



**Computing**

**Year 6**

**Term 3**

**Programming & Control: variables**

**Key Question: What are variables and how are they used in programming?**

**National Curriculum Objectives:**

- 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.

**Vocabulary**

Variable, change, value, event, algorithm, code, project, event, debug, evaluate,

**Prior Learning:**

- Throughout Key Stage 2 the children have had experience of using block coding in Scratch. Through this they should understand the concepts of 'sequence', 'repetition' and 'selection'

**End Point:**

Children use their knowledge of variables to design and create a game in Scratch.

Use end of unit assessment quiz

**Safe and Responsible Use:**

use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

**Digital Literacy Skills:**

- use a range of software

**Knowledge:**

I know:

- a 'variable' is something that is changeable
- that a variable can be used in a program, eg 'score'
- a program variable is a placeholder in memory for a single value
- that a variable has a name and a value
- that the value of a variable can be used by a program
- that the value of a variable can be updated
- that variables can hold numbers (integers) or letters (strings)
- that a variable can be set as a constant (fixed value)
- the importance of setting up a variable at the start of a program (initialisation)
- that there is only one value for a variable at any one time
- that if you change the value of a variable, you cannot access the previous value (cannot undo)
- that if you read a variable, the value remains
- that the name of a variable is meaningless to the computer
- that the name of a variable needs to be unique

**Skills:**

I can:

- identify examples of information that is variable, for example, a football score during a match
- identify a variable in an existing program
- experiment with the value of an existing variable
- choose a name that identifies the role of a variable to make it easier for humans to understand it
- 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

**Cross Curricular Links:**

- Maths - negative numbers

**Oracy:**

**Key Questions:**

- What is a variable?
- Why are names and values important in variables?
- How can variables be changed?
- How are variables used in programming?