

Which Key Learning Area/s is this lesson plan for? **Maths and Science**

NSW Syllabus Outcome(s): *What do students learn and are able to do as a result of this lesson? What subjects and year level?*

- uses materials, tools and equipment to develop solutions for a need or opportunity (ST1-2DP-T)
- describes, follows and represents algorithms to solve problems (ST1-3DP-T)
- identifies the components of digital systems and explores how data is represented (ST1-11DI-T)
- *place value*
- *nasty game*

Introduction: *How will you get the students motivated, curious and ready to learn?*

*You Tube Clip – Introducing the BBC micro:bit
Model how to program numerals and wildcard (smiley face)*

Metalanguage: *What are the key concepts or procedures that you want students to understand as a result of this lesson?*

Microbit Metalanguage: Identification of the components of a microbit and the language of the program, e.g. blocks, java script, stage, emulator, leds, tabs, usb input

Mathematical Metalanguage: place value, one, tens, hundreds, thousands (extension)

Computational Thinking: *Which of the computational concepts, practices and perspectives will students have the opportunity to learn about in the lesson?*

- Sequencing
- Events

Teaching Activities: *What strategies will you use to teach the content and skills? How long will you spend on each of those strategies and with the content? How would you address different levels or prior knowledge?*

Whole class demonstration – how to code the micro:bit to emulate a dice (10-15min)

Small group rotation – 10 min per rotation

- 1. Class teacher with small group on individual laptops programing micro:bit**
- 2. SLSO – play Nasty game with micro:bit in pairs (prior knowledge of Nasty game and micro:bits preprogramed)**
- 3. Nasty game with regular dice in pairs**
- 4. Unplugged version of Nasty Game where instructions are given verbally**

To address prior knowledge mixed ability groups or peer tutoring could be used.

Lesson Closure: *How will you bring the lesson to a conclusion?*

Reflective discussion about the difference between playing with a micro:bit or a traditional dice. What were the benefits, what worked well, what didn't work well, what other uses could this dice have?

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Assessment: *How will you know whether the students achieved what you wanted them to achieve?*

- *Successful programming of digital dice*
- *Identification of highest and lowest numbers*
- *Ability to reflect on successful use of the dice and name components of micro:bit program*

Resources: *What materials do you need for this lesson? Have you used ideas from elsewhere?*

Whiteboards

Whiteboard markers

Micro:bits

dice