**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 programmingYou 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
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| 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
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| 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
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| 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
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| 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
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| 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.
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| **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 |

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| **Digital painting** Autumn 2  | * Understanding the need for coding and algorithms
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| **Programming A** Spring 1  | * Programming the Logo
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| **Data /information** Spring 2  | * Storing the commands and the effect on language on the outcome of your commands.
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| **Creating media** Summer 1  | * Your own designs of Logo
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| **Programming B** Summer 2  | * Using Logo to implement an algorithm as a code
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