

Name:

Student Number:

Date:

Lesson 10 Red Light, Green Light

Activity Sheet

Context

Did you play the game “Red Light, Green Light?” During the game, you need to listen carefully to the leader’s instructions to decide whether you should continue to move or stop. This simple game contains an important knowledge – the conditional. In this learning activity, you will explore how to use conditional algorithms.

Task 10-1 Is this a conditional

Run and predict the demo programming scripts shown below, figure out which one is a conditional algorithm and which one is not. Explain your reasons.

When you run the programs, remember to add the appropriate Events blocks.

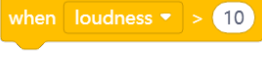
Demo	Your Prediction
<pre> if key space pressed? then move 10 steps </pre>	
<pre> repeat until key space pressed? move 10 steps </pre>	
<pre> repeat 10 move 10 steps </pre>	
<pre> wait until key space pressed? move 10 steps </pre>	
<pre> move 10 steps wait until key space pressed? </pre>	

Challenge: You can try to modify the non-conditionals to check what kinds of modifications would make the original code become the conditional algorithm.

Task 10-2 Add a Conditional

Revisit your projects completed in the previous lessons. Modify them by adding conditional constructs.

You may need the help of these blocks shown as follows:

Conditional Blocks	Function
	This is the “if..., then...” Control block. Insert another block as a condition after the “if.” If the condition is true, the blocks held inside it will run. This kind of conditional block only has one pathway and it will lead to one result when running.
	This is the “if..., then..., else (if)...” Control block. Similar to the function of the above “if..., then...” block, it needs to combine with another block as a condition to define the triggering effect. This block has two pathways: one is when the condition is true; another is when the condition is false. There exist two possible results when running.
	The function of this block is similar to the instructions used in “Red Light, Green Light”. It means the code follow this block would run until the specified condition is true.
	This block combines both the looping function and the conditional function. It means the block(s) held inside it will continue to run forever or else it will stop if the specific condition is true.
    	These Events blocks can also function as conditional constructs. The statement after the “when” is the condition. If the condition is true, blocks connected as follows will run.

Key Concepts from this Learning Activity

Terms	What it means
Conditional*	A statement that helps a computer make decisions to carry out specific tasks under certain conditions.
Sensing Blocks*	Detect different factors of the input and can be used as a triggering condition.

* New term