



## TSS Primary Computing MTP 2023-2024

### Year 6 Block 2 – Variables in Games

Week	Key Targets and Learning Objectives	Key Activities	Key Vocabulary
1	<p>To define a 'variable' as something that is changeable</p> <ul style="list-style-type: none"><li>I can identify examples of information that is variable</li><li>I can explain that the way that a variable changes can be defined</li><li>I can identify that variables can hold numbers or letters</li></ul>	<ul style="list-style-type: none"><li>In this lesson, pupils will be introduced to variables. Pupils will see examples of real-world variables (score and time in a football match), then they will explore them in a Scratch project.</li><li>Pupils will then design and make their own project including variables. Finally, pupils will identify that variables are named and can be letters (strings) as well as numbers.</li></ul>	<ul style="list-style-type: none"><li>Variable, change, name, value</li></ul>
2	<p>To explain why a variable is used in a program</p> <ul style="list-style-type: none"><li>I can identify a program variable as a placeholder in memory for a single value</li><li>I can explain that a variable has a name and a value</li><li>I can recognise that the value of a variable can be changed</li></ul>	<ul style="list-style-type: none"><li>In this lesson, pupils will understand that variables are used in programs, and that they can hold a single value at a time.</li><li>Pupils will complete an unplugged task that will demonstrate the process of changing variables. Next, they will explore why it is important to name variables.</li><li>They will apply their learning in a Scratch project in which they will make, name, and update variables.</li></ul>	<ul style="list-style-type: none"><li>Variable, name, value, set, change</li></ul>
3	<p>To choose how to improve a game by using variables</p> <ul style="list-style-type: none"><li>I can decide where in a program to change a variable</li><li>I can make use of an event in a program to set a variable</li><li>I can recognise that the value of a variable can be used by a program</li></ul>	<ul style="list-style-type: none"><li>In this lesson, pupils will apply the concept of variables to enhance an existing game in Scratch. They will predict the outcome of changing the same change score block in different parts of a program, then they will test their predictions in Scratch.</li><li>Pupils will also experiment with using different values in variables, and with using a variable elsewhere in a program. Finally, they will add comments to their project, explaining how they have met the objectives of the lesson.</li></ul>	<ul style="list-style-type: none"><li>Variable, set, change, design, event</li></ul>
4	<p>To design a project that builds on a given example</p> <ul style="list-style-type: none"><li>I can choose the artwork for my project</li><li>I can explain my design choices</li><li>I can create algorithms for my project</li></ul>	<ul style="list-style-type: none"><li>This lesson focuses on the design elements of programming. For the majority of the tasks, pupils will be working at the algorithmic level of abstraction.</li><li>Pupils will first design the sprites and backgrounds for their project, then they will design their algorithms to create their program flow.</li></ul>	<ul style="list-style-type: none"><li>Design, algorithm, code</li></ul>



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5	<p>To use my design to create a project</p> <ul style="list-style-type: none"><li>• I can create the artwork for my project</li><li>• I can choose a name that identifies the role of a variable</li><li>• I can test the code that I have written</li></ul>	<ul style="list-style-type: none"><li>• In this lesson, pupils will implement the algorithms that they created in Lesson 4 as code. In doing this, they will identify variables in an unfamiliar project and learn the importance of naming variables. They will also have the opportunity to add another variable to enhance their project.</li></ul>	<ul style="list-style-type: none"><li>• Task, algorithm, design, artwork, program, project, code, test, debug</li></ul>
6	<p>To evaluate my project</p> <ul style="list-style-type: none"><li>• I can identify ways that my game could be improved</li><li>• I can extend my game further using more variables</li><li>• I can share my game with others</li></ul>	<ul style="list-style-type: none"><li>• This lesson gives pupils the opportunity to build on the project that they created in Lesson 5. As the lesson develops, the scaffolding is gradually removed, so that the last main activity is without constraints. Finally, pupils will evaluate each other's projects, identifying features that they like, and features that could be improved further.</li></ul>	<ul style="list-style-type: none"><li>• Improve, evaluate, share</li></ul>
7		<ul style="list-style-type: none"><li>• During this final lesson learners will have the opportunity to consolidate and complete the work they have done in this unit.</li><li>• Learners will also check progress in code.org</li></ul>	