

LLP-WHIZZ Project Work (P4)

Programme: Project Work (Celebrating Owlets) **Level:** Pri 4

Theme / Challenge Statement: To infuse technology in the school’s annual carnival booths

Summary

As part of the school’s LLP-WHIZZ programme, the P4 pupils worked on the Project Work task to design a booth for the school’s annual carnival, Celebrating Owlets. During the 2 week Project Work, pupils used various Thinking Tools to ideate and design carnival booths. Afterwhich, 10 groups of pupils were identified to integrate microbits in their booths design so as to infuse technology in their booth.




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| Prior Knowledge: | Students should already know: 1. Science concepts on electricity circuits |
| Learning Objectives: | By the end of the lesson, students should be able to: 1. acquire basic coding skills 2. apply coding skills to create a set of codes to enhance their Project Work with the use of micobits |




| Time | Teacher Activities | Purpose | Resources Needed |
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| Introduction/Pre-activity | | | |
| Day 1 / 10mins | Setting the context | To let students understand the objectives of new tasks | Ppt of background and rationale |

Lesson Plan


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| | | and the criteria for selecting the teams | |
| Lesson development/Main activities | | | |
| Day 1 – 3 hours | Introduce basic coding and introduction to micro:bits | To let students understand the available features / functionalities of the micro:bits | Laptop Website |
| Day 2 – 3 hours | Digital Making (Part 1) | To let students have a hands on experience in applying their knowledge in creating a prototype | Laptop Micro:bits Accessories needed based on designs |
| Day 3 – 3 hours | Digital Making (Part 2) | To allow students to refine and test their prototype with their teachers and peers | Laptop Micro:bits Accessories needed based on designs |
| Day 4 – 4 hours | Actualisation of booths | To allow students opportunity to showcase their innovation through the actualisation in the school’s carnival, Celebrating Owlets | Project Work Product |
| Closure and consolidation/Post-activity | | | |
| 30 mins | <i>Students to complete a reflection on</i> <ul style="list-style-type: none"> • <i>their experience in coding</i> • <i>challenges faced</i> • <i>Future improvements</i> | To allow students to consolidate their learning, reflect and suggest areas for improvements | Reflection |

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| List of Projects (5 – 10 projects if possible) created by Students | | | |
| Project 1 (Table Soccer) | <p>Pupils make use of Ice Cream sticks to move a ball on the soccer field and scores a goal when it hits the goal surface (aluminium foil). The foil moves back to come into contact with another piece of aluminium foil to close the contact and 1 point is added to the corresponding microbit.</p>  | 2 x Microbits, Crocodile Clips, Aluminium Foil, Cardboard scoreboard and field, Ice Cream Sticks | Ensure the 2 pieces of aluminium foil are close enough for contact in order to score the point. |
| Project 2 (Gamers Cup) | Pupils fling 3 x marble up a cardboard field using clothes pegs as paddlers and try to score points by hitting the goal. If they land in a | 1 x Microbit, Crocodile Clips, Aluminium Foil, Cardboard scoreboard | Have to ensure the connections and aluminium contacts are |

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| | <p>pit, their score would be deducted instead!</p>  | <p>and field, Marbles, Clothes Peg</p> | <p>adjusted once in a while as it is subjected to hits by marble.</p> |
| <p>Project 3 (Throwing Hoops)</p> | <p>Pupils toss a paper ball from a distance. If it lands through the hoop, it will land on the aluminium contact to close the circuit for points.</p>  | <p>1 x Microbit, Crocodile Clips, Aluminium Foil, Cardboard backing, Paper Ball</p> | <p>Sometimes, the paper ball does not register a score as it is too light. Thus, may have to mesh up more paper to form a heavier ball or ensure contact between aluminium is closer.</p> |
| <p>Project 4 & 5 (Countdown Timer)</p> | <p>Both projects shown below make use of the microbit as a countdown timer without using numbers. Instead, symbols are used and for every second that goes by, the LED lights will start to decrease in number.</p>  | <p>1 x Microbit for each project. Various materials to form the games itself.</p> | <p>The synchronisation of one LED disappearing to mean 1 second was not always accurate.</p> |
| <p>Project 6,7 & 8 (Keep Score)</p> | <p>The three projects below makes us of the microbit to keep score. Pupils increment the scores</p> | <p>1 - 2 x Microbit(s) for each project. Various materials to form the games itself.</p> | <p>Simple to implement but presenting it nicely on the game area</p> |

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| | <p>manually by pressing A and reset using B or reset button.</p>  | | <p>with the battery attachment was a challenge.</p> |
| <p>Project 9 (Messages)</p> | <p>The project below uses the Microbit to flash a simple message to welcome guests to play their game.</p>  | <p>1 x Microbit for each project. Various materials to form the games itself.</p> | <p>It was a little difficult to read long messages on the Microbit.</p> |
| <p>Project 10 (Number Generator)</p> | <p>The group of pupils came up with the idea of using a number generator using a Microbit. They programmed it to reveal a number within a range upon shaking it and designed a box to place the Microbit in so it will be accidentally damaged.</p> | <p>1 x Microbit, Plastic box with foam cushion.</p> | <p>A container to hold the Microbit was necessary as it was difficult to shake it while holding the battery attachment itself.</p> |

Lesson Plan

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Contributed by:

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