Key Stage 1 Session 8
Follow-own and extension work on multiple repeat loops and nested repeats

- Understand and use simple repetition
- Use the repeat instruction several times in a program
- Use a repeat within a repeat loop (extension)

Resources

- Levels 23 to 25 in Rapid Router
- Resource sheets KS1-S7-3, KS1-S8-1, and KS1-S8-2

Vocabulary

- Repeat, repetition

Let's get started

The **repeat** loop is a key concept in computer programming.

This session consolidates understanding of the 'repeat' loop, giving children a chance to work through levels 23 to 25. Several of these levels require more than one **repeat** loop. It also gives a chance for the more advanced children to look at the more complex '**repeat** within a **repeat**'.

Recap on level 22 *[fig S8.1]* with the class.

Can you sport parts of the route where blocks of code are repeated?

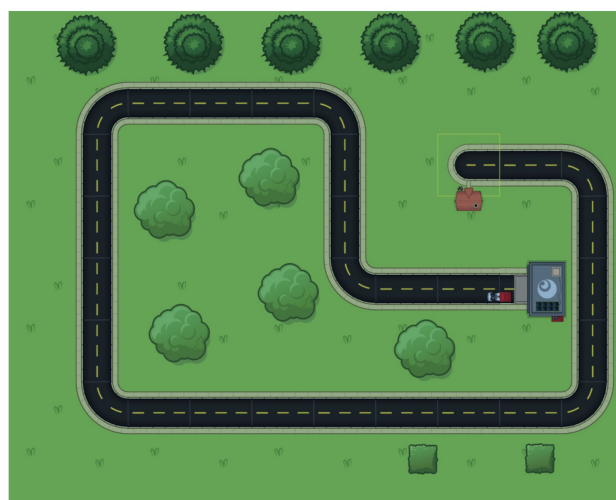This route includes up to six **repeat** loops for the forward instructions.

fig S8.1

Main activity

Give out resource sheet KS1-S7-3 *[fig S8.2]* to those who have not tackled level 22 independently, and ask children in pairs to mark out the sections

of the road where **repeat** could be used, recording their code.

Others will be able to tackle levels 23 and 24 using several **repeat** loops.

For gifted and talented pupils, look at level 23, where they can 'nest' a **repeat** loop within a **repeat** loop.

Ask them to look at resource sheet KS1-S8-1 *[fig S8.3]* and work out their algorithm using **repeat**.

They will probably come up with:

Can they see another **repeat** pattern here? They may see that it is repeated twice, so you could put that sequence inside a repeat loop.
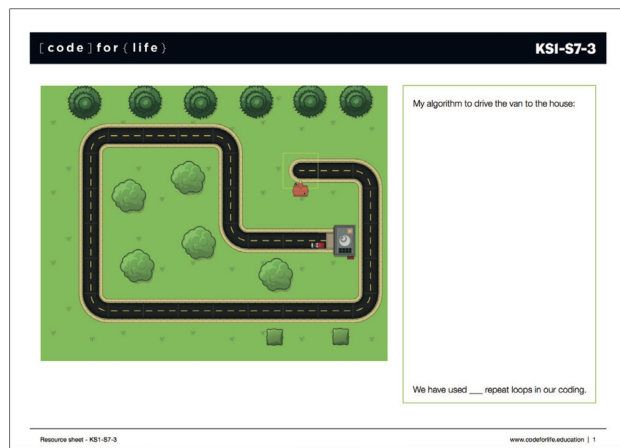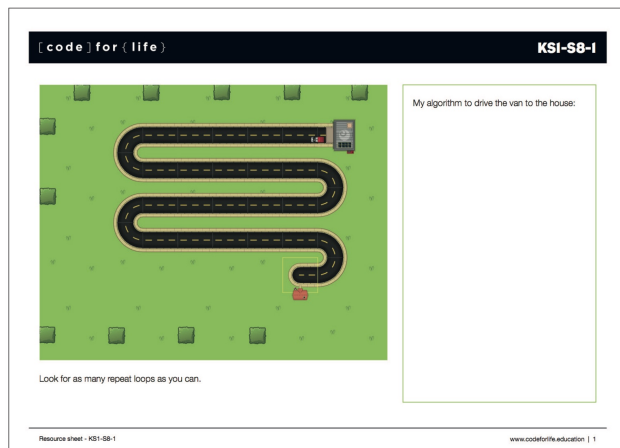

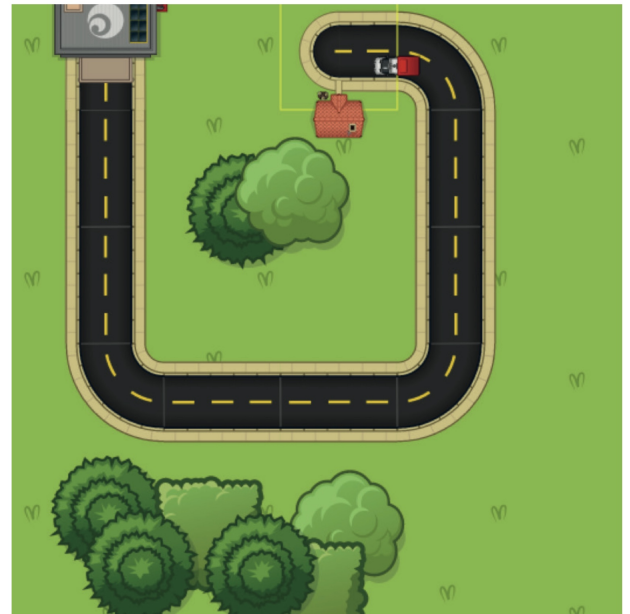*fig S8.2*

fig S8.3

fig S8.4

```
repeat  2  times
do    repeat  5  times
      do    move forwards  ⬆

      repeat  2  times
      do    turn left      ⬅

      repeat  5  times
      do    move forwards  ⬆

      repeat  2  times
      do    turn right     ➡
```
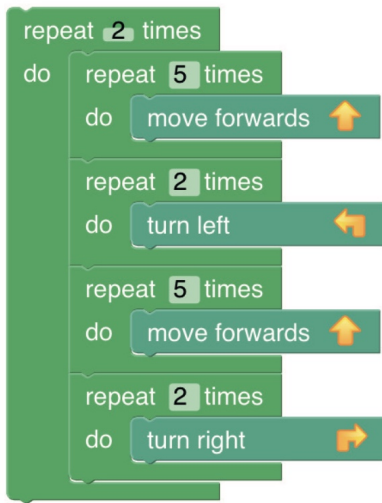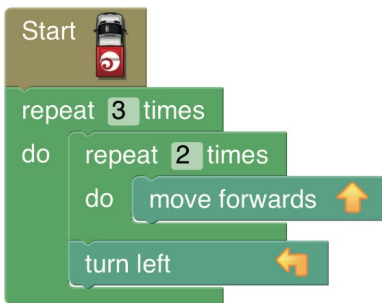

fig S8.5

Unplugged activity for gifted and talented pupils

Give gifted and talented children resource sheet KS1-S8-2 *[fig S8.4]* on nested repeat with this code, and ask them to draw the route.

```
Start  🚚
       🔄
repeat  3  times
do    repeat  2  times
      do    move forwards  ⬆

      turn left            ⬅
```

This is the solution *[fig S8.5]*.