

Space Adventures Computing Unit 1

Lesson 6 – Splashdown!

Curriculum Mapping (Computing KS2)

- ◆ use sequencing, selection and repetition in programs; work with 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

Learning Objective

Code a simulation where Tazz's spaceship returns to Earth, using a parachute to slow it down.

Prior Learning

Pupils should have completed most of the previous lessons in this unit.

Introduction

Show pupils the *U1L6 introduction.mp4 video*.

Using the prompts in the video, ask pupils to explain the way the spaceship moves at different stages during the simulation. (This can be done orally or written in rough, and is known as the algorithm).

Main Activity

Pupils use Scratch to code the simulation. They create a second 'costume' to show the spaceship with a parachute.

Show the class the *U1L6 demonstration.mp4 video* or how to access it on their own computers.

Hand out the *U1L6 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 *U1L6 going further_export.pdf* document. These include experimenting with aspects of the code, and making the movement of the spaceship more realistic.

Plenary

Talk to pupils about the use of 'costumes' to show the spaceship with and without the parachute.

Ask them if they can think of simple computer games/apps that use similar techniques. (Eg simple animation showing a character walking, carrying something or jumping are all examples of a slightly different image of a sprite being used). Ask them how they could use this technique in other lessons – eg lesson 5 to change the sprite of the spaceship after it was hit by the asteroid cloud.

Notes

The program starts by positioning the spaceship at the top of the screen, facing to the right. It switches the costume to the version without a parachute. The first loop then starts moving the spaceship slowly across the screen. If it gets to the right hand side it jumps back to the left. This is done by checking if the x coordinate of the spaceship is more than 220. Setting it to -220 moves it back to the left hand side.

The key press event code block rotates the ship clockwise very slowly if the down arrow is pressed. The spaceship would probably not be able to turn the opposite way at this time as it is being pulled down to Earth by gravity.

Once P is pressed to release the parachute the second costume with the parachute is shown, and the spaceship turns to face upwards. The second loop slowly moves the spaceship down until it hits the sea.