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| UNIT 00 – HUNTER 2022 LESSON | |
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| L01 – IF/ELSE Conditional Reasoning | |
| PRIOR KNOWLEDGE | -"SEQUENCING" in a basic flow chart |
| OBJECTIVE | I can evaluate and apply conditional statements to control the flow of a program. |
| SWBAT | By the end of this lesson, students will be able to:<br>-Define and give an example of "conditional statements"<br>-Read a script and identify what the IF condition is asking for, what will happen IF TRUE, and what will happen ELSE<br>-Use IF/ELSE logic to solve a programming puzzle |
| MATERIALS | |
| GROUPING | |
| LEARNING SUPPORTS | Graphical organizers, Flowcharts, SNAP! |
| ASSESSMENT | Apply conditional logic: students correctly describe & phrase a condition that will control the given code snippet<br>Evaluate conditional: students correctly give arguments that will evaluate to true/false in their condition (and can identify which is which) |
| APCS Principles Framework | LO 4.1.1 Develop an algorithm for implementation in a program.<br>EK 4.1.1A Sequencing, selection, and iteration are building blocks of algorithms.<br>EK 4.1.1B Sequencing is the application of each step of an algorithm in the order in which the statements are given.<br>EK 4.1.1C Selection uses a Boolean condition to determine which of two parts of an algorithm is used. |
| REFERENCES | |

| TIME | AGENDA | QUESTIONS/CFUs/MISUNDERSTANDINGS |
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| 10 | WARM UP<br><br>-Board has flowchart symbols/shapes up and requests students to mark down what each symbol/shape is used for. | |
| | MINI LESSON + CONDITIONAL SIMON SAYS<br><br>-Teacher defines "conditional"<br><br>-Simon Says: IF you are wearing RED stand up.<br><br>-Simon Says: IF you are wearing BLUE stand up. Otherwise, raise your hand.<br><br>********<br>INCLUDE VISUAL OF IF/ELSE FLOWCHART SHAPE | *Q: What types of real world "conditional" statements are you familiar with? (Student answers; things like "If you make honor roll we will go to Disney" or "If you are over 18 you can vote."*<br>*Q: What was the condition that needed to be met? How did students react when it was met? How did students react when it wasn't met?*<br><br>*Q: How was this different from the first conditional we practiced? How did students react when the condition was true? When it wasn't true?* |
| 30 | YOU TRY<br><br>-Students get sample/deconstructed script with basic conditional:<br>ASK a math question;<br>IF correct answer is given, THEN<br>congratulate user;<br>ELSE | *Q: What is the intention of this program?*<br>*Q: What is the condition that must be met?*<br>*Q: How are you deciding which response is returned for a true condition, and which for otherwise?*<br><br>MIS: Students may not initially use correct answer as IF condition (i.e. they may input a wrong answer so that the program will state the answer is incorrect) – *Q: How many* |

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| | state answer is incorrect. | *wrong answers are there for this math question? How many correct answers? Which one is more specific/easier to plan for?* |
| | CHECK-IN<br>-Student demonstrates correct solution to You Try mini puzzle<br>-Students self-check<br>-Teacher checks in with students whose program did not match correct solution | *CFU/MIS: If a student is choosing an incorrect result, check that they are not mixing up the intention of the statement. Be sure that syntax (if any) is concise and clear.* |
| | PRACTICE<br>-Students create a series of scripts to satisfy flowcharts using IF/ELSE statements<br>-Students draw flowcharts for simple conditional scripts<br>-Teacher circulates and assists | *Q: How does this script use the IF/ELSE logic similarly to our You Try? What is different about this?*<br>*Q: What is the intention of this script? What is the condition that must be met?*<br>*Q: What is the purpose of the "forever" block in these scripts?* |
| 5 | EXIT SLIP & LOG OUT<br>-Provided a script with the condition missing, complete a reasonable condition to control flow.<br>-Select an input value that will achieve a specified outcome in the provided script. | <u>Exit Slip Rubric:</u><br>1 pt: Add an appropriate condition<br>2 pt: Accurately select an input that will achieve the specified outcome based on the chosen condition. |