Unit Guide

National Centre for Computing Education

Key Stage 2 – Key Stage 3 Transition Project

Lesson	Brief overview	Learning objectives
Key stage 2 Lesson 1 Creating a micro:bit counter	Learners will apply their knowledge of sequence, inputs, and variables from KS2 computing lessons to create a sports counter using the micro:bit. They will plan their algorithm, before using the micro:bit MakeCode to code and run their creations. Learners will then practically test their sports counters before evaluating their effectiveness.	• To understand how variables and inputs can be used on the micro:bit to create a sports counter • To create an algorithm for a sport counter, and code, run and evaluate the use of the micro:bit to count activities
Key stage 2 Lesson 2 Creating a micro:bit timer	Learners will build on their knowledge of micro:bits from Lesson 1 to create a sports countdown timer. They will modify and debug existing programs, spotting mistakes, and analysing how they could be improved. KS2 concepts such as variables, sequence and selection will be taught, alongside introducing bar graphs, and Boolean variables (using true and false). They will use PRIMM and Parson's problems to develop their code and test it practically.	• To create a countdown timer on the micro:bit using variables • To evaluate the effectiveness of the LED display on the micro:bit when used as a timer • To modify a program using true and false statements and an if…else command • To create an activity completion using a micro:bit counter and a micro:bit timer
Key stage 3 Lesson 1 Micro:bit countdown	Learners will recap micro:bit input blocks from the KS2 transition lessons and be introduced to a count-controlled loop and efficiency in program code. Students will	• Compare different inputs on the micro:bit • Define iteration

	explore the use of a FOR loop using the terminology iteration to create a sports countdown starter.	• Modify a program with count-controlled iteration • Create a countdown program using count-controlled iteration
Key stage 3 Lesson 2 Basketball throw strength	Learners will continue with a sports theme and look at using a program on the micro:bit to capture data and determine the strength of their throw with a basketball. Learners will be introduced to functions and how they help a programs efficiency.	• Discuss how the game basketball is played and how movement is used • Define a function • Modify a program to gather data and visualise the data • Create a program to gather the strength of a throw in basketball