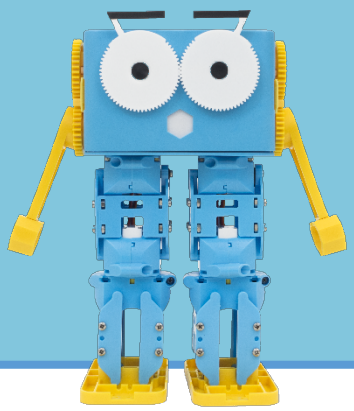
Lesson 2.4 – Debugging in Python



Education Level: Second/Third Level (Age 9-13)
Lesson Duration: 45 minutes

Prerequisite Knowledge: Lessons 2.1-2.3
Device Compatibility: Laptop or PC

Lesson Overview
Finding problems and errors in Python is a lot different in comparison to Scratch. In this lesson, we cover some easy ways to find the problem with our programs and put them to the test briefly. Students will be using the IDLE editor in this lesson to create and modify Python programs.

Learning Objectives
- Describe the different techniques that we can use to debug programs in Python
- Given a short Python script, analyse and debug so that it runs as expected

Key Vocabulary
- Python
- Debugging
- Logic Error
- Syntax

Resources & Equipment
- Marty the Robot
- Marty Workbooks (Lesson 4)
- Python treasure hunt scripts and instructions
- Laptop or PC with Python, MartyPy and IDLE installed

Additional Reading
- Educator's Guide
- Getting Started with Python: Schools

Learning Plan & Activities
1. Warm up activity, go through a few different short scripts from the PowerPoint slides and get students to decide if they think the program will work as expected
2. Discussion with students around why they think we need debugging and why things don't always work like we expect when programming
3. Students should go into small groups of around 2-3 where each group has access to a Marty
4. Students in the group should work together to work their way through the Python treasure hunt where they will have to debug some short scripts to get enough clues to work out a fact about Marty!

Additional Challenges
- Students could try creating their own treasure hunt activities
- Students could create short Python scripts and place some errors in them for other student groups to try and find then fix

Curriculum Benchmarks

Curriculum for Excellence – Technologies Benchmark Guide

● = Fully Addresses Benchmark ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 2.4
Digital Literacy	TCH 0-01a	●
	TCH 0-02a	●
Technological Developments in Society & Business	TCH 0-05a	●
	TCH 1-05a	○
	TCH 1-09a	○
	TCH 0-11a	●
	TCH 1-11a	○
	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 2.4
Computing	1-a	●
	1-b	●
	1-c	●
	1-e	●
	2-a	●
	2-b	○
	2-c	●
	2-f	●
	3-a	●

	3-b	○
	3-c	●
	4-a	○
	4-b	○
Design & Technology	1.1-b	●
	1.3-b	●
	2.3-b	●
	3.1-b	●
	3.1-d	○
	3.3-c	○

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

● = Fully Addresses Benchmark ○ = Partially Addresses Benchmark

Curriculum Organiser	Benchmark Covered	Lesson 2.4
Digital Technologies	ACTDIK001	●
	ACTDIK002	●
	ACTDIP003	○
	ACTDIP004	●
	ACTDIK008	●
	ACTDIP009	○
	ACTDIP010	●
	ACTDIP011	○
	ACTDIP013	●
	ACTDIP017	●
	ACTDIP019	○
	ACTDIP020	○
	ACTDIP029	●
	ACTDIP030	○
	ACTDIP040	●
	ACTDIP041	○
	ACTDIP044	○
Design & Technologies	ACTDEP005	○
	ACTDEP006	●
	ACTDEP009	●
	ACTDEP015	○
	ACTDEP017	○
	ACTDEP018	●