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**Knowledge Rich Curriculum Plan**

Year 7 - Topic 4: Block Based Programming



| **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 Scratch uses blocks to build up a program. * How to create basic actions for a character to move, animate and say something. * How each of these skills could be used when creating a game. | Characters  Actions  Animate  Blocks  Program  Manual Navigation  Execute  Debug | * The basics of games including the characters and their actions. * That characters can be moved with arrow keys or WASD. | Questioning  Worksheet |
| **2** | * That Scratch uses blocks to build up a program. * How to create different methods for the characters to move and a way to keep score. * How each of these skills could be used when creating a game. | Score  Points  Sequence  Automatic Navigation  Variable  Execute  Debug | * That characters in a game can move without the user controlling them. * That games have scoring elements where they can score points. | Retrieval Task  Questioning  Worksheet |
| **3** | * How to create a background such as a maze and make it interact with the character. * That conditions can be used in programming to win or restart the game. | Background  Interact  Checkpoint  Sequence  Input/Output  Conditions  Iteration  Execute  Debug | * How to make a character move in different directions using blocks. * That there are parts of games such as walls that characters can’t move through. | Knowledge Check Quiz  Retrieval Task  Worksheet |
| **4** | * About variables and how they can be used for lives in a game. * That conditions can be used in programming to win a game by reaching an object or losing in a game when the variable for lives reaches 0. | Lives  Sequence  Conditions  Variable  Execute  Debug | * How to program a character move in different directions using blocks. * How to program a character win the game by reaching an object. * That games can use lives and what happens when all the lives are gone. | Retrieval Task  Questioning  Worksheet |
| **5** | * That variables can be used for aspects such as lives and score. * That calculations such as addition can be used with variables to give a points total. * How to program interactive objects by making them appear and disappear. | Interactive  Lives  Score  Sequence  Selection  Variable  Execute  Debug | * How to program a character move in different directions using blocks. * How to create a variable block and use it in their program. | 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 |