**Year 4 Computing Curriculum – Spring Term**

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| **Theme: Repetition in Shapes** | | | | | | | | | |
| **Curriculum objectives** | | | **Vocabulary** | | | | | | **Links across the curriculum** |
| Learners will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language.  This unit is the first of the two programming units in Year 4, and looks at repetition and loops within programming  You can use either a tablet, desktop or laptop computer for this unit. Logo software should be installed or accessible online, for example:  You can use Turtle Academy online at [turtleacademy.com/playground](https://turtleacademy.com/playground) | | | **Keyword** | Definition | sequences | a pattern or process in which one thing follows another. | | | **Geography** – Using direction and positional language  **PSHE** – taking turns and working as a team  **English** – writing instructions  -precise language choices  **Science** – making predictions | |
| design | to think up and plan out in the mind | decompose | Break down into smaller and manageable ‘chunks’ | | |
| test | a means of finding out the nature, quality, or value of something | code | How it is done | | |
| debug | to fix | plan | an action you want to take | | |
| commands | to order or instruct | program | a plan of what will be done | | |
| task | What is needed | algorithms | a determined and finite procedure for solving a problem | | |
| **Prior Knowledge:**  EYFS – To follow two step instructions. Year 1 – Commands for a robot. Year 2 – plan and debug algorithm  Year 3 - Sequencing Sounds | | | | | **Future Knowledge:**  Year 5 - control a simple circuit connected to a computer. Year 6 - To choose how to improve a game by using variables | | | | |
| **Lesson Sequence** | | **Key Knowledge** | | | | | **Key Skills** | | |
| To identify that accuracy in programming is important | | * Logo is a text-based programming language where pupils type commands that are then drawn on screen. * Pupils will learn the basic Logo commands and will use their knowledge of them to read and write code. | | | | | * Program a computer by typing commands * Explain the effect of changing a value of a command * Create a code snippet for a given purpose | | |
| To create a program in a text-based language | | * To debug a code, you need to find any errors and fix the errors. | | | | | * Use a template to draw what I want my program to do * Write an algorithm to produce a given outcome * Test my algorithm in a text-based language | | |
| To explain what ‘repeat’ means | | * Repeated patterns could be for numbers, shapes, and symbols. * Algorithms for drawing a square will be used to program a square the ‘long’ way and recognise the repeated pattern within a square. Once they know the repeated pattern, they will use the repeat command within Logo to program squares the ‘short’ way. | | | | | * Identify repetition in everyday tasks * Identify patterns in a sequence * Use a count-controlled loop to produce a given outcome | | |
| To modify a count-controlled loop to produce a given outcome | | * A count-controlled loop is used when the number of iterations to occur is already known. | | | | | * Predict the outcome of a program containing a count-controlled loop * Choose which values to change in a loop * Identify the effect of changing the number of times a task is repeated | | |
| To decompose a task into small steps | | * To know that decompose means to break into smaller and manageable ‘chunks’. | | | | | * Identify ‘chunks’ of actions in the real world * Use a procedure in a program * Explain that a computer can repeatedly call a procedure | | |
| To create a program that uses count-controlled loops to produce a given outcome | | * To know what a controlled loop is. | | | | | * Design a program that includes count-controlled loops * Make use of my design to write a program * Develop my program by debugging it | | |
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| **Themes and links** | | | | | | | | | |
| **Computing themes** | **Where these are covered:** | | | | | | | **Links across the Computing curriculum** | |
| **Technology around us**  Autumn 1 | * Logo links to the real world and computer games the children know. | | | | | | | |  |  | | --- | --- | | **EYFS** | To listen to instructions | | **1** | Commands for a Robot | | **2** | Robots and Debugging | | **4** | Repetition in Sounds – decomposition | | **5** | Simple circuits | | **6** | Variables in programming | | |
| **Digital painting**  Autumn 2 | * Understanding the need for coding and algorithms | | | | | | |
| **Programming A**  Spring 1 | * Programming the Logo | | | | | | |
| **Data /information**  Spring 2 | * Storing the commands and the effect on language on the outcome of your commands. | | | | | | |
| **Creating media**  Summer 1 | * Your own designs of Logo | | | | | | |  | |
| **Programming B**  Summer 2 | * Using Logo to implement an algorithm as a code | | | | | | |