Enriching lives every day; enabling our school community to learn, achieve and flourish through living 'life in all its fullness'

Innovation

Subject: Computing

Year group: 1

Term: Summer term

Unit name: Coding 1: 7 (Purple Mash) (CS)

Subject knowledge: Please use Purple Mash to familarise yourself with 2Code Chimp.

Big idea: To use programming blocks to use, modify and create programmes.

Progression of skills:

Children will have experience of programming Bee Bots or Code & Go mice after completing unplugged activities to ascertain how algorithms work. They will begin to understand the terminology action, algorithm, and debug. The children will be confident in programming directions and how to correct their actions.

Prior learning:

EYFS

In **EYFS,** children will have experience of following algorithms through unplugged activities. They will have practical experience of solving problems and they will be familiar with using programmable toys such as Code-A-Pillar and Coding Critters.

Future learning:

Year 2- Coding

Children will recap their understanding of key computing terminology associated with computer science such as algorithm, bug, debug, and command. Learners will understand the collision detection event. They will create a computer programme using a given design. This will be their first opportunity to programme using software.

Key Vocabulary

Action
Types of commands which are run on an object. They could be used to move an object or change a property.

Algorithm
A precise step by step set of instructions used to solve a problem or achieve an objective.

Background
The part of the program design that shows behind everything else. It sets the scene for the story or game.

Code
Instructions written using symbols and words that can be interpreted by a computer.

Command
A single instruction in a computer program.

Debug/Debugging
Finding a problem in the code and fixing it.

Event
Something that causes a block of code to be run.

Execute
To run a computer program.

Input
Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.

Instructions
Detailed information about how something should be done.

Object
An element in a computer program that can be changed using actions or properties.

Output
Information that comes out of the computer e.g. sound.

Properties
All objects have properties that can be changed in design or by writing code e.g. image, colour and scale properties.

Run
To cause the instruction in a program to be carried out.

Scale
The size of an object in 2Code.

Scene
The background and objects together create a scene.

Sound
This is a type of output command that makes a noise.

When clicked
An event command. It makes code run when you click on something (or press your finger on a touchscreen).

National Curriculum links :

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.
- Create and debug simple programs.
- Use logical reasoning to predict the behaviour of simple programs.

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Implementation:

Children will be accessing the 2Code activities through Purple Mash. It is advantageous to set each task as a 2Do. Once the children have completed their 2Do they can hand it in and leave a comment for the class teacher, allowing for self-evaluation. All PowerPoints offer the opportunity for whole class evaluation.

If the child is stuck at anytime during the programming activity, they can access hints and tips through the software.

Recording can be done by identifying that the work is saved in the child's Purple Mash folder. Print outs /Screen grabs could also be shared through the big book.

Spiritual Development:

Computing allows children to reflect on awe and wonder of the achievements and possibilities of ICT in a modern world. Exodus 15: 11. And amazement seized them all, and they glorified God and were filled with awe

Key learning assessment statements:

To understand what instructions are and predict what might happen when they are followed.

To use code to make a computer program.

To understand what object and actions are.

To understand what an event is.

To use an event to control an object.

To begin to understand how code executes when a program is run.

To understand what backgrounds and objects are.

To plan and make a computer program

Future learning:

Year 3- Sequence in Music (CS)

Within this unit, children will move on to using Scratch for the first time. They will relate what they have learnt about objects, actions, and block coding in KS1 to a new programme. They will programme an object to play a tune, debugging as they go.

Year 4- Repetition in Shapes (CS)

Within this unit, children will use the 2Logo software on Purple Mash to create a series of instructions to enable their "turtle" to create repeated shapes. This will involve repetition and link to work in maths about angles and position and direction. NCCE unit or 4.5 Logo unit on Purple Mash.

Year 5-Selection in Physical Computing (CS)

Learners will use physical computing to explore the concept of selection in programming using the Crumble programming environment. Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program components (including output devices- LEDs and motors) through the application of their existing programming knowledge. Learners are introduced to conditions as a means of controlling the flow of actions and explore how these can be used in algorithms and programs using an input device (push switch).

Year 6- Variables in Games (CS)

In Year 6, children will explore the concept of variables in programming through games in Scratch. They will create a simulation of a scoreboard.

Year 6-Sensing (CS)

This unit is the final KS2 programming unit and brings together elements of all the four programming constructs: sequence from year 3, repetition from year 4, selection from year 5 and variables, introduced in year 6. Children will use Micro:bits as a physical device.