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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.
 | AnimatedLEDsRepresentationBlocksProgramBinaryEmulatorIterate | * About block based programming which they created when using Scratch.
* That lights (binary) can be used to represent images.
 | QuestioningWorksheet |
| **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.
 | InputProgramOutcomesSelectionExecuteDeviceDownload | * 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 TaskQuestioningWorksheet |
| **3** | * That variables will be created to generate random numbers.
* That IF statements will be used to create different outcomes.
 | GenerateRandomiseOutcomesVariablesIF StatementsDownload | * 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 QuizRetrieval TaskWorksheet |
| **4** | * That a string is a programming term used for text.
* That IF statements use Else If and Else to create more possible outcomes.
 | TextValuesRandomiseOutcomesVariableStringIF Statements | * That a Magic 8 Ball provides random answers to questions.
* That a variable is a value which can change.
 | Retrieval TaskQuestioningWorksheet |
| **5** | * What an accelerometer is and what it is used for.
* How variables will be used in different programs.
 | ProjectGraphicalDirectionThermometerVariableAccelerometerSimulate | * 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 TaskQuestioningWorksheet |
| **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 AssessmentStudent Response Task |