Vocabulary** | **Sticky Facts** | **Essential Knowledge**  |
| **SMSC Programme**Online Safety Curriculum using the EAware Online Programme.  | PasswordSecurityStrong WeakIdentity theftConsequencesCharactersCaps 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.
 |
| GamingPurchasesPEGI rating Risk Communicate ReportApp | **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.
 |
| BystanderUpstanderBullying 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 BalanceHealthyLifestyle * 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. |