**CYCLE A**

|  |  |  |  |
| --- | --- | --- | --- |
| **Computing** | **KS1**  **Year 1 & Year 2** | **LKS2**  **Year 3 & Year 4** | **UKS2**  **Year 5 & Year 6** |
| **AUTUMN** | **Unit Name:** Improving Mouse Skills   **Use technology purposefully** to create, organise, store, manipulate and retrieve digital content.   **Recognise common uses** of information technology beyond school.  **Unit Name:** Algorithms Unplugged   **Understand what algorithms are**; how they are implemented as programs on digital devices.   **Create and debug simple programs**.   **Use logical reasoning** to predict the behaviour of simple programs. | **Unit Name:** Online Safety   Understand how to use technology safely, respectfully, and responsibly, recognising acceptable/unacceptable behaviour.   Identify a range of ways to report concerns about content or contact online.  **Unit Name:** Computer Systems and Networks   Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web.   Learn how information is transferred over the internet and explore different types of communication. | **Unit Name:** Mars Rover 1   **Understand what algorithms are**; how they are implemented as programs on digital devices.   **Use logical reasoning** to predict the behaviour of simple programs.   **Recognise common uses of information technology** beyond school.  **Unit Name:** Mars Rover 2   **Understand what algorithms are**; how they are implemented as programs on digital devices.   **Create and debug simple programs**.   **Use logical reasoning** to predict the behaviour of simple programs.   **Recognise common uses of information technology** beyond school. |
| **SPRING** | **Unit Name:** Rocket To The Moon   **Understand what algorithms are**; how they are implemented as programs on digital devices.   **Create and debug simple programs**.   **Use logical reasoning** to predict the behaviour of simple programs.   **Recognise common uses of information technology** beyond school.  **Unit Name:** What is a computer?   **Recognise common uses of information technology** beyond school.   **Identify the main parts of a computer** and their uses.   **Use technology purposefully** to create, organise, store, manipulate, and retrieve digital content. | **Unit Name:** Programming   Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems.   Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. | **Unit Name:** Bletchley Park   **Design, write, and debug programs** that accomplish specific goals, including controlling or simulating physical systems.   **Use logical reasoning** to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.   **Understand how search technologies work** and how to use them effectively.   **Understand the concept of abstraction** (simplifying complex systems) and how it is applied in programming.  **Unit Name:** History of Computers   **Understand how computers and digital devices have changed over time**, recognising the major developments in the history of computing.   **Recognise the impact of technology on society**, including the evolution of the internet and digital communication.   **Use technology purposefully** to create, organise, store, manipulate, and retrieve digital content. |
| **SUMMER** | **Unit Name:** Algorithms and Debugging   **Understand what algorithms are**; how they are implemented as programs on digital devices.   **Create and debug simple programs**.   **Use logical reasoning** to predict the behaviour of simple programs.  **Unit Name:** Word Processing   **Use technology purposefully** to create, organise, store, manipulate, and retrieve digital content.   **Recognise common uses of information technology** beyond school. | **Unit Name:** Programming 2   Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems.   Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.  **Unit Name:** Data Handling   Select, use, and combine a variety of software to collect, analyse, evaluate, and present data and information.   Explore databases, spreadsheets, or other digital tools to organize and represent data meaningfully. | **Unit Name:** Micro:bit   **Design, write, and debug programs** that accomplish specific goals, including controlling or simulating physical systems.   **Use logical reasoning** to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.   **Understand how to use a range of input and output devices** (e.g., sensors, motors) to create interactive projects.   **Select, use, and combine a variety of software** (including internet services) on a range of digital devices to design and create content for a given purpose.  **Unit Name:** Inventing a Product   **Design, write, and debug programs** that accomplish specific goals, including controlling or simulating physical systems.   **Use logical reasoning** to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.   **Understand how to use a range of input and output devices** (e.g., sensors, motors) to create interactive projects.   **Select, use, and combine a variety of software** (including internet services) on a range of digital devices to design and create content for a given purpose.   **Recognise the role of technology** in product design and development, including how prototypes are tested and refined. |
| The depth thread is …  Teach – Practice - Repeat |  **Understand and apply key computing concepts**, such as programming, algorithms, data management, and the functioning of digital systems, enabling them to solve problems and create innovative digital content.   **Be equipped with a variety of digital skills**, including coding with Scratch, Python, and understanding basic web design (HTML), preparing them for future learning and potential careers in the ever-evolving tech landscape.   **Be critical thinkers and responsible users of technology**, using search engines effectively, recognizing the importance of online safety, and understanding the ethical and moral implications of digital choices.   **Be collaborative learners**, working in teams on projects like stop-motion animation or collaborative data analysis, fostering communication, teamwork, and problem-solving skills.   **Appreciate the power of creativity in digital media**, developing personal expression through projects like programming music, animation, and creating digital content, thus nurturing their creative confidence.  **Ultimately, our goal is for children to leave the academy not only with technical skills but also with a strong sense of how technology can be used ethically, creatively, and responsibly.** | | |
| SMSC development – Spiritual, Moral, Social, Cultural | 1. **Spiritual Development** In units such as **Stop Motion Animation** and **Programming Music**, students are encouraged to explore their creativity and self-expression through technology. This process fosters a sense of wonder and imagination, allowing students to create unique projects that reflect their personal ideas and interpretations, encouraging their spiritual development by appreciating the power of human creativity and expression. 2. **Moral Development** In the **Networks and the Internet** unit, students learn about the importance of online safety, respectful communication, and responsible use of technology. This promotes moral development by encouraging students to consider the ethical implications of their actions online, such as respecting others' privacy and understanding the impact of their digital presence.   These aspects of SMSC development are threaded throughout the curriculum, enabling students to grow in a holistic way as responsible, ethical, and creative digital citizens. | | |

**CYCLE B**

|  |  |  |  |
| --- | --- | --- | --- |
| **Computing** | **KS1**  **Year 1 & Year 2** | **LKS2**  **Year 3 & Year 4** | **UKS2**  **Year 5 & Year 6** |
| **AUTUMN** | **Unit Name:** Bee Bots   **Understand what algorithms are**; how they are implemented as programs on digital devices.   **Create and debug simple programs**.   **Use logical reasoning** to predict the behaviour of simple programs.  **Unit Name:** Digital Imagery   **Use technology purposefully** to create, organise, store, manipulate, and retrieve digital content.   **Recognise common uses of information technology** beyond school. | **Unit Name:** Online Safety   Understand how to use technology safely, respectfully, and responsibly, recognising acceptable/unacceptable behaviour.   Identify a range of ways to report concerns about content or contact online.  **Unit Name:** Computer Systems and Networks   Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web.   Learn how information is transferred over the internet and explore different types of communication. | **Unit Name:** Programming Music   **Design, write, and debug programs** that accomplish specific goals, including controlling or simulating physical systems.   **Use logical reasoning** to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.   **Understand how technology can be used to create and manipulate music**, including the use of digital tools and software.  **Unit Name:** Stop Motion Animation   **Use technology purposefully** to create, organise, store, manipulate, and retrieve digital content.   **Recognise common uses of information technology** beyond school.   **Design, create, and present digital content** through stop-motion animation, developing creativity and technical skills. |
| **SPRING** | **Unit Name:** Introduction to Data   **Use technology purposefully** to create, organise, store, manipulate, and retrieve digital content.   **Understand the concept of data** and how it can be collected, organised, and presented.  **Unit Name:** Scratch Jr   **Understand what algorithms are**; how they are implemented as programs on digital devices.   **Create and debug simple programs**.   **Use logical reasoning** to predict the behaviour of simple programs. | **Unit Name:** Computer Systems and Networks   Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web.   Learn how information is transferred over the internet and explore different types of communication. | **Unit Name:** Search Engines   **Understand how search engines work**, including how they index and rank web pages.   **Use search engines effectively** to find reliable and relevant information.   **Use technology purposefully** to search for, evaluate, and present information from the internet.  **Unit Name:** Big Data 1   **Understand how large data sets are created**, managed, and analysed.   **Use technology purposefully** to collect, store, and analyse data.   **Recognise the importance of data in decision-making**, including how businesses and organizations use data to inform their practices. |

|  |  |  |  |
| --- | --- | --- | --- |
| **SUMMER** | **Unit Name:** Stop-Motion   **Use technology purposefully** to create, organise, store, manipulate, and retrieve digital content.   **Recognise common uses of information technology** beyond school.  **Unit Name:** International Space Station   **Recognise common uses of information technology** beyond school.   **Use technology purposefully** to create, organise, store, manipulate, and retrieve digital content. | **Unit Name:** Programming 2   Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems.   Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.  **Unit Name:** Creating Media   Use technology purposefully to create, organise, store, manipulate, and retrieve digital content.   Understand how to edit and combine different types of media (text, images, audio) for presentation and communication purposes. | **Unit Name:** Big Data 2   **Understand how large data sets are created**, managed, and analysed.   **Use technology purposefully** to collect, store, and analyse data.   **Recognise the importance of data in decision-making**, including how businesses and organizations use data to inform their practices.   **Understand how to present and interpret data** using digital tools, such as graphs or charts.  **Unit Name:** Introduction to Python   **Design, write, and debug programs** that accomplish specific goals, including controlling or simulating physical systems.   **Use logical reasoning** to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.   **Understand the concept of variables, loops, and conditions** in programming. |
| The depth thread is …  Teach – Practice - Repeat | **Understand and apply key computing concepts**, such as programming, algorithms, data management, and the functioning of digital systems, enabling them to solve problems and create innovative digital content.   **Be equipped with a variety of digital skills**, including coding with Scratch, Python, and understanding basic web design (HTML), preparing them for future learning and potential careers in the ever-evolving tech landscape.   **Be critical thinkers and responsible users of technology**, using search engines effectively, recognizing the importance of online safety, and understanding the ethical and moral implications of digital choices.   **Be collaborative learners**, working in teams on projects like stop-motion animation or collaborative data analysis, fostering communication, teamwork, and problem-solving skills.   **Appreciate the power of creativity in digital media**, developing personal expression through projects like programming music, animation, and creating digital content, thus nurturing their creative confidence.  **Ultimately, our goal is for children to leave the academy not only with technical skills but also with a strong sense of how technology can be used ethically, creatively, and responsibly.** | | |
| SMSC development – Spiritual, Moral, Social, Cultural | 1. **Spiritual Development** In units such as **Stop Motion Animation** and **Programming Music**, students are encouraged to explore their creativity and self-expression through technology. This process fosters a sense of wonder and imagination, allowing students to create unique projects that reflect their personal ideas and interpretations, encouraging their spiritual development by appreciating the power of human creativity and expression. 2. **Moral Development** In the **Networks and the Internet** unit, students learn about the importance of online safety, respectful communication, and responsible use of technology. This promotes moral development by encouraging students to consider the ethical implications of their actions online, such as respecting others' privacy and understanding the impact of their digital presence.   These aspects of SMSC development are threaded throughout the curriculum, enabling students to grow in a holistic way as responsible, ethical, and creative digital citizens. | | |