

Space Adventures Computing Unit 2

Lesson 3 – Starburst

Curriculum Mapping (Computing KS2)

- ◆ use sequence, selection, and repetition in programs; work with variables and various forms of output
- ◆ use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Learning Objective

Code a simulation of Tazz's spaceship travelling through the stars.

Prior Learning

Good knowledge of most KS2 coding techniques, familiarity with Scratch.

Introduction

Show pupils the ***U2L3 introduction.mp4 video***. Using the prompts in the video, ask pupils to identify how the stars in the simulation move and behave. (This can be done orally or written in rough, and is known as the algorithm).

Main Activity

Pupils use Scratch to create their own simulation of a the spaceship using multiple moving stars. Show the class the ***U2L3 demonstration.mp4 video*** or how to access it on their own computers. Hand out the ***U2L3 step by step.pdf*** guide or show pupils how to access it on their computers. (Opening a second tab in the browser will allow pupils to switch between the help guide/video and their own work).

Extension Activity

Show pupils the activities on the ***U2L3 going further.pdf*** document. These include experimenting with aspects of the code and adding details to the interior of Tazz's spaceship.

Plenary

Discuss with pupils how the starburst program creates the illusion of travelling. Ask pupils to think of other simulations or games they could make using this technique – eg flying through clouds, travelling through water with bubbles moving towards us, driving with cars approaching etc.

Notes

Most of the code is attached to the star sprite, with just one line of code on the spaceship window to keep it in place.

The star sprite has two sections of code - one to make 30 clones (duplicates) of the star sprite and the other to make the cloned sprites move. The clones start by being given a random direction (0 to 360) and sent to the middle of the screen. They are also shrunk down to be very small.

A loop then makes the stars move forward and grow slightly until they reach the edge of the screen. They then go back to the middle and do the same thing again - in a different random direction.

The speed slider makes it easier to change the speed variable - and allow the spaceship to accelerate.