Innovation

Subject: Computing

Year group: Year 3

Term: Summer

Unit name: Programming A- A Sequence in Music (6 sessions) Peer partner.

This unit uses Scratch. It is available through the Windows menu, RM Unify or online at http://scratch.mit.edu.

User guide videos can be found within Curriculum planning.

Big idea-To create a stop- frame animation, including music and text.

- National Curriculum -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
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
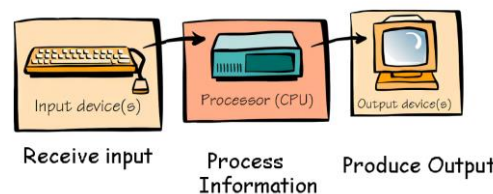
Prior learning:-

In KS1, children have been introduced to floor robots i.e. Beebots, Probots and Code&Go Robot mice.

They have completed Programming Unit A in both year groups. From Year 2, they learn block coding through using Chimp on Purple Mash. Coding vocabulary such as algorithm, debugging, and different block coding titles such as event, object and action blocks are introduced and used.

Coding blocks are grouped according to colour. The following table will be useful. The white circles on motion can be altered.

What Computers Do

Input device(s) — Receive input
Processor (CPU) — Process Information
Output device(s) — Produce Output

The spring term unit, Connecting Computers, will help children know the process.

Key learning assessment statement -What will the children know by the end of the unit?

To identify the objects in a Scratch project (eg. Sprite) and recognize that they have attributes

To identify that each sprite is controlled by the commands it is given

To join blocks together to create a sequence of commands (sound)

To design , combine and order sound and motion commands to create a sequence

To create a project from a task description

To implement my algorithm as code

Spiritual Development

Computing allows children to reflect on the awe and wonder of the achievements and possibilities of ICT in a modern world. They think about the

limitless opportunities that could be achieved thus promoting their sense of self and motivation. Exodus 15:11: And amazement seized them

all, and they glorified God and were filled with awe, saying, "We have seen extraordinary things today."

This unit uses the concept of levels of abstraction as a framework .Learners will work at all four levels of abstraction:

- **Task: What is needed?**
- **Design: What it should do?**
- **Code: How is it done?**
- **Running the code: What it does?**
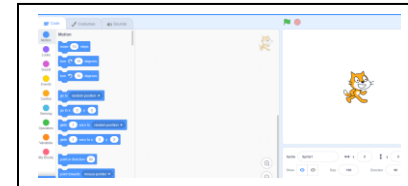
They need to understand that an algorithm is a precise set of ordered instructions.

Algorithm design example:

1	Event	When mouse clicked
2.	Sound	Play sound C until done
3.	Other action	Next costume
	Backdrop	Concert

Innovation subject driver:-

Children will be encouraged to tinker with the Scratch software in order to understand the function of the blocks. They will be creating their own sequence of music using an instrument sprite.

Key Vocabulary:-

Programming- The action of writing a serious of instructions for a computer to follow.

Blocks- Within Scratch, codes are written through a serious of instructional blocks being sequenced.

Commands- Instructions.

Code- A sequence of instructions transferred into language that the computer can understand.

Sprite- A cartoon like object that can be programmed to follow commands.

Motion- Any movement that the sprite is programmed to do

Sequence- The set of instructions that the sprite runs through in any one time.

Event- Informs the computer when the object should complete an action i.e. when clicked.

Design- An area where the block code can be dragged, dropped, altered etc.

Costume- Changes to the sprite's appearance.