1. Course 1 - Microbit Beginner lessons
   1. Beautiful image - <https://www.microbit.co.uk/blocks/lessons/beautiful-image>
   2. Lucky7 - <https://www.microbit.co.uk/blocks/lessons/lucky-7>
   3. Answering machine - <https://www.microbit.co.uk/blocks/lessons/answering-machine>
   4. Game of chance - <https://www.microbit.co.uk/blocks/lessons/game-of-chance>
   5. Smiley - <https://www.microbit.co.uk/blocks/lessons/smiley>
   6. Magic logo - <https://www.microbit.co.uk/blocks/lessons/magic-logo>
   7. Snowflake fall - <https://www.microbit.co.uk/blocks/lessons/snowflake-fall>
   8. Screen Wipe - <https://www.microbit.co.uk/blocks/lessons/screen-wipe>
   9. Flashing Heart - <https://www.microbit.co.uk/blocks/lessons/flashing-heart>
   10. Blink - <https://www.microbit.co.uk/blocks/lessons/blink>
   11. Night Light - <https://www.microbit.co.uk/blocks/lessons/night-light>
   12. Game Counter - <https://www.microbit.co.uk/blocks/lessons/game-counter>
   13. Happy Birthday - <https://www.microbit.co.uk/blocks/lessons/happy-birthday>
2. Course 2 - Microbit Advanced lessons
   1. Magic8 - <https://www.microbit.co.uk/blocks/lessons/magic-8>
   2. Guess the number - <https://www.microbit.co.uk/blocks/lessons/guess-the-number>
   3. Counter - <https://www.microbit.co.uk/blocks/lessons/counter>
   4. Love Meter - <https://www.microbit.co.uk/blocks/lessons/love-meter>
   5. Rock Paper Scissors - <https://www.microbit.co.uk/blocks/lessons/rock-paper-scissors>
   6. Truth or Dare - <https://www.microbit.co.uk/blocks/lessons/truth-or-dare>
   7. Spinner - <https://www.microbit.co.uk/blocks/lessons/spinner>
   8. Die Roll - <https://www.microbit.co.uk/blocks/lessons/die-roll>
   9. Looper - <https://www.microbit.co.uk/blocks/lessons/looper>
   10. Strobe Light - <https://www.microbit.co.uk/blocks/lessons/strobe-light>
   11. Temperature - <https://www.microbit.co.uk/blocks/lessons/temperature>
   12. Digi Yoyo - <https://www.microbit.co.uk/blocks/lessons/digi-yoyo>
   13. Rotation Animation - <https://www.microbit.co.uk/blocks/lessons/rotation-animation>
   14. Compass - <https://www.microbit.co.uk/blocks/lessons/compass>
   15. Zoomer - <https://www.microbit.co.uk/blocks/lessons/zoomer>
   16. Glowing Pendulum - <https://www.microbit.co.uk/blocks/lessons/glowing-pendulum>
   17. Classic Beatbox - <https://www.microbit.co.uk/blocks/lessons/classic-beatbox>
   18. Light Beatbox - <https://www.microbit.co.uk/blocks/lessons/light-beatbox>
3. Course 2.1 - Microbit Advanced lessons
   1. Walking the Plank - <https://youtu.be/HJ2jBW_BMpk>
      1. Create a spirit level using the microbit. This uses the rotation / roll block within MakeCode. The game is called Walking the Plank.
      2. The child puts the microbit on the other side of the palm and is made to walk around the room.
      3. The winner is the one who’s able to successfully navigate from one end of the room to the other without tilting the board.
      4. Click on button A to re-set the counter and start the game.
      5. If the child manages to walk around the room with spirit level remaining at 0 for 60 seconds they win the game
      6. At the end of 60 seconds you display game over and win if the spirit level is still at 0.
      7. If the child has tilted the board you might say, try again – better luck next time.
      8. Challenge - Add a buzzer. As soon you as go off zero you go beep, beep.
   2. Crossy Roads Game - <https://youtu.be/-S1aAlUp16A>
      1. Horizontal row 1 - Declare two variables for x, y position. Light up LED and move the row across the screen. The LED’s bounce from one end of the screen to the other and back.
      2. Horizontal row 2 - Declare two variables for x, y position. Keep a row’s gap between the two rows. Light up LED and move the row across the screen. The LED’s bounce from one end of the screen to the other and back.
      3. Vertical LED – Declare another set of variables. Use them to define an LED in the centre of the screen at the bottom. Program control into button A, B to move the LED up and down.
      4. If you reach the top you’ve won the game.
      5. Challenge - If you bump into another LED you’ve lost and game re-starts.
      6. Challenge – The horizontal rows can suddenly move up or down by a row.
      7. Challenge – Add a second LED that moves vertically
   3. LED Snake - Write a program to light up LED’s progressively like a snake moving around the board
      1. Button A increases the pace of the snake
      2. Button B decreases the pace at which the snake moves
      3. Button A+B re-sets the game
   4. Design an LED face with the ability to increase (button A) and decrease (button B) brightness
   5. Measure light level using LED’s
   6. Fireflies –
      1. Randomly lighting LED’s across the board
      2. Use variables and random functions
      3. Plot random X and Y co-ordinates for the single variable
      4. Challenge – Add a second variable and plot random X, Y co-ordinates
   7. Digital thermometer
      1. Display temperature in degree celcius (button A)
      2. Display temperature in farenheit (button B)
   8. Calculator game - <https://www.youtube.com/watch?v=S5JicIbzytg>
      1. Program 1st buttong to increase variable 1
      2. Program 2nd button to increase variable 2
      3. Program 1st + 2nd button to add variable 1st + 2nd
   9. Ticketing system - <http://www.101computing.net/bbc-microbit-ticketing-system/>
   10. Higher or Lower game - <http://www.101computing.net/bbc-microbit-higher-or-lower-game/>
   11. Car racing game - <http://www.101computing.net/microbit-car-racing-game/>
   12. Building a traffic light - <http://www.101computing.net/micro-bit-traffic-light/>
   13. Building a stopwatch timer - <http://www.101computing.net/micro-bit-stopwatch/>
   14. Simon says - <http://www.101computing.net/microbit-simon-game/>
   15. Uklele Chord Reader - <http://www.101computing.net/microbit-ukulele-chord-reader/>
   16. Tetris game - <http://www.101computing.net/bbc-microbit-tetris-game/>
   17. The queens cupcake - <http://www.101computing.net/the-queens-cupcake/>
   18. Goldrush - <http://www.101computing.net/gold-rush/>
   19. What a mole - <http://www.101computing.net/bbc-microbit-whack-a-mole/>
   20. Automated car park display - <http://www.101computing.net/bbc-microbit-automated-car-park-display/>
   21. Howarts sorting hat - <http://www.101computing.net/bbc-microbit-hogwarts-sorting-hat/>
   22. Speed warning alert (Using Accelerometer)
   23. Ping poing game (TBD)
   24. Virtual pets (TBD)
   25. Fitness device (TBD)
   26. Take pictured by talking to a camera on the phone using Bluetooth (TBD)
4. Course 3 - Making with the Microbit - Advanced lessons
   1. The Watch (Maker) - <https://www.microbit.co.uk/blocks/lessons/the-watch>
   2. Hack Your Headphones (Maker) - <https://www.microbit.co.uk/blocks/lessons/hack-your-headphones>
   3. Banana Keyboard (Maker) - <https://www.microbit.co.uk/blocks/lessons/banana-keyboard>
   4. Telegraph (Maker) - <https://www.microbit.co.uk/blocks/lessons/telegraph>
   5. Ornament Chain (Maker) - <https://www.microbit.co.uk/td/lessons/ornament-chain>
   6. Hero - <https://www.microbit.co.uk/blocks/lessons/hero>
5. Course 4 - Basics of Electronics
   1. Series circuit
      1. LED, Resistor
      2. LED, Resistor + Resistor (Series)
   2. Parallel circuit
      1. LED, Resistor
      2. LED, Resistor + Resistor (Parallel)
   3. Transistors – NPN (& PNP)
      1. Simple NPN circuit – Turn LED on/off
   4. Blinking an LED
      1. Single LED
      2. Multiple LED’s
      3. Increasing value of resistors
      4. Introduce a transistor
   5. Color control with a Tricolor (RGB) LED
      1. Single RGB LED
      2. RGB LED, Potentiometer
      3. RGB LED, Potentiometer, Switch
   6. Using an LDR and measuring analog inputs
      1. LDR, Potentiometer
   7. Breadboard switches in parallel with the main switches
      1. Switch 1, Switch 2
      2. Switch 1, Switch 2, LED 1, LED 2
   8. Dimming an LED using a potentiometer
      1. LED, Potentiometer, Switch
   9. Using a transistor to drive a motor
      1. NPN Transistor, Resistor, Motor
   10. Using the accelerometer to control motor speed
       1. Single speed / Duty Cycle
       2. Set button A to increase speed
       3. Set button A to increase speed and button B to decrease speed
   11. Setting the tone with a piezo buzzer
       1. Play music with the buzzer
       2. Detect input on button A an play a melody
       3. Detect input on button B and play a different melody
       4. Detect input on button A + B and play a different melody
6. Course 5 - Advanced Electronics
   1. Building an RGB gradient - <http://www.101computing.net/bbc-microbit-rgb-gradient/>
   2. Car lighting system - <http://www.101computing.net/bbc-microbit-car-lighting-system/>
   3. Wind power in action
   4. Making a game using the compass
   5. Creating a capacitor charge circuit
   6. Making a pedestrian crossing using LEDs
   7. Making a random dice
   8. Exploring transistors
      1. Darlington Pair for high current gain
      2. H-Bridge using 4 transistors to drive a motor
   9. Displaying temperature using the on-board sensor
   10. Building a soil moisture sensor
   11. Measuring humidity using the DHT11
   12. Measuring temperature using the DHT11
   13. Using a solid state relay to turn on LED, motor
   14. Create a Traffic Light Using 3 LEDs and a HC SR04 (Distance Sensor)
   15. Measuring algae in water using an LDR and an LED to determine if the water needs to be refreshed