**Hillside Computing Curriculum Overview 2024**

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|  | **EYFS Curriculum Links** |
| **Reception** | **Links with Barefoot Computing skills evidenced through the rest of the EYFS.**  **Collaboration:** ELGs related to speaking, listening and building relationships.  **Creating:** ELGs related to expressive arts and design  **Tinkering:** ELGs related to creating with materials, fine and gross motor skills.  **Persevering:** ELGs related to self-regulation and managing self.  **Pattern:** ELGs related to numerical patterns and creating with materials.  **Logical Reasoning:** ELGs related to understanding the world (asking how and why questions) and numerical patterns.  **Abstraction:** Self-regulation, creating with materials.  **Algorithms:** Comprehension, numerical patterns.  **Decomposition:** Creating with materials, comprehension, self-regulation |

**Key Stage 1**

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|  | **Topic 1** | **Topic 2** | **Topic 3** | **Topic 4** | **Notes** |
| **Y1** | **Systems and networks:**  **Technology Around Us**  Recognising technology  in school and using  it responsibly. | **Programming A:**  **Moving**  **a robot**  Writing short  algorithms and  programs for floor  robots, and predicting  program outcomes. | **Creating Media:**  **Digital**  **Writing**  Type on a keyboard and begin using tools to change the look of the text. | **Handling Data:**  **Grouping**  **data**  Exploring object  labels, then using  them to sort and  group objects by  properties. |  |
| **Y2** | **Systems and networks:**  **Short unit**  **Information technology**  **around us**  Identifying IT and how  its responsible use  improves our world in  school and beyond. | **Creating Media:**  **Digital**  **photography**  Capturing and  changing digital  photographs for  different purposes. | **Programming:**  **Robot**  **algorithms**  Creating and  debugging programs,  and using logical  reasoning to make  predictions. | **Programming B (Year 1 unit):**  **Programming**  **animations**  Understand sprites and backgrounds. Use programming blocks to use, modify, and create programs. | **Extension:** could begin to look at ‘quizzes’ in Scratch. |

**Key Stage 2**

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|  | **Topic 1** | **Topic 2** | **Topic 3** | **Topic 4** | **Notes** |
| **Y3** | **Systems and networks:**  **Connecting**  **computers**  Identifying that digital  devices have inputs,  processes, and outputs,  and how devices can  be connected  to make networks. | **Programming A:**  **Sequencing sounds**  Creating sequences  in a block-based  programming  language to  make music. | **Handling Data:**  **Branching databases**  Building and  using branching  databases to group  objects using  yes/no questions. | **Creating Media:**  **Stop-frame**  **animation**  Capturing and editing  digital still images to  produce a stop-frame  animation that  tells a story. | **Programming B:**  **Events and actions in programs (Scratch intro to KS2 – sprite/background**  **1 or 2 lessons)** |
| **Y4** | **Creating Media:**  **Audio editing**  Capturing and editing  audio to produce a  podcast, ensuring  that copyright  is considered. | **Programming A:**  **Repetition in shapes**  Using a block-based  programming  language to explore  count-controlled  loops when  drawing shapes. | **Creating Media:**  **Photo editing**  Manipulating digital  images, and reflecting  on the impact of  changes and whether  the required purpose  is fulfilled. | **Programming B:**  **Repetition in games**  Using a block-based  programming  language to explore  count-controlled and  infinite loops when  creating a game. | Complete practical lesson from **Systems and networks:**  **The Internet** |
| **Y5** | **Systems and networks:**  **Systems and Searching**   Learn how information is transferred between systems and devices. Explain the input, output, and process aspects of a variety of different real-world systems. Learners how to use advanced features to perform precise searches | **Creating Media:**  **Video production**  Create short videos working in pairs or groups. Develop the skills of capturing, editing, and manipulating video. Reflect on and assess their progress in creating a video. | **Programming A:**  **Selection in physical computing**  Use microcontroller (Crumble controller) connect and program components (including output devices- LEDs and motors). Make use of repetition and conditions when introduced to the concept of selection (through the if, then structure). | **Programming B:**  **Selection in quizzes**  Learn how the If… Then… Else structure can be used to select different outcomes depending on whether a condition is true or false. Constructing programs using Scratch to design a quiz. |  |
| **Y6** | **Programming A:**  **Variables in games**  Exploring variables  when designing and  coding a game. | **Handling Data:**  **Introduction to**  **spreadsheets**  Answering  questions by using  spreadsheets  to organise and  calculate data. | **Creating Media:**  **3D modelling**  Planning, developing,  and evaluating 3D  computer models of  physical objects. | **Programming B:**  **Sensing**  Designing and coding  a project that  captures inputs from  a physical device. |  |