

KS2 Lesson Plan

Introduction

This game was developed with engineers from the LTC to showcase the importance of road safety. Using Make Code, players will manage road signs responding to different weather conditions.

Learning Objectives

- “ 1. Use MakeCode to program the correct road signs in response to changing weather conditions.
- 2. Gain an understanding of the different kinds of jobs involved to keep a busy road safe.
- 3. Gain a basic understanding of how coding can change game play elements.

Guiding Ideas and Questions

- “ 1. Why do you think that car speed needs to change for different weather types?
- 2. Why is it important that road signs respond quickly to changes in weather?
- 3. Out of the jobs you've learned about, which one would you most like to do and why?

Performance expectations

In the game, players will be expected to use MakeCode to successfully program the road signs. They will also be learning about the variety of job roles involved, along with facts about other road schemes.

Lesson Structure

To help you plan your lesson structure, watch this video and be taken step by step through the game. The below notes provide additional guidance.

Part 1 -

Before they start please explain what Highways England does -

'Highways England manage and improve England's motorways and major A roads, helping our customers have safe, smoother and more reliable journeys. We're the government company which plans, designs, build, operates and maintains England's motorways and major A roads, known as the strategic road network (SRN). Make up of 4,300 miles of motorways and major A roads which are at the core of our national transport system.'

Students will start in the Highways England offices. Here they can interact with the NPCs (non-player characters) who will either give them bits of information or say generic greetings.

Allow them to explore for 5 minutes and ask them to finish by speaking with Adam located near the blue doorway.

Next, they will make their way through the doorway. They are not to click on anything, or teleport to the scheme, until the next part.

Part 2 -

Get the students to click on the NPC stood in the hallway which says 'Road Signs Game'. They will be given two options for the next part. They must click the button that says Key Stage 2.

They will then be teleported to the virtual road scheme. Here they should interact with the first NPC, Selina, who will give them more instructions. Starting in the portacabin next to NPC Selina, allow them 10 minutes to explore the scheme, talking to each of the NPCs who will provide facts and job information.

At the end of the 10 minutes, get them to stand where they can easily see the speed signs on the gantry.

Part 3 -

Now the student will start the coding part of the lesson which will be via following step by step instruction provided within the above video - see from 3 minutes and 2 seconds. The result should be that they use MakeCode to programme three road signs to respond to different types of weather; 50mph when there is thunder, 60mph when there is rain, and

70mph when it is sunny. To open MakeCode they can either press the C key, or type /code into the chat. The final code should look like this [This is what the finished code should look like](#). Allow 25 to 30 minutes to complete the task. If students complete this faster get them

to start the coding part again.

Revision #14

Created 8 July 2021 15:16:41 by joe

Updated 3 September 2021 12:42:06 by Megan