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**Knowledge Rich Curriculum Plan**

Year 7 - Topic 5: Physical Computing



| **Lesson/Learning Sequence** | **Intended Knowledge:**  *Students will know that… Students will know how to…* | **Tiered Vocabulary** | **Prior Knowledge:**  *In order to know this… Students need to already know that…* | **Assessment** |
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| **1** | * That Micro:Bit uses blocks to build up a program. * What an emulator is and how it is used to run the program. * How to use the blocks to get a program to repeat of iterate. | Animated  LEDs  Representation  Blocks  Program  Binary  Emulator  Iterate | * About block based programming which they created when using Scratch. * That lights (binary) can be used to represent images. | Questioning  Worksheet |
| **2** | * There are 4 different inputs that can be used on a Micro:Bit. * That a program can have different inputs to produce different outcomes. * That a completed program can be downloaded and run on a Micro:Bit device. | Input  Program  Outcomes  Selection  Execute  Device  Download | * That Micro:Bit uses blocks to build up a program. * That a Micro:Bit has 25 LEDs (lights) which can be used to represent images. | Retrieval Task  Questioning  Worksheet |
| **3** | * That variables will be created to generate random numbers. * That IF statements will be used to create different outcomes. | Generate  Randomise  Outcomes  Variables  IF Statements  Download | * How the Rock, Paper Scissors game works and what beats what. * How to download and send the program on to a Micro:Bit device. | Knowledge Check Quiz  Retrieval Task  Worksheet |
| **4** | * That a string is a programming term used for text. * That IF statements use Else If and Else to create more possible outcomes. | Text  Values  Randomise  Outcomes  Variable  String  IF Statements | * That a Magic 8 Ball provides random answers to questions. * That a variable is a value which can change. | Retrieval Task  Questioning  Worksheet |
| **5** | * What an accelerometer is and what it is used for. * How variables will be used in different programs. | Project  Graphical  Direction  Thermometer  Variable  Accelerometer  Simulate | * That there are different inputs which can be used on a Micro:Bit device. * That IF blocks can be extended to include more Else If and Else options. | Retrieval Task  Questioning  Worksheet |
| **6** | * Students will know how to answer the end of unit assessment using their prior knowledge. * Students will know how to improve on their work from previous lessons in the unit. | Students will need to use all of the vocabulary from the previous lessons. | * Students need to know all of the intended knowledge from the previous lessons in the unit. | End of Unit Assessment  Student Response Task |