Lesson plan: Session 6

Smart Watering System

Overview

In this final session learners will code the micro:bit for vocabulary review, then expand upon the moisture tester and SDG's from Module 4 by adding in the idea of monitoring conditions in remote areas by creating a watering system to make better use of our valuable water resource. 60 minutes

Learning Outcomes

- Code and remix code to use a m:b for a vocabulary review game
- Code and design a plant watering system connecting to UN SDG 15 Life on Land

Disciplines

- Computer Science, Science, Mathematics, Social Studies/Geography

Transferable skills

- Critical Thinking
- Communication
- Collaboration
- Creative Thinking
- Computational Thinking
- Design Thinking.

Resources

- CodingChange_S6_teacher PowerPoint
- m:b, one battery pack
- servo
- 5 alligator clips
- 5 male to make jumper wires

Activities

Minds On – Head Banz

- Slide 7 – video to introduce Head Banz idea
- Slide 8 - code for Head Banz game. Teachers may wish to share the code with students and have them edit the array (list of words). Notice that the code includes music at the beginning of a new word and at the end of game. Teachers may wish to encourage students to design their own musical clues.
- Slide 9 – 11, explain the code and its purpose and how a game of Head Banz could be played
- Slide 12 highlights the pieces of code used for this project
- Slide 13 - encourages remixing and design thinking project for a Head Banz headband

Action – Smart Watering System

- Slide 14 – an introduction to SDG15 – Life on Land discussion
- Slide 15 – Remixed code for Moisture tester to include an automated watering system. Teachers are reminded that the servo extension blocks available in Extensions are more accessible than the blocks in the pin drawer.
- Slides 16 – 20 highlights the materials needed to build one possible watering system and a video describing the build.

Reflect and Extend

- Slides 21 to end include links to micro:bit Do Your Bit resources created for last seasons project.