

## Year 7 Computer Science Programming Essentials 1 Knowledge Organiser

Key Word	Definition
Sequencing	Running instructions in order.
Subroutines	Sequences of instructions that perform a specific task.
Instruction	An order given to a computer processor by a computer program.
Execute	To perform indicated tasks according to encoded instructions.
Variable	A name that refers to data being stored by the computer.
Commands	The instructions to the computer which tell it what to do
Input	Sending data or commands into the computer.
Output	Sending information out of the computer.
Process	The actions that a computer takes to execute commands a user makes.
Storage	Keeping data within the computer system.
Tracing	Running through an algorithm or program to predict what it does and then testing to see that it does what you predicted.
Expression	A computer program statement that evaluates to some value.
Evaluate	Find the value of a numerical or algebraic expression.
Condition	The state of something in the program that's true or false.
Selection	A programming construct where a section of code is run only if a condition is met.
If Statements	A programming conditional statement that, if proved true, performs a function or displays information.
Comparison Operators	Used to compare two expressions and return True or False.

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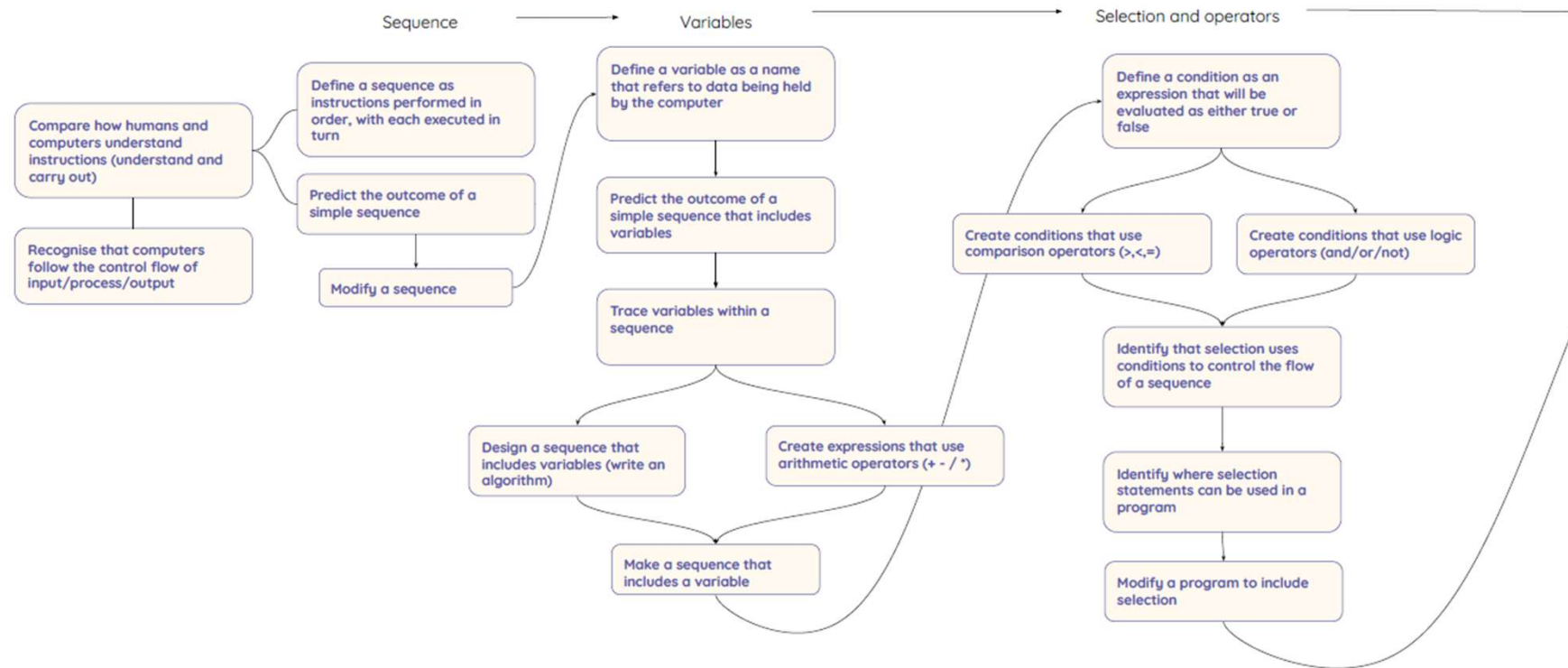
Key Word	Definition
Logic Operators	Allow a program to make a decision based on multiple conditions.
Iteration	The process of repeatedly executing instructions.
Count Controlled Loop	Repeating a set of commands a set number of times.
Condition Controlled Loop	Repeating a set of commands until the condition you set is no longer being met.
Debugging	The process of finding an error in your code and taking steps to fix the problem.

The collage features several educational resources:

- Scratch Code Snippets:** Two examples of Scratch code. The first starts with 'when green flag clicked', followed by 'say Hello for 2 seconds', 'say I'm Big Ed from the year 2182 for 4 seconds', and 'ask\_name'. The second defines 'ask\_name' as 'ask what's your name and wait', followed by 'set name to answer' and 'say join hello name for 2 seconds'.
- Moves Like Jim Activity Sheet:** A worksheet with an introduction, tasks, and a support table. The support table lists 'ask\_name' and 'set name to answer' with their respective instructions and a 'Support' column.
- Scratch Project:** A screenshot of a Scratch project titled 'Moves Like Jim - Starter Code' by NCE. It shows a character in a city scene with a 'when green flag clicked' event.
- 3B4T Poster:** A poster with the title '3B4T' and four steps: 1. Brain (Carefully read over the instructions again. Stop and think through the problem.), 2. Browse (Read the support tips and look at your work from previous lessons/tasks.), 3. Buddy (Ask your classmate to prompt you (not do it for you).), and 4. Teacher (Only when you have taken these steps can you ask your teacher.).

## Assessment Rubric

	Emerging [1-3]	Expected [4-7]	Exceeding [8-10]	Score
<b>Tasks 1 And 2: Sequencing</b>	<input type="checkbox"/> Partially sequenced the two subroutines	<input type="checkbox"/> Sequenced both subroutines <input type="checkbox"/> Applied some debugging techniques	<input type="checkbox"/> Sequenced both subroutines <input type="checkbox"/> Applied debugging techniques independently	
<b>Task 3: Count-Controlled Iteration And Variables</b>	<input type="checkbox"/> Applied count-controlled iteration with high level of guidance and support <input type="checkbox"/> Was unable to apply the 'start' variable appropriately	<input type="checkbox"/> Applied count-controlled iteration to reduce the lines of code in the countdown subroutine <input type="checkbox"/> The 'start' variable is used appropriately <input type="checkbox"/> Some support needed to debug problems	<input type="checkbox"/> Independently applied count-controlled iteration to reduce the lines of code in the countdown subroutine <input type="checkbox"/> The 'start' variable has been added in the appropriate places to make sure that the correct number is said by Jim	
<b>Task 4: Operators, Selection, Iteration</b>	<input type="checkbox"/> Partially met requirements of the task <input type="checkbox"/> With guidance has been able to follow the structure of the other subroutines to form a working subroutine	<input type="checkbox"/> Requirements of the task have been met <input type="checkbox"/> Some guidance required in being able to apply the appropriate operator <input type="checkbox"/> Has demonstrated some independent problem-solving skills	<input type="checkbox"/> Requirements of the task fully met <input type="checkbox"/> Subroutine includes the appropriate operator, selection, and count-controlled iteration <input type="checkbox"/> Independent problem-solving skills demonstrated	
<b>Explorer Tasks: Variables</b>	<input type="checkbox"/> Was not able to attempt the explorer tasks	<input type="checkbox"/> Made an attempt at some of the explorer tasks	<input type="checkbox"/> Completed at least one of the explorer tasks	
<b>Total Score:</b>				



# Learning Graph

