# Lesson 6 – Pins, Responses and Looping

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * Many devices respond to being ‘touched’ – your phone screen, heating controls and also alarm systems. We can use the pins on the micro:bit to sense and respond to events. | * Understand the function of the pins and some of the uses * Wire up a circuit using the pins and program a response * Apply understating to build a simple alarm system |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Demonstrate the ‘touch a micro:bit’ program * Learners share stories about triggering an alarm * Build an alarm system to secure the classroom, or a desk or even their bag. | **Expected Progress:**   * Learners build the simple circuit * Learners adapt the responses   **Good Progress:**   * Learners use a loop in the program * Learners apply circuit to build an alarm   **Exceptional Progress:**   * Learners add the use of an additional pin |
| Key Concepts | Key Words |
| * What are pins * Using loops and responses * Using circuits | * Pins * Looping * Circuit |
| Differentiation | Resources |
| Most learners will be able to follow the initial program and then personalise it. Setting up the circuit could be done in pairs for support. Learners may need support with the indentation as more lines are code are used in the program. | * Lesson 6 ppt * Lesson 6 Activity Sheet * Sample Python code * 1 micro:bit per learner * 1 USB cable to connect the micro:bit to a PC * A PC * Access to <https://python.microbit.org/v/1.1> * Crocodile clips * Tin foil * Sticky tape |
| Lesson Flow | |
| * Introduce the pins on the micro:bit and talk through the various features * Demonstrate the ‘touch’ program * Learners build their own version * Recap the use of the ‘loop’ and what it does in the program * Introduce what an alarm is, Learners could feedback their experiences of alarms (fire drill) * Show how an alarm circuit can be set up * Learners work through the activity sheet independently creating their own alarm system. Teacher intervenes where appropriate * Encourage more advanced learners to attempt the Stretch Tasks once they complete main task * Teacher asks learners for feedback on what they have learned in the lesson | |
| Making | |
| * A circuit that enables to micro:bit to respond to being touched * An alarm that is triggered by the circuit breaking | |