



Computing Subject knowledge, discipline and vocabulary

Year 6 Spring

Unit	Variables in Games	Introduction to Spreadsheets
Previous Learning	<ul style="list-style-type: none">• I can program sequences, including loops, in Scratch• I can use selection when programming sequences to alter algorithms when certain conditions are met	<ul style="list-style-type: none">• I can record and present data using a variety of methods• I can navigate, locate and filter data according to desired attributes• I can collect, record and analyse data to answer given questions
Subject Knowledge (what)	<p>Understanding variables in 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">• A variable is something that is changeable e.g. football score during a match• Variables can be used in programs (e.g. a score) as a placeholder in memory for a single value• A variable has a name and a value• Variables can hold numbers (integers) or letters (strings)• The value of a variable can be updated• A variable can be set as a constant (fixed value)• Variables need to be set up at the start of a program (initialisation)• There is only one value for a variable at any one time• If the value of a variable is changed, the previous value cannot be accessed (cannot undo)• If you read a variable, the value remains• The name of a variable is meaningless to the computer• The name of a variable needs to be unique	<p>Understanding how flat-file databases can be used to organise data in records.</p> <p>NC:</p> <ul style="list-style-type: none">- <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">• Objects/artifacts can be described using data• Computers deal with different data types in different ways• Formulas can be used to produce calculated data• Data can be calculated using different operations• Changing inputs also changes outputs• Formulas, including duplication, can be applied to data

Subject Discipline (how)	<ul style="list-style-type: none"> • Identify variables in existing programs • Experiment with the value of an existing variable • Choose names to identify the role of a variable to make it more usable (to humans) • Decide where in a program to set a variable • Update a variable with a user input • Use an event in a program to update a variable • Use a variable in a conditional statement to control the flow of a program • Use the same variable in more than one location in a program 	<ul style="list-style-type: none"> • Identify questions that can be answered using data, including outlines what makes a good question • Propose simple, relevant questions that can be answered using data • Explore how computers deal with different data types in different ways • Outline the most appropriate software tools to work with different data • Apply formulas to data, including duplication • Explain why data should be organised • Evaluate results in comparison to the question asked • Choose suitable ways to represent data
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Key Vocab	<ul style="list-style-type: none"> • Variable- something that is changeable • Name- a word to describe a variable • Value- the measurement of the variable • Set- to define the parameters • Design- to plan the look, function or workings of something before it is made • Event- actions that occur in a sequence on Scratch • Algorithm- A set of rules to be followed • Code- program instructions • Task- a unit of work • Project- a creation made in Scratch • Improve- to make something better • Evaluate- judge the outcome of something • Share- make a resource available from one host to other hosts on a network 	<ul style="list-style-type: none"> • Data- facts. • Data set- a collection of related pieces of information that can be manipulated by a computer • Spreadsheet- an electronic document in which data is arranged in rows and columns, and can be manipulated and used in calculations • Data heading- labels to organize the data into meaningful categories • Cells- an area on a spreadsheet where data can be entered • Spreadsheet application- a program in which a spreadsheet can be opened/created • Common attribute- a specification that defines a property of an object, element or file, which is the same for two or more entries • Format- a pre-established layout for data • Formula- an expression to tell a computer what mathematical operation to perform upon a specified value • Calculation- a mathematical operation • Input- the data received by a computer • Output- the data sent by a computer • Cell reference- the value of a different cell on the worksheet within the spreadsheet • Duplicate- to make an exact copy • Sigma- to find the 'sum of' • Propose- to put forward an idea, plan or intention • Graph- a data type that can be used to represent complex, non-linear relationships between two objects • Chart- a graphical representation of data • Results- the findings from an enquiry • Comparison- to identify the similarities and differences • Software- the programs used by a computer • Tools- the device or implement used to carry out a particular function
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