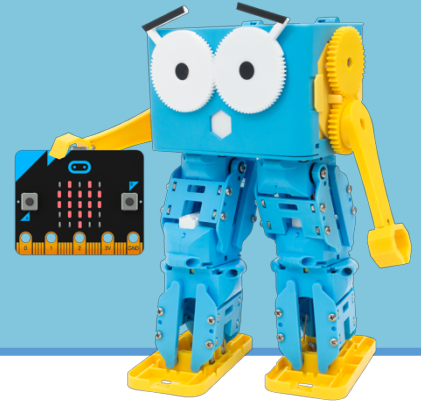# Lesson 1.21 – Marty Football

Education Level: Second Level (Age 7-11)
Lesson Duration: 45 minutes

Prerequisite Knowledge: Lessons 1.1-1.14 & 1.19 – 1.20
Device Compatibility: Laptop or PC

Lesson Overview

In this lesson, Marty will become our star football player as we create a small remote-control program to help us guide Marty towards the ball to kick it towards the net. Students will need to use the different functionalities that the Micro:Bit has to help with deciding which movement Marty should do. Afterwards, students should be able to play small football games or shoot outs!

Learning Objectives

- Build a small remote-control program to get Marty to walk around and kick a ball (hopefully towards the net to score a goal!)
- Describe what movements are needed to play sports like football
- Design a football strip for Marty and think about where this will need to be placed on Marty so not to restrict movements

Key Vocabulary

- Micro:Bit
- Movement
- Remote control
- Accelerometer
- Events
- Design
- If Statements

Resources & Equipment

- Marty the Robot
- Marty Workbook (Lesson 3)
- Laptops/Computers with Scratch Link installed
- Access to the Scratch 3 editor
- BBC Micro:Bit
- Ping pong ball
- Ruler
- Paper
- Blu Tack
- Colouring pencils/pens
- Goals (this can be bits of cardboard taped together or just a box that the ball has to hit)

Additional Reading

- Educator's Guide
- Introduction to Programming with Marty using Scratch
- BBC Micro:Bit Quick Start Guide for Teachers (https://microbit.org/guide/quick/)

Learning Plan & Activities

1. By measuring Marty and taking into account the moving body parts, ask students to draw out and design their own football top that they can cut out and attach to their Marty (they may work in teams to produce their teams strip or individually then pick one for their group)
2. Ask students to think about what movements they use when they are playing a sport like football

3. Students should then focus on creating a remote control for Marty to create these movements using the Micro:Bit to measure their different gestures. For example, if you tilt the Micro:Bit to the left then Marty should take a sidestep to the left

4. Get groups to test it out – either by having a small football game or by having a shoot off to see which team can score the most goals (using the ping pong ball as the football)

5. Ask students what else they could include – for example, a goal celebration? Is there anything that they could change to make playing or winning easier?

Additional Challenges

- Add a goal celebration movement to the remote
- Keep track of the number of goals the teams Marty has scored using a *variable* so that you can check the score at any time
- Are there any *hidden* features that students could add on to help them win?

Curriculum Benchmarks

Curriculum for Excellence – Technologies Benchmark Guide

● = Fully Addresses Benchmark   ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 1.21
Digital Literacy	TCH 0-01a	●
Technological Developments in Society & Business	TCH 0-05a	●
Craft, Design, Engineering and Graphics	TCH 0-09a	●
	TCH 0-11a	●
	TCH 1-12a	○
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 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 1.21
Computing	1-a	●
	1-b	●
	1-c	●
	1-e	●
	2-a	●
	2-b	●
	2-c	●
	2-f	○
	3-a	●
	3-b	●
	3-d	○
	4-a	○
	4-b	○
Design & Technology	1.1-b	●
	1.2-a	●
	2.3-b	●

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

● = Fully Addresses Benchmark   ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 1.21
Digital Technologies	ACTDIK001	●
	ACTDIK002	●
	ACTDIP003	○
	ACTDIP004	●
	ACTDIK008	○
	ACTDIP009	○
	ACTDIP010	●
	ACTDIP011	●
	ACTDIP012	●
	ACTDIP013	●
	ACTDIP017	●
	ACTDIP018	●
	ACTDIP019	●
	ACTDIP020	●
	ACTDIP021	○
	ACTDIP022	○
	ACTDIP027	●
	ACTDIP028	●
	ACTDIP029	●
	ACTDIP030	●
	ACTDIP031	○

	ACTDIP038	○
	ACTDIP039	○
	ACTDIP040	○
	ACTDIP041	○
	ACTDIP042	○
Design & Technologies	ACTDEK002	○
	ACTDEK004	○
	ACTDEP005	○
	ACTDEP006	●
	ACTDEP008	○
	ACTDEP009	●
	ACTDEK010	○
	ACTDEP015	○
	ACTDEP017	○
	ACTDEP018	●
	ACTDEP025	○