## < Automated Teachers' Attendance System>

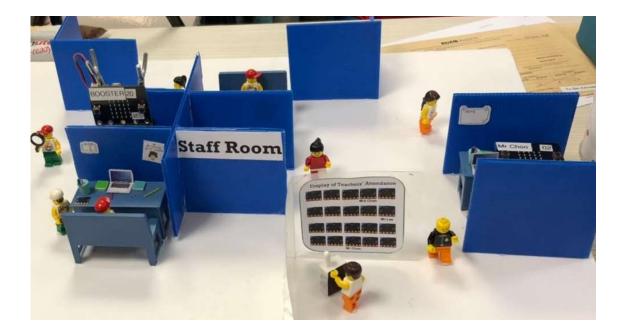
Programme: Using microbits to solve everyday problems in Level: Pri 6

school

**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:  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: 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

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

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

## Lesson Plan

Please send this template, together with any additional resources, e.g. Powerpoint slides, worksheets and .hex file, to: <u>digital maker@imda.gov.sg</u>.

## **Contributed by:**

Name of School: Clementi Primary School

Name of Teacher (Optional):

Date: 1 Feb 2018