

Medium Term Plan: Supporting Implementation of LTP/Progression Grid

Subject: Computing – Programming: Sensing	Year: UKS2 – Year A – Summer
NC/PoS: <ul style="list-style-type: none">• Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	
Prior Learning (what pupils already know and can do) Understanding giving and following instructions, using floor robots to create and debug programs, creating a sequence of commands to follow a routed, using Scratch Jnr to create a program using blocks, how to add music and link to motion, how to use the pen tool within programmes, how to use repeat and create count-controlled loops, how to create a programme in a text-based language, how to use conditions and selection to ask questions,	
End Points (what pupils MUST know and remember) <ul style="list-style-type: none">• To create a program to run on a controllable device• To explain that selection can control the flow of a program• To update a variable with a user input• To design and create a project that uses inputs and outputs on a controllable device	
Key Vocabulary Micro:bit, MakeCode, selection, condition, if then else, variable, random, sensing,	
Recommended Resources: https://tinyurl.com/UKS2-Sensing https://tinyurl.com/UKS2-Sensing-OA	
<i>Unplugged activities provide possible opportunities for the children to record.</i>	
Session 1: Micro:bits Using the recommended resources, children should be able to answer these questions: What is a micro:bit? How can the device be an input, process and output? How is the device programmed? How does MakeCode compare to Scratch? Can we create a basic program to control lights and sound on the device? How do we send the program to the device from the laptop? <i>Unplugged activity – children to screenshot and annotate their program and explain how they used the micro:bit and what happened.</i>	
Vocabulary: Micro:bit, MakeCode, input, process, output,	
Session 2: Conditional Inputs Using the recommended resources, children should be able to answer these questions: What inputs does the micro:bit have? How can 'if...then...else...' statements be used to influence the program? Can different inputs operate different outputs? Can we create a simple program to suit a real-world situation? Can we use the accelerometer to sense motion? Can this input work in the same way as others?	

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Unplugged activity – children to explain the purpose of the different inputs/outputs on the micro:bit and explain how the device may be used in real-world problems.

Vocabulary: Selection, condition, if then else, variable, sensing, accelerometer, value

Session 3: Step Counter

Using the recommended resources, children should be able to answer these questions:

How does a step counter work? What features are similar to the micro:bit? What will be the input, process and output functions be for this purpose? Can we design an algorithm and program to fit this purpose? Can we test the code using MakeCode as an emulator to debug before loading the program to the physical device?

Unplugged activity – children to screenshot their final program and evaluate.

Vocabulary: Micro:bit, variable, step counter,

Future learning this content supports:

The content of this unit will support other units on developing programs for a micro:bit