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| **Computing Curriculum Milestone 2** |
| **Aspect**  | **Key Vocabulary** | **Sticky Facts** | **Essential Knowledge**  |
| **SMSC Programme**Online Safety Curriculum using the EAware Online Programme. | Upload Permanent Permission Edit Digitally manipulated | **Photos:** * When a photo is uploaded to the internet it I there forever.
* You should always ask the persons permission before uploading an image.
* Some pictures on the internet have been edited.
 | * **Use EAware programme to remain safe with online.**
* Give examples of the risks posed by online communications.
* Understand the term ‘copyright’.
* Understand that comments made online that are hurtful or offensive are the same as bullying.
* Understand the rules for keeping safe online when sharing ideas.
* Recognise that all the information online may not be accurate or reliable.
* Understand the idea of copyright on certain text / images on the internet.
* Understand the need to keep their passwords private.
* Understand if they share things online it may be seen by others.
* Know how to respond if asked for personal information online.
* Recognise that cyber bullying is not acceptable and know how to report an incident.
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| Time Internet BalanceHealthy Lifestyle Screen time | **Time Online:** * Spending too much time on line can have a detrimental effect on your health.
* It’s important to have a healthy balance in life.
* It is important to spread time between activities effectively.
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| Fake Pretend Links Phishing Searching SPAM | **Things are not always as they seem:*** What we see on line is not always what we think.
* It is easy for people to lie on line.
* It is possible to be tricked into doing thing on line.
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| Bullying Cyberbullying Consequences Citizenship Responsible  | **Cyberbullying**:* Cyberbullying is the use of technology to harass, threaten, embarrass, or target another person.
* There are dangers online and there are several ways to keep safe.
* There are several consequences to cyber bullying.
* In school we have an openness to discuss cyberbullying.
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| PasswordPersonal Strong Weak Identify theft | **Passwords**: * We must keep our personal information safe online.
* Without a strong password, our information online is at risk.
* A good password should be unique, never written down; 12 character at least; mix with caps lock, symbols or numbers; no personal info; never shared with anyone.
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| Online Real LifeCommunicateSafely Personal Relationship | **Friends**: * There is a difference between real friends and online friends.
* We must stay safe when communicating online and not share personal details.
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| **Cycle A** |
| **Dungeons and Dragons****Networks:****To Connect****Using Programmes:****To Communicate** | * Digital devices accept inputs and can produce outputs.
* Suggest differences between using digital devices and using non-digital tools.
* Explain how messages are passed through multiple connections.
* A network switch is needed because they keep traffic between two devices from getting in the way of other devices on the same network
* Switches allow you to control who has access to various parts of the network and you can monitor usage.
* A computer network is made up of a number of devices.
 | **Connecting Computers*** Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
* 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.
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| * An animation flipbook uses images, which progress gradually in position from one page to the next. These images then create the impression of movement when you flick through.
* Little changes for each frame give the impression of movement.
* The storyboard is a series of images that map the key events of the story, presented chronologically.
* Onion skinning in animation is an editing technique used to see several frames of an animation simultaneously.
 | **Creating Media – Stop Go Animation** 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 informationUse technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. |
| **A Street in Our Time****Programming:****To Code** | * Commands in Scratch are represented as blocks.
* A sprite is an image that can be programmed.
* The stage is the background and a back drop is an image that can be shown in the stage area.
* An algorithm is a sequence of step-by-step instructions to solve a problem.
* Algorithms can be written in code, or be a sequence of blocks
 | **Programming – Sequencing Sounds*** 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.
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| **Data Handling:****To Collect** | * A branching database is a way of classifying a group of objects – also called a binary tree.
* To separate objects, create questions based on certain attributes that require a yes / no answer.
* Questions need to be ordered carefully in order to get similar sized groups.
 | **Branching Databases*** 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
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| **Gods and Mortals****Using Programmes:****To Communicate****Programming:****To Code** | * Simple text can be changed quickly by an administrator. Images, on the other hand, need to be designed, created, and uploaded before being used.
* Text and images can communicate messages clearly.
* You can change font style, size, and colours for a given purpose and then edit text.
* MS Word offers two page orientation options: landscape and portrait.
* Fields in Microsoft Word are used as placeholders for data that might change in a document.
* You can copy (Ctrl-C) and paste (Ctrl-V) images and text on a word document.
 | **Creating Media – Desktop Publishing*** 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.
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| * An action is the result from the execution of a function whereas an event can occur spontaneously.
* To make a sprite move, go to “MOTION” and select “go to x and y” and change the co-ordinates.
* For movement, you can choose keys on the keyboard.
 | **Programming: Events and Actions in Programmes*** 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
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| **Cycle B** |
| **It All Started in a Cave****Networks:****Communicate****Using Programmes:****Communicate** | * The internet is a network of networks
* A computer network uses cables, wireless signals, or fibre optics to enable devices to communicate and share resources.
* Network security is important because it keeps sensitive data safe from cyber-attacks and ensures the network is usable and trustworthy.
* The World Wide Web contains websites and web pages
* Servers are computers that store webpages, sites, or apps.
* The internet can be used to create content online.
* Web media is a form of communication that uses audio, text, and visuals on the web.
* Some information on line may not be honest
 | **The Internet*** 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
* 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.
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| * An input device (microphone) and output devices (speaker or headphones) are required to work with sound digitally.
* You can edit sound recordings by trimming the sound wave.
* A podcast is a digital medium consisting of audio (or video) episodes that relate to a specific theme.
* Audacity is a free digital audio editor and recording application software.
* You can export you audio recordings to different devices.
 | **Creating Media – Audio 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
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| **Great Adventures****Programming:****To Code****Data Handling:****To Collect** | * A code snippet is a reusable block of code.
* Explain the effect of changing a value of a command.
* In coding, you can use repetition such as a count controlled loop (A command that repeatedly runs a defined section of code a predefined number of times).
* Debugging is the process of finding and fixing errors or “bugs” in the source code of any algorithm.
 | **Programming: Repetition in Shapes*** 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.
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| * Certain data sets can answer a given question.
* A digital device can use a sensor to collect data.
* Data can be viewed in different ways – such as charts and graphs.
* A data logger is an electronic device that records data over time or about location either with a built-in instrument or sensor.
 | **Data Logging*** Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
* 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.
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| **They Came, They Saw, They Conquered****Using Programmes:****Communicate****Programming:****To Code** | * Photo editing software can edit / improve an image.
* Images can be rotated.
* Cropping is the process of removing a piece of an image in order to improve it.
* In digital image processing the clone tool is used to copy one part of an image over another part.
 | **Creating Media: Photo Editing** * 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.
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| * An infinite loop is a command that repeatedly runs a defined section of code indefinitely.
* Different parts of a loop can be changed.
* You can re-use code snippet for different sprites.
 | **Programming: Repetition 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.
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| **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:****Commands**that repeatedly **run**a defined section of **code.****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. | **Template:**A pre-built database table formatted with categories. **Table:**The main function of a table in a database is to organize and store data. Tablesare arranged in rows and columns,**Report:**Shows data for printing, display, or interaction and is selected from one ormore tables.**Query:**A process for pulling data from tables for informational or reporting purposes.**Field:**The location for a piece of data or information.**Data Set:**A collection of related **data.****Data:**A letter, word, number etc. that has been collected for a purpose, but **stored** without context. | **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**).**HTML (Hyper Text Mark up language):**A standardised language used to define the structure of **web pages.****Computer Network:**A group of interconnected computing devices. |