Computing- Year 4- Summer Term- Repetition in Game Design

Prior Learning: We will be progressing our learning from where we were: making objects move; creating simple inputs; making different type of input; making buttons and instructions using Scratch junior. We will be continuing to use Scratch to develop our knowledge of: moving objects, creating lines, adding different features and debugging programs.
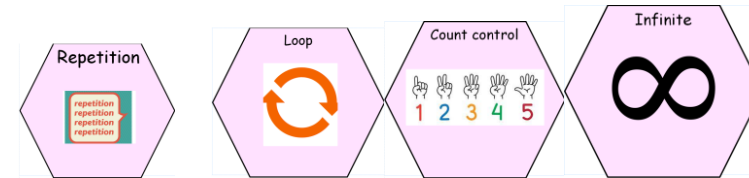
Theme: Repetition in games

Concept: Programming

Hardware: Laptops

Software: Scratch

Words we will know!

Repetition | Loop | Count control | Infinite

1. Using loops to create shapes

We will look at real-life examples of repetition, and identify which parts of instructions are repeated. Then use Scratch to create shapes using count-controlled loops. We will consider what the different values in each loop signify, then use existing code to modify and create new code, and work on reading code and predicting what the output will be once the code is run.

sticky knowledge   Loops in code repeat instructions.

2. Different loops

We will look at different types of loops: infinite loops and count-controlled loops. We will then practise using these within Scratch and think about which might be more suitable for different purposes.

sticky knowledge   Infinite loops will keep going until the user stops it from running.

3. Animate your name

We will create designs for an animation of the letters in our names. The animation will use repetition to change the costume (appearance) of the sprite. The letter sprites will all animate together when the event block (green flag) is clicked. When we have designed our animations, we will program them in Scratch. After which we will evaluate our work, considering how effectively we used repetition in our code.

4. Modifying a game

We will look at an existing game and match parts of the game with the design. We will make changes to a sprite in the existing game to match the design. Then look at a completed design, and implement the remaining changes in the Scratch game. We will add a sprite, re-use and modify code blocks within loops, and explain the changes made.

5. Designing a game

We will look at a model project that uses repetition. Then design our own games based on the model project, producing designs and algorithms for sprites in the game. We will share these designs with a partner and have time to make any changes to our design as required.

6. Creating your games

We will build our games, using the designs we created in Lesson 5. We will follow our algorithms, fix mistakes, and refine designs in our work as we build. We will evaluate our work once it is completed, and showcase our games at the end.