

Lower Key Stage 2 Program Solutions Table







LKS2-S1

- Apply the movement instructions and **repeat** loops to create a program
- Debug the program
- Create a challenge for a partner which involves a **repeat** loop

Loops with conditions

LKS2-S2

- Understand how to use a conditional **repeat – repeat until... at destination**

Level 29	No need for numbers.		<ul style="list-style-type: none"> • move forwards • repeat until... at destination 	
Level 30	Can you do that again?		<ul style="list-style-type: none"> • turn left • turn right • repeat until... at destination 	

Level 31 Practice makes perfect.

- move forwards
- turn left
- turn right
- repeat until... at destination

**Level 32 Uh oh, it's 'until' fever!**

- move forwards
- turn left
- turn right
- repeat until... at destination

**If... only****LKS2-S3**

- Understand selection using the **if... do...** statement
- Understand that you can use an **if** statement inside a **repeat** loop
- Use this knowledge to create short, efficient programs to complete simple single routes

Note: Although **else if** is not introduced until Session 5, solutions using this statement will still get a full score

Level 33 Now it's time to try the 'if' block.

- move forwards
- repeat until... at destination
- if... do...



Level 34

Multiple 'ifs'



- move forwards
- turn left
- repeat until... at destination
- if... do...

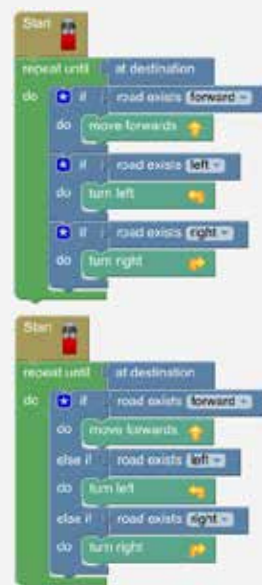


Level 35

Let's put it all together!



- move forwards
- turn left
- turn right
- repeat until... at destination
- if... do...



LKS2-S4

- 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

Extension: use **if... do... else if...**

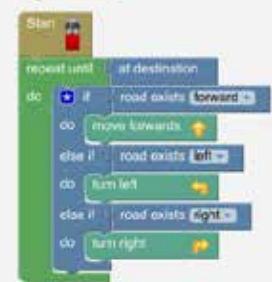
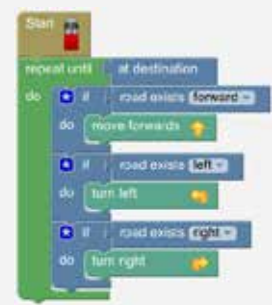
Level 36 What else? 'if-else', that's what!



- move forwards
- turn left
- turn right
- repeat until... at destination
- if... do...

Extension:

- if... do... else if...



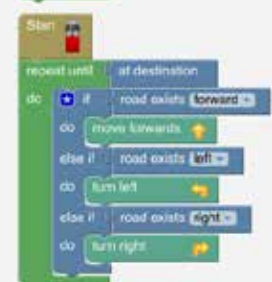
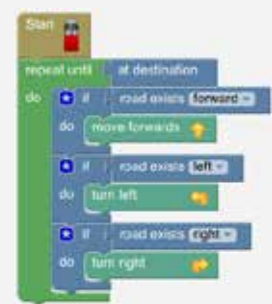
Level 37 A bit longer.



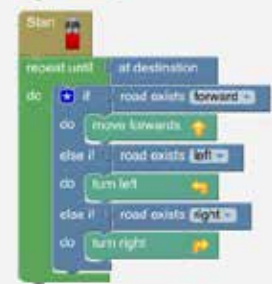
- move forwards
- turn left
- turn right
- repeat until... at destination
- if... do...

Extension:

- if... do... else if...



Third time lucky!



Level 40

Adjust your previous solution.



- move forwards
- turn left
- turn right
- repeat until... at destination
- if... do... else if...

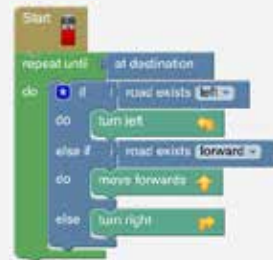
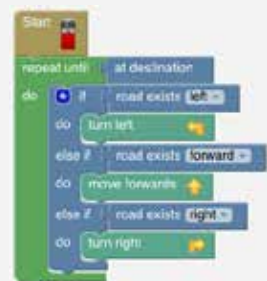


Level 41

Decision time.



- move forwards
- turn left
- turn right
- repeat until... at destination
- if... do... else if...



Level 42

What do you think this time?



- move forwards
- turn left
- turn right
- repeat



Level 43 **Good work! What else can you do?**


- move forwards
- turn left
- turn right
- repeat
- if... do... else if...



Traffic lights

LKS2-S6

- Understand how to use **if... else if** statements in a new context – traffic lights
- Incorporate a wait command
- Analyse how the traffic lights work within the app
- Understand that the light colour is a **variable**

Level 44 Oh no! Traffic lights!



- move forwards
- repeat
- repeat until... at destination
- if... do...
- if traffic light red... do wait



Level 45 Green for go, red for wait.



- move forwards
- repeat until... at destination
- if... do... else if...
- if traffic light red... do wait



Level 46 Well done - you've made it really far!

- move forwards
- turn right
- repeat until... at destination
- if... do... else if...
- if traffic light red... do wait

**Level 47** What a mess! But can you spot a route?

- move forwards
- turn left
- repeat until... at destination
- if... do... else if...
- if traffic light red... do wait

**LKS2-S6 (extension)**

- Gifted and talented

Level 48 Put all that hard work to the test.

- move forwards
- turn left
- turn right
- turn around
- repeat until... at destination
- if... do... else if...
- if traffic light red... do wait



LKS2-S7 to LKS2-S8

- Apply their understanding of repetition and selection to create their own scenario using the **repeat until** and **if... do...** statement blocks
- Be able to set a challenge for a friend e.g. work out the shortest route to the destination, but make sure you do not go through a red light

Note: Levels 49 and 50 illustrate that children can use different backgrounds in 'Create' mode.

Level 49

Amazing! Have another go!



- move forwards
- turn left
- turn right
- turn around
- repeat until... at destination
- if... do... else if...
- if traffic light red... do wait



Level 50

Light maze.



- move forwards
- turn left
- turn right
- repeat
- repeat while

