

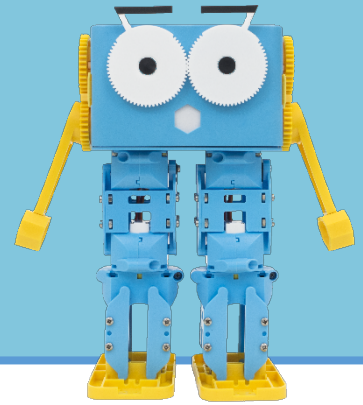
# Lesson 1.8 – Introduction to Variables

**Education Level:** Second Level (Age 7-11)

**Lesson Duration:** 45 minutes

**Prerequisite Knowledge:** Lessons 1.1-1.7

**Device Compatibility:** Laptop, PC or Tablet



## Lesson Overview

Variables will be introduced in this lesson as a way of storing and remembering values that can be used later in a program for decisions to be made. This will start off with a small programming challenge in Scratch that will be extended to include Marty.

### Learning Objectives

- Understand that variables are a way to store and remember a value for you
- Understand when variables should be used
- Create a program that makes use of a variable to change the output

### Key Vocabulary

- Code blocks
- Variables
- Store
- Values
- Output

### Resources & Equipment

- Marty the Robot
- Marty Workbook (Lesson 4)
- Laptops/Computers/Tablets
- Access to the Scratch editor

### Additional Reading

- Educator's Guide
- Introduction to Programming with Marty using Scratch

### Learning Plan & Activities

1. Discussion of when you are counting up something, how do you keep track of the total?
2. Introducing variables as a way to keep track of this for us in our programs
3. Show some example programs in the presentation and discuss what students think the printed message will be based on what the variable is holding
4. Programming task where students need to program a sprite in Scratch to say what the number is that is being held in the variable and add one to that value (a counting program)
5. Highlight that it isn't just numbers that we can put into variables but also text too
  - a. Ask students to store their name in a variable by using the *ask* block as a way to get input from the user
  - b. Then include that variable in the Hello message to the user before asking them to click the sprite the number of times to represent the number of steps they want Marty to take
  - c. Students should then use the count variable to be the number of steps that Marty should take

### Additional Challenges

- Students should explore what other Marty blocks they can use their variable values for (for example, taking in the angle of the mouse pointer to decide which way Marty should turn)

## Curriculum Benchmarks

### Curriculum for Excellence – Technologies Benchmark Guide

● = Fully Addresses Benchmark    ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 1.8
Digital Literacy	TCH 0-01a	●
Craft, Design, Engineering and Graphics	TCH 0-05a	●
	TCH 3-12a	○
Computing Science	TCH 0-13a	●
	TCH 1-13a	○
	TCH 2-13a	○
	TCH 3-13a	○
	TCH 4-13a	○
	TCH 0-14a	●
	TCH 0-14b	●
	TCH 1-14a	●
	TCH 1-14b	●
	TCH 2-14a	●
	TCH 2-14b	○
	TCH 3-14a	○
	TCH 0-15a	●
	TCH 1-15a	●
	TCH 2-15a	○
	TCH 3-15a	○
	TCH 4-15a	○

### National Curriculum – Computing, Design & Technology

● = Fully Addresses Benchmark    ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 1.8
Computing	1-a	●
	1-b	●
	1-c	●
	1-e	●
	2-a	●
	2-b	●
	2-c	●
	3-a	●
	3-b	●
	3-f	○
	4-a	○
	4-b	○
	Design & Technology	1.1-a
3.1-b		○