

<Automated Teachers' Attendance System>

Programme: Using microbits to solve everyday problems in school

Level: Pri 6

Theme / Challenge Statement: To design an automated system to identify which teachers are present in the staffroom.

Summary

Students currently use the intercom system to page for teachers they wish to see. However, if the teacher is not in the staffroom, students end up waiting aimlessly outside. A system to let students know if teachers are in the staffroom would help eliminate time wasted.



Prior Knowledge:	Students should already know: <ol style="list-style-type: none"> 1. Basics of Micro:bit 2. Simple programming logic 3. Basic computing skills
Learning Objectives:	By the end of the lesson, students should be able to: <ol style="list-style-type: none"> 1. Apply simple programming logic to solve a real world programme 2. Use Micro:bit functions to design a system to solve the problem at hand 3. Apply systematic design thinking

Lesson Plan

Time	Teacher Activities	Purpose	Resources Needed
Introduction/Pre-activity			
30mins	<i>Be familiar with basic functions of Micro:bit and be able to use functions like button input and Bluetooth functions.</i>	To let students understand the different parts of the Micro:bit as well as its functions	Micro:bit manual
Lesson development/Main activities			
Day 1 – 3 hours	<i>Brainstorm on creating a detection system using the Micro:bit Bluetooth function similar to carpark parking detection system. Basic coding using Micro:bit coding website.</i>	To let students understand the available features / functionalities of the micro:bits	Micro:bit coding website
Day 2 – 3 hours	<i>Going through the design thinking process. Create and refine code for detection system. Create a working model.</i>	To build a simple prototype to test out students' solutions.	Materials for prototype
Day 3 – 3 hours	<i>Refine and improve system and model. Testing of prototype.</i>	To troubleshoot and solve any operational problems	
Day 4 – 3 hours	<i>Presentation of solution</i>		
Closure and consolidation/Post-activity			
Nil			

List of Projects (5 – 10 projects if possible) created by Students			
Project 1	Automated Teachers' Attendance System to help students outside the staffroom know if the teacher is in. The prototype will display on a screen using Micro:bits, the presence of the teacher in the staffroom so that students will not need to wait outside aimlessly.	Resources Needed : Micro:bits Display panel	Remarks / Tips to be shared

Lesson Plan

Please send this template, together with any additional resources, e.g. Powerpoint slides, worksheets and .hex file, to: digital_maker@imda.gov.sg.

Contributed by:

Name of School: Clementi Primary School

Name of Teacher (Optional):

Date: 1 Feb 2018