|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Topic 1** | | | **Topic 2** | | **Topic 3** | | |
| **5** | **Computing systems and networks – Sharing information** | | | **Programming – Kodu** | | **Creating media – Vector drawing** | | |
| **Learning Foci:** | * E-safety * To explain that computers can be connected together to form systems * To recognise the role of computer systems in our lives * To recognise how information is transferred over the internet | | | * To create an interactive game using simple programming blocks * To create opponents based upon logic * To use a variable to keep score. | | * To identify that drawing tools can be used to produce different outcomes | | |
|  | **Topic 1** | **Topic 2** | **Topic 3** | | **Topic 4** | | **Topic 5** | **Topic 6** |
| **6** | **Computing systems and networks – Communication** | **Creating media – Web page creation** | **Data and information – Spreadsheets** | | **Programming B – Selection in quizzes** | | **Creating media – 3D Modelling** | **Programming A – Variables in games** |
| **Learning Foci:** | To identify how to use a search engine | To review an existing website and consider its structure | To identify questions which can be answered using data  something that is changeable | | To explain how selection is used in computer programs | | To use a computer to create and manipulate three-dimensional (3D) digital objects  **1 week E-safety** – What is real on the internet? Photo editing. | To define a ‘variable’ as something that is changeable |
| **7** | **Computational Thinking & Flowcharts** | **Programming – Scratch – an introduction** | **Hardware and Computer Systems & Binary** | | **Introduction to Python** | | **Online safety: Viruses, password security and digital footprints** | **Programming a BBC Micro:Bit – Scratch and Python – Pseudocode Introduction** |
| **Learning Foci:** | To identify the 4 key concepts of computing: Decomposition, Pattern Recognition, Abstraction and Algorithms.  To use flowcharts to represent computing processes and basic logic. | To use Scratch to program a sprite.  To use code build blocks to consider, input, output, loops and waits. | To understand that computers come in many forms.  To recognise inputs, processing, storage and outputs.  To convert basic binary numbers (binary to denary)  To understand how computers use binary to complete calculations. | | To construct and debug a simple program in Python that can respond to user input.  To use If, Else and Elif. | | To build an awareness of the issues surrounding computer viruses, poor password security and their ever-increasing digital footprint | To use a physical microprocessor device to create programs that respond to user input and use the display of the Micro:Bit for output. |
| **8** | **Computer networks and the Internet** | **Representing data: images, sound and text** | **HTML 4 and CSS: an introduction** | | **Python: Drawing** | | **Online safety: Cyberbullying, grooming, sexting and selfies** | **Python: Numbers** |
| **Learning Foci:** | To understand the purpose of networks and their advantages and disadvantages.  To recognise the following key words: topologies, LANs, WANs, data packets and routing. | To understand how images, sound and text are processed by computers. To link this to their underlying understanding of binary.  To understand the difference between digital and analogue signals.  Key words: Bitmap, Pixel, Vector, digital, analogue, ASCII. | To construct a website of 3-4 pages using a combination of HTML (Hypertext Mark-Up Language) and external CSS (Cascading Style Sheets). | | To draw a variety of shapes using python coding.  To use a variety of line thicknesses and colours.  To code efficiently using FOR loops and functions. | | * To know what cyberbullying is and how to recognise it. To give ideas to support someone with cyberbullying. * To understand the term ‘online grooming’ and to understand how to reduce the chances of becoming a victim. | To create python programs including BODMAS and the 4 operators (+,-,/,\*)  To use integers and floats to create a simple calculator program.  To create a computer game using integer variables and random numbers. |