RECYCLING PLASTIC BOTTLES

Programme:	Interdisciplinary Project Work	**Level:**	Primary 6
Theme / Challenge Statement:	Count the number of recycled plastic bottles collected.		

Summary

With the theme on conservation of our environment, students designed a bin, incorporating the micro:bit, to collect and count the number of recycled plastic bottles. Students learnt to use technology to help them carry out their work more efficiently.

Lesson Plan

Prior Knowledge:	Students should already know: 1. Basic programming language 2. Basic designing skills
Learning Objectives:	By the end of the lesson, students should be able to: 1. Incorporate the micro:bit into the recycling bin to count the number of plastic bottles collected 2. Design the bin so as to make it look aesthetically pleasant

Time	Activities	Purpose	Resources Needed
Pre-Activity			
1 week	Students went through the Interdisciplinary Project Work (IPW) package, and were given the task to brainstorm for possible ways to conserve the environment in the school or homes. Some groups of students decided to work on a recycling drive in the school. In particular, a group of them intended to collect recycled plastic bottles that could be used for other purposes such as growing of plants, etc.	The IPW package sets the context for the lesson where students would design a recycling bin to collect used plastic bottles. Students needed to count the number of plastic bottles collected too.	School IPW package
Main Activity			
Day 1	Students were introduced to the micro:bit and its motion sensor. The basic programming language and how to use the micro:bit and its motion sensor were explained to them. Students gave inputs on how they would like the micro:bit to do the counting of the recycled plastic bottles.	Students will be able to understand what is a micro:bit and its various functionalities.	Micro:bit with battery pack and motion sensor
Days 2 to 4	Students brainstormed on possible designs to incorporate the micro:bit into the recycling bin, and discussed the feasibility of the designs with the teachers. Students eventually decided on building an inner pipe from the opening of the recycling bin through which the used plastic	Students went through the design thinking process and worked around the constraints of integrating the micro:bit into the recycling bin.	Micro:bit with battery pack and motion sensor Recycling bin Cardboards Painting materials

Time	Activities	Purpose	Resources Needed
	bottles will be dropped. The micro:bit was placed at the bottom of the pipe to do the counting. Students then beautified their recycling bin to make it aesthetically pleasant.		
Day 5	The recycling bin was placed in the school foyer to collect and count the used plastic bottles.	Students tested out the prototype.	Equipped recycling bin with micro:bit

Contributed by:

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