

Computing

Count controlled iteration

Lesson 5 of 6

Ben Garside

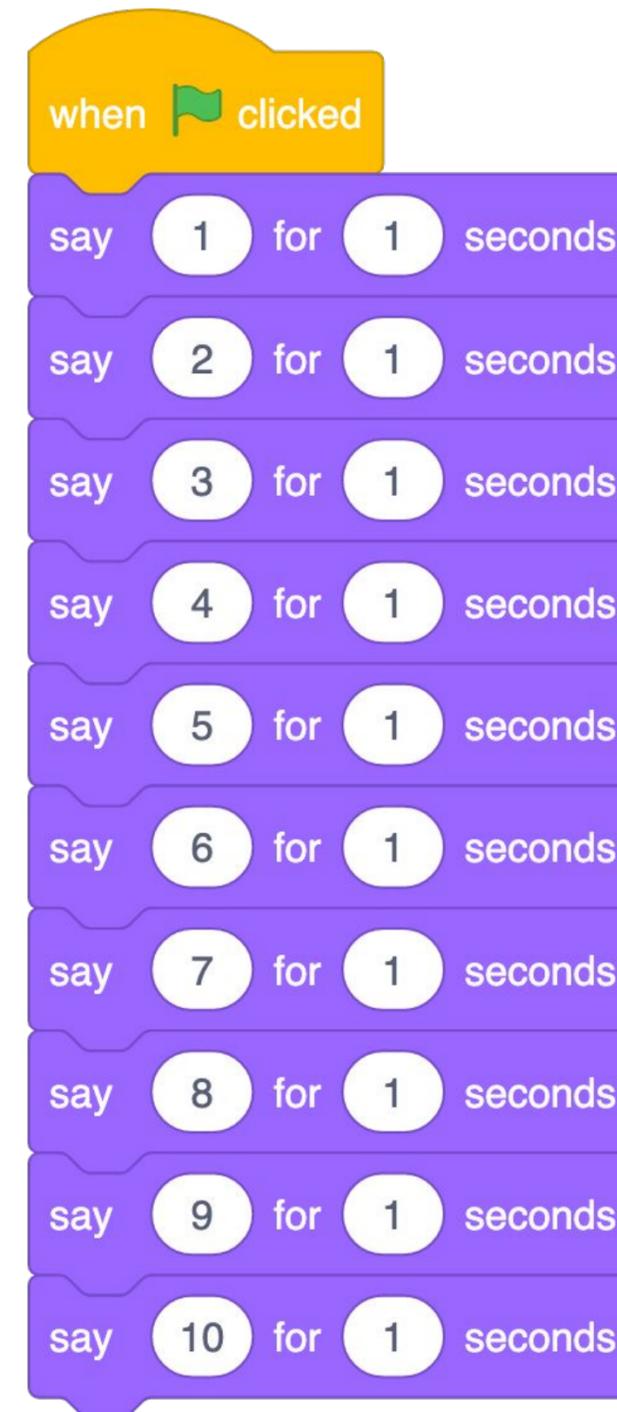


Task 1: The counting cat

Watch the demonstration and when instructed, complete the steps you have just seen to make the counting cat program more elegant.

Click the link below and select “see inside” to get started.

oaknat.uk/comp-CountingCat



Source: Scratch

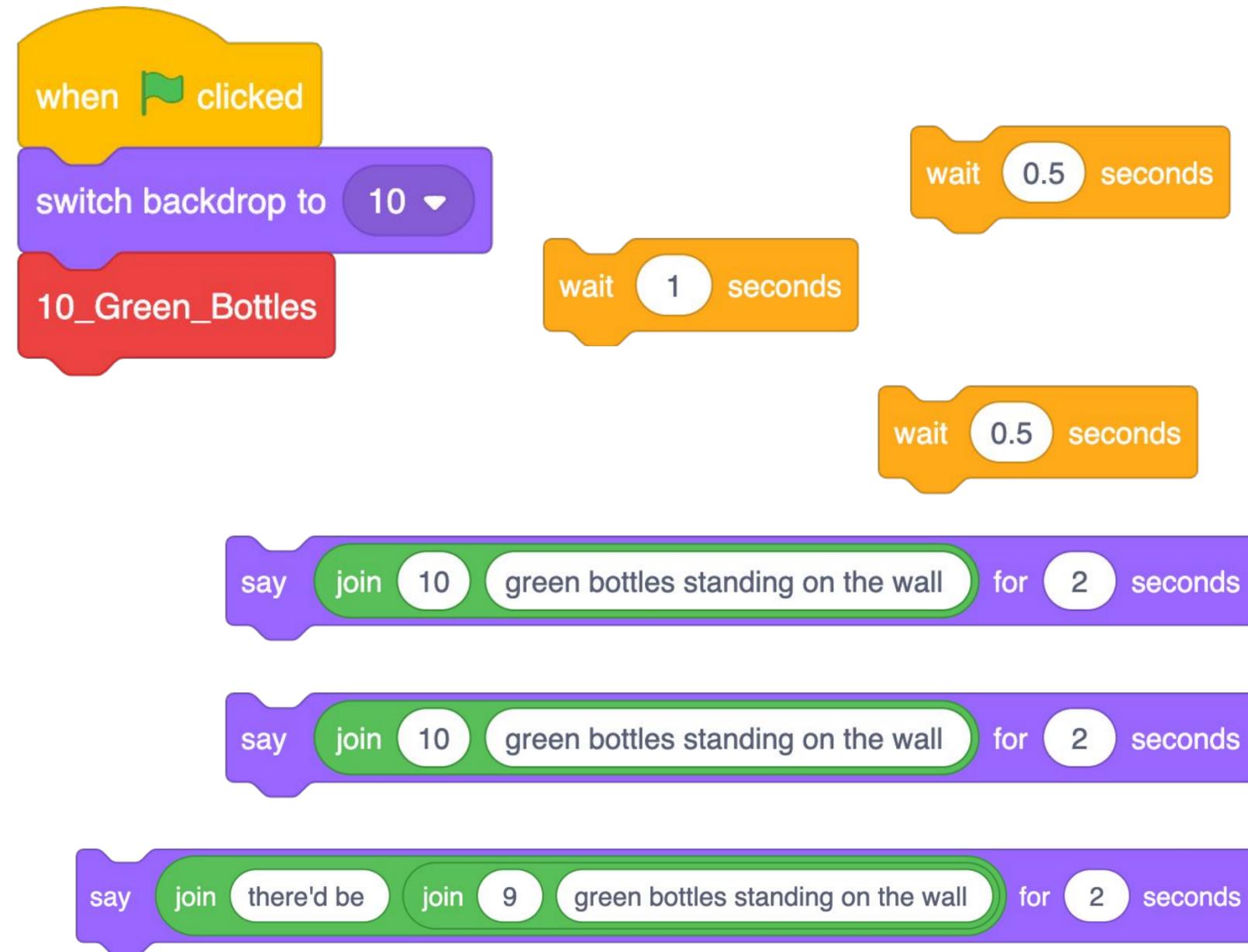


Task 2: Ten green bottles

Your task is to use Scratch code to make a version of the nursery rhyme Ten Green Bottles.

oaknat.uk/comp-10GreenBottles

- Open the program and place the blocks together to play the first verse of the nursery rhyme
- Modify the program so that it uses iteration to play the full nursery rhyme



Source: Scratch



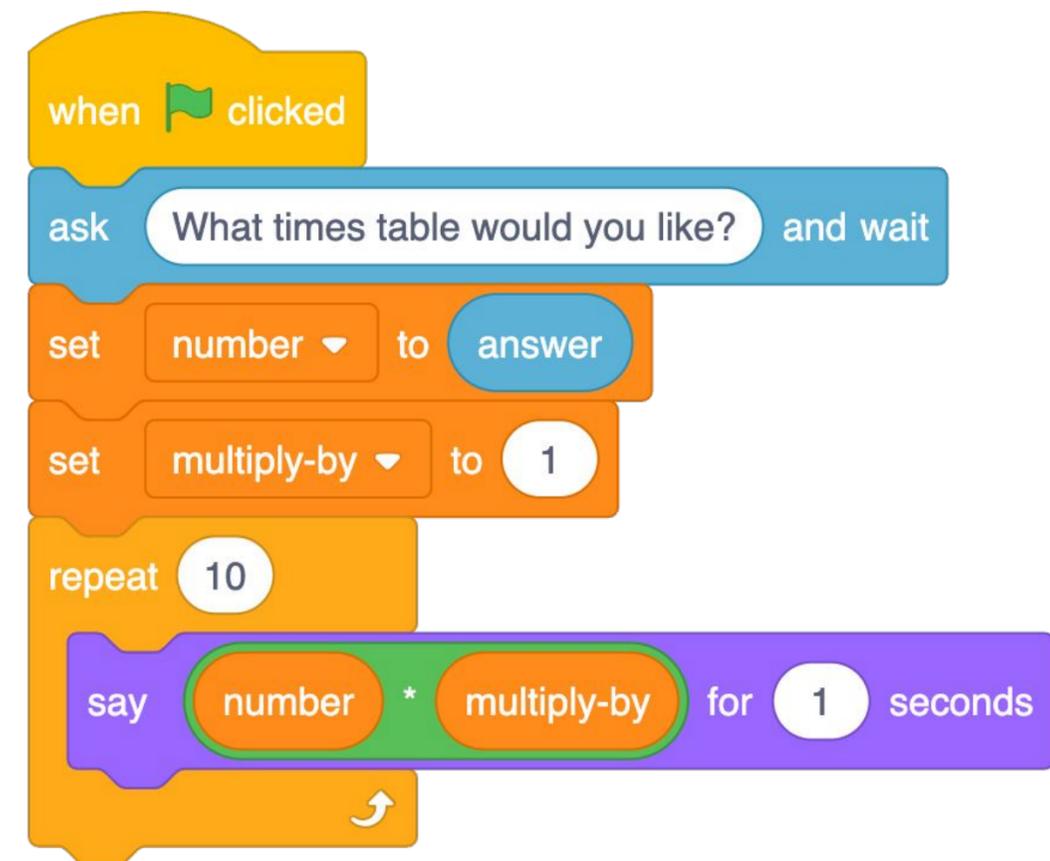
Task 3: Debugging

The program below asks the user which times table they would like to know. The Scratch cat program should then say the times table for them. Unfortunately, this program doesn't output the correct data.

Run the program for yourself.

The program can be found here:

oaknat.uk/comp-TimesTableDebugging



```
when green flag clicked
ask "What times table would you like?" and wait
set number to answer
set multiply-by to 1
repeat 10
say number * multiply-by for 1 seconds
```

Source: Scratch



Task 3 part 1: What's the problem?

Describe what happens when you run the program.

```
when clicked clicked
ask What times table would you like? and wait
set number to answer
set multiply-by to 1
repeat 10
  say number * multiply-by for 1 seconds
```

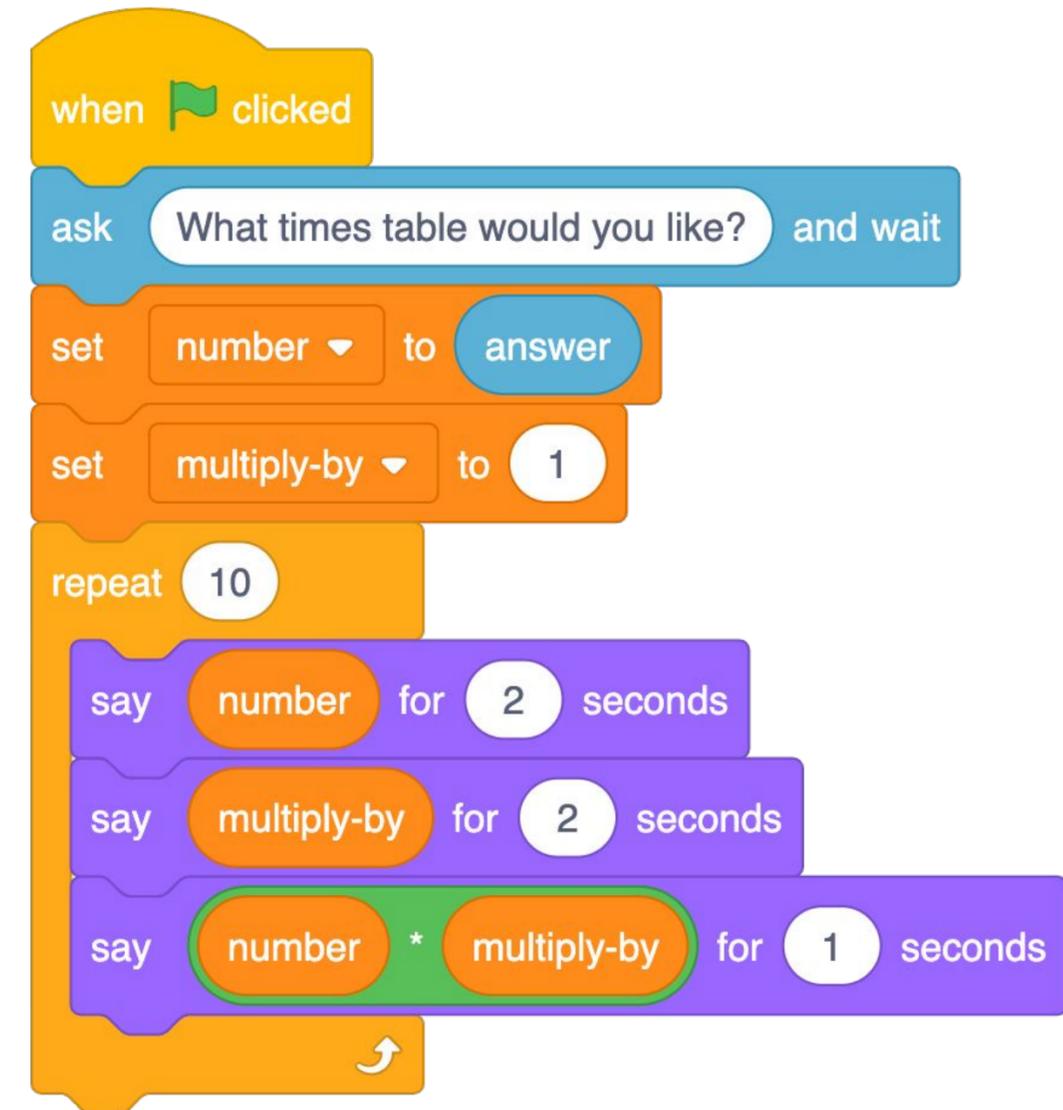
Source: Scratch



Task 3 part 2: Find the problem

One technique you can use to help you debug code is to add lines of code that show the variables that may play a part in the bug.

Add two lines of code that 'say' the value of your variables each time the program iterates. It should now look like the following:



Source: Scratch



Task 3 part 3: Tracing

For this exercise, assume that when asked ‘What times table would you like?’ a number ‘2’ was entered. Note the values of the two variables and the final output just for the first four iterations.

Iteration	Value of: 	Value of 	Output 
1			
2			
3			
4			



Task 3 part 4: Document the problem

What did you discover was the bug/error with the program?

What did you discover was the bug/error with the program?	
Can you recommend a way of fixing this bug?	

Explorer tasks

1. Remove the two print lines from the code
2. Fix the bug so that you have a working program

