**Worksheet 1: Switching Behaviour**

You have been provided with code which makes the tortoise move forwards when the front touch sensor is onand stand still when it is off.Once you’ve turned the tortoise on it will be still until you press the touch sensor, when it will move forward until you let go. Your task is to hack the code so that the tortoise behaves differently, but first you’ll have to search the code for key phrases so that you can figure out how to change them.

Task One: Searching the Code

Take a look at the code. Can you find:

1. Where the tortoise is given a name?
2. Where we make the tortoise **move** in the **forwards direction**?
3. How we use the **value** of **LED 1** and **print** messages to provide feedback about whether the switch is on or off? In programming, on is normally represented as **1** and off as **0.**

Task Two: Hacking the Code

1. Give your tortoise a **name**!
   * If you see an error message talking about names not being defined then check you have used your tortoises name throughout the code, everywhere it used to say ‘Name.’
2. Make the tortoise move **backwards** instead of forwards when you press the front switch?
3. Make **LED** **1** be **on** constantly and only turn **off** when the touch sensor is pressed.

**Extension Activity**

Ok so you’ve given the tortoise a name, changed which way it moves and changed when the LED turns on and off. Now it’s time to completely switch around the tortoise’s behaviour. Firstly, can you see:

1. Where we assign the value of the touch sensor to a **variable?**
2. How we use that variable to tell the tortoise what to do **if** the touch sensor is on, or **else** if it is off?

The original code was designed so that the tortoise only moves if the front touch sensor is touched, so when first turning it on it just stands still. Can you change it so that the tortoise moves forwards straight away (i.e. when the touch sensor is off) and only stops when it the touch sensor is pressed?

Now try moving the touch sensor to the back of the tortoise. What behaviour would you like the tortoise to have? Should it stay still until the sensor is activated, and then move, or should it be moving straight away? Do you want it to move away from the sensor press (as if it is running away) or towards it (as if it is coming towards you), or do you want it to stop moving completely?

Decide which behaviour you would like to see and edit the code to make it happen. Make sure to test your code on the tortoise and check that it behaves as you wanted it to!