

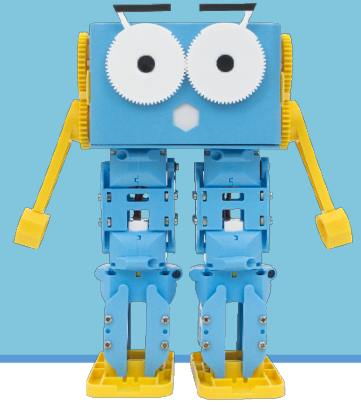
# Lesson 1.16 – Obstacle Course 2

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

**Lesson Duration:** 45 minutes

**Prerequisite Knowledge:** Lessons 1.1-1.15

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



## Lesson Overview

This lesson is similar to lesson 1.14 where students had to program Marty to go around an obstacle course. The main difference here is that students will be using bump switches to help them with programming Marty to go around the course without measuring out the number of steps required but by *sensing* when to do certain things.

### Learning Objectives

- Create/select an appropriate obstacle course based on Marty's size and functionality
- Program Marty to go around obstacle course using bump switches/sensing instead of using exact values and number of steps

### Key Vocabulary

- Obstacle course
- Algorithm
- Sensing
- Bump switches
- Reacting
- Programming

### Resources & Equipment

- Marty the Robot with bump switches
- Marty Workbook (Lesson 2)
- Laptops/Computers/Tablets
- Access to the Scratch editor
- Obstacle course design
- Objects to be in obstacle course

### Additional Reading

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

### Learning Plan & Activities

1. Recap what was covered in last lesson in terms of bump switches and how we use them to help Marty sense and make decisions
2. Create obstacle course
  - a. If creating your own, then give students time to design
  - b. Then either print out example ones or create based on this design/student designs using random objects as obstacles and markers
3. Split students into small groups and give time to plan out their program
4. Time dedicated to programming Marty with a limit so that we can see which team has managed to program Marty to go the furthest through the obstacle course (click run once on computer/tablet and then leave to run!)

### Additional Challenges

- Time each of the Marty robots to see who can get through the course the quickest

- Give extra time to go back and make changes to the program after seeing how other groups have tackled different obstacles

## Curriculum Benchmarks

### Curriculum for Excellence – Technologies Benchmark Guide

● = Fully Addresses Benchmark    ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 1.16
Digital Literacy	TCH 0-01a	●
Technological Developments in Society & Business	TCH 0-05a	●
	TCH 1-07a	●
Craft, Design, Engineering and Graphics	TCH 0-09a	●
	TCH 1-09a	●
	TCH 3-09a	○
	TCH 0-11a	●
	TCH 1-11a	●
	TCH 2-11a	●
Computing Science	TCH 0-13a	●
	TCH 1-13a	●
	TCH 2-13a	●
	TCH 3-13a	○
	TCH 3-13b	○
	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	○

### National Curriculum – Computing, Design & Technology

● = Fully Addresses Benchmark    ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 1.16
Computing	1-a	●
	1-b	●
	1-c	●
	1-e	●
	2-a	●

	2-b	●
	2-c	●
	2-e	○
	2-f	●
	3-a	●
	3-b	○
	3-d	○
	4-a	○
	4-b	○
Design & Technology	1.1-b	●
	1.2-a	●
	1.3-b	●
	2.1-b	●
	2.3-b	●
	3.1-e	○
	3.3-c	○

### Australian F-10 Curriculum – Digital Technologies, Design & Technologies

● = Fully Addresses Benchmark    ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 1.16
Digital Technologies	ACTDIK001	●
	ACTDIK002	●
	ACTDIP003	○
	ACTDIP004	●
	ACTDIK008	●
	ACTDIP009	○
	ACTDIP010	●
	ACTDIP011	●
	ACTDIP012	●
	ACTDIP013	●
	ACTDIP017	●
	ACTDIP019	●
	ACTDIP020	○
	ACTDIP021	○
	ACTDIP027	○
	ACTDIP029	○
	ACTDIP031	○
	ACTDIP038	○
	Design & Technologies	ACTDEK004
ACTDEP005		○
ACTDEP006		●
ACTDEP007		○
ACTDEP008		○
ACTDEP009		●

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