

## Lower Key Stage 2 - Session 4

### General solution using repeat until and if... do...



## Objectives

- Understand selection using the **if... do...** statement
- Understand that you can use an **if** statement inside a **repeat** loop
- Understand the idea of a general solution, e.g. a program which works for any single road

## Resources

- Levels 36 to 38 in Rapid Router
- Resource sheets LKS2-S4-1 to LKS2-S4-4
- Interactive Whiteboard (IWB)
- Video 5

## Vocabulary

- General solution
- Predict, evaluate
- Else if

## Let's get started

Ask the children to recall what they learnt in the last session.

Show level 36 [fig S4.1] on the IWB with the following code blocks in the workspace:



fig S4.1

**Can we write a program that will drive the van along this route?**

**Can you explain which blocks of code to choose and why?**

Create the code together and test it.

Give out resource sheet LKS2-S4-1 [fig S4.2] to help the children discuss and test the algorithm, by tracing the route with the van card.

**Would this work on any route?**

**Look at the van's journey, when does the computer ask the if questions?**

## Practical

Give children a little time to test out their general algorithm on levels 36 to 38 of Rapid Router.

Then, bring them together to explain that they are now going to make their own maps to test the **general rule**. Demonstrate how to make your own route.

Mark the beginning and end. Ask the children to test the code that you have come up with on their routes using LKS2-S4-2 [fig S4.3].

Ask each child to save their route, take a screen shot and paste it into a text (e.g Word) document. Some will be able to add their explanation of why this general program works and save this to their portfolio.

## Share and review

**Notice that you don't get the full score – why is this? Well, there is a neat way of asking lots of questions in one go... if we have lots of choices we can use the **else if** statement.**

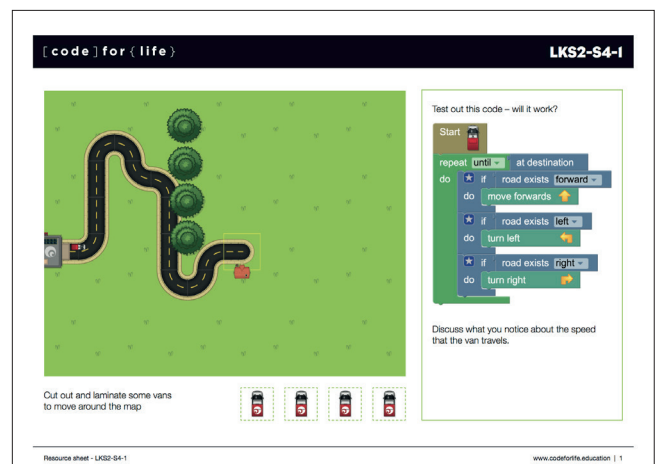


fig S4.2

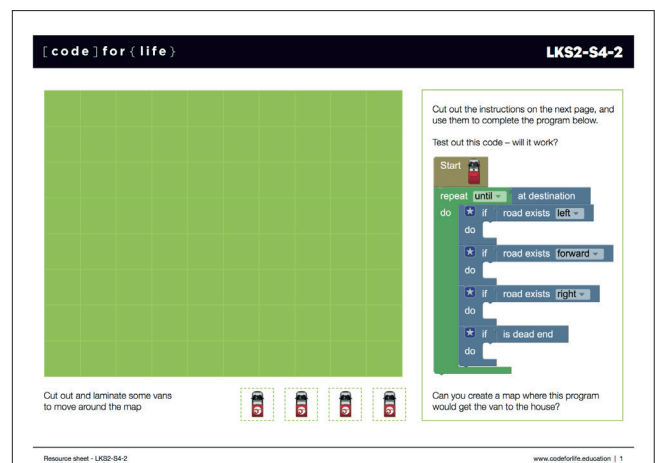
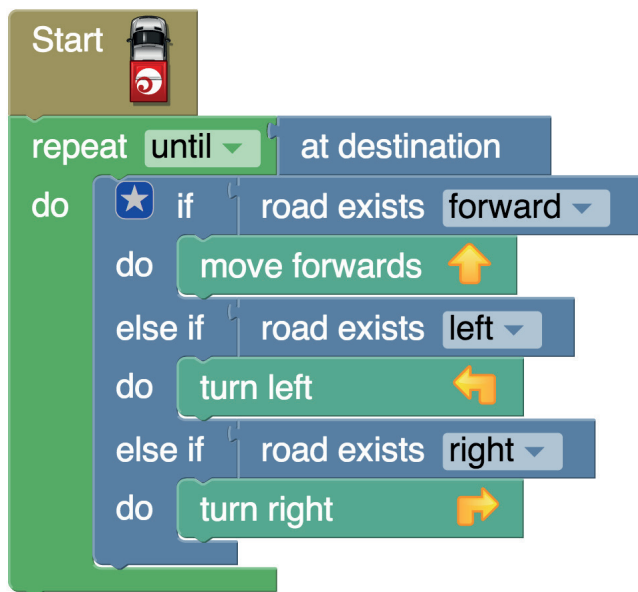


fig S4.3

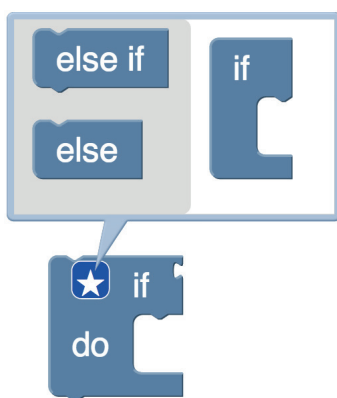
Explain using an example:

- **if** it is hot **do** put on your sandals
- **else if** it is cold **do** put on your shoes
- **else if** it is rainy **do** put on your wellies

Show the general program to drive along any single route using this new code:



Demonstrate how to create this code by clicking the star icon in the **if** block of code to drag across as many **else if** blocks as you need.



**Can you explain what the computer will do in this loop, when the road turns to the right?**

