# Lesson 30 – Using All the Pins and Touch Response

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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 multiply events and inputs –this will be useful in the final project | * How to attach the edge connector * How to use jumper wire to access the pins * Write a program to respond to each of the pins being touched * Use conductive materials to create buttons and other forms of interaction with the micro:bit |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Demonstrate the touch a micro:bit program * Create the touch buttons is a useful and fun activity * The teacher could demonstrate the micro:bit Piano at the start of the lesson | **Expected Progress:**   * Learners attach the edge connector * Learners write a simple touch program for at least 2 pins   **Good Progress:**   * Learners write a simple touch program for at least 3 pins * Learners attach foil to the wires to create buttons   **Exceptional Progress:**   * Learners use program code and conductive materials to build a micro:bit piano |
| Links to KS3 Programme of Study | |
| * undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users | |
| Key Concepts | Key Words |
| * What are pins * Using loops and responses * Using the edge connector * Creating touch buttons | * Pins * Jumper wires * Edge connector * Conductive materials * Circuits * List |
| 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 multiple pins and identify them on the edge connector. | * Lesson 30 ppt * Lesson 30 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 [micro:bit Python Editor (microbit.org)](https://python.microbit.org/v/3) * Kitronik Edge Connector * Male to female jumper wires * Tin foil * Sticky tape |
| Lesson Flow | |
| * Teacher to recap the pins on the micro:bit and talk through the various features * Demonstrate the touch program, micro:bit Zoo or micro:bit Piano * Teacher to introduce the edge connector * Learners attach their micro:bit to the board * Learners work through the activity sheet independently creating their own touch program * Teacher intervenes where appropriate * Encourage more advanced Learners to attempt the stretch tasks once they complete main task * Learners could perform a short tune on their micro:bit Piano for the class. As part of the extension activity learners may wish to explore the list data structure. * Teacher asks Learners for feedback on what they have learnt in the lesson | |
| Making | |
| There are no making activities in this lesson. | |