

Space Adventures Computing Unit 2

Lesson 5 – Moon Buggy Driver

Curriculum Mapping (Computing KS2)

- ◆ 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

Learning Objective

Build a game driving a moon buggy over the surface of the Moon.

Prior Learning

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

Introduction

Remind pupils that gravity on the Moon is much lower than Earth. Show pupils the **U2L5 introduction.mp4 video**. Using the prompts in the video, ask pupils to explain the rules that appear to that make the buggy move. (This can be done orally or written in rough, and is known as the algorithm).

Main Activity

Pupils use Scratch to create their own Moon buggy driver game. They will use a variable to store the speed of the buggy.

Show the class the **U2L5 demonstration.mp4 video** or how to access it on their own computers. Hand out the **U2L5 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 **U2L5 going further.pdf** document. These include experimenting with aspects of the code and changing the way the rocks look and move.

Plenary

Discuss how this game gives the impression of the moon buggy moving by moving the background from the right to the left while the buggy stays still. This is called a side-scroller game. Ask pupils to list games they know that use this technique, or design one of their own.

Notes

The first part of this program makes the rock sprites move across the screen. This makes it look as though the buggy is driving forwards. When each rock reaches the left hand side it is deleted. Rocks are placed at random y coordinates so they create an undulating landscape.

The moon buggy moves up if it hits a rock and rotates slightly anti-clockwise. If it is in 'clear air' and not hitting a rock it rotates back in a clockwise direction.

Changing the speed doesn't make the car go faster - just the rocks.