

 Computing Subject knowledge, discipline and vocabulary Year 4 Spring		
Unit	Repetition in Shapes	Data Logging
Previous Learning	<ul style="list-style-type: none"> • I can create sequences of commands to achieve an outcome • I can identify an issue within a program and debug it • I can link inputs, processes and outputs to programming 	<ul style="list-style-type: none"> • I can record data using tally charts and pictograms • I can group objects using common attributes • I can compare the benefits/drawbacks of tally charts and pictograms • I can represent data in different ways
Subject Knowledge (what)	<p>Understanding repetition in computer programming.</p> <p>NC:</p> <ul style="list-style-type: none"> – <i>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</i> – <i>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</i> – <i>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</i> – <i>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</i> <ul style="list-style-type: none"> • Everyday tasks can be listed as a set of instructions • 'Repeat' means to 'do again' • A loop command can be used in a program to repeat instructions • Count-controlled loops will repeat for a specific number of times • Loops are part of the patterns in a sequence (e.g. 'step 3 times' is the same as 'step, step, step') 	<p>Understanding how and why data is collected over time.</p> <p>NC:</p> <ul style="list-style-type: none"> - <i>...work with various forms of input</i> - <i>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</i> <ul style="list-style-type: none"> • Questions can be answered by using a given data set • Sensors are input devices that can be used for data collection • Digital devices can be used to collect data automatically • Data loggers capture 'data points' from sensors over time • Information can be exported in different formats
Subject Discipline (how)	<ul style="list-style-type: none"> • Identify everyday tasks that include repetition in sequences and list these as instructions • Identify patterns and loops within sequences • To use a count-controlled loop to produce a given outcome 	<ul style="list-style-type: none"> • Identify data that is needed to answer questions • Use digital devices to collect data automatically, choosing how often samples are collected • Use larger data sets to find information • Sort data by one attribute on a computer program • Present data in tables and graphs

Key Vocab	<ul style="list-style-type: none"> • Program- a detailed plan or procedure for solving a problem with a computer; the implementation of the algorithm as code • Command- an instruction given to a computer. • Turtle- an arrow or turtle image on screen that draws a line as it is programmed • Code snippet- this could be the same as program; it can have several sets of commands in one program • Algorithm- a set of rules followed by a computer. • Debugging- fix a sequence. • Design- a plan or drawing to show the function of objects. • Sequence- the order commands are given. • Order- the arrangement on a sequence. • Pattern- something that is repeated regularly • Repetition- Lines of code that will be run multiple times • Count-controlled loop- a loop that will stop running after a certain number of times. • Trace- to draw what will happen at each point of a code • Value- the worth of a digit • Decompose- Break something down into smaller parts • Procedure- a named code snippet that can be run multiple times 	<ul style="list-style-type: none"> • Table- information arranged in rows and columns • Organise- arrange in an order. • Data- facts. • Input Device- equipment used to provide data to a computer • Sensor- input device that records data about the physical movement round it • Data logger- an electronic device that records data over time or in relation a location • Logging- process of collecting and storing data to analyse • Data point- a discrete unit of information • Interval- the amount of space between two events • Analyse- examine something in detail • Data set- a collection of related sets of information • Import- convert a file into the format required by the application being used • Export- to save a copy of the current open document, database, image or video in a file format required by a different application • Collection- to carry out a process to gather data • Review- examining a process • Conclusion- draw inferences from a review
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