Quiz

Start point:
https://scratch.mit.edu/projects/365875591/editor/

This project creates a program that can run a quiz.
It can contain any number of questions and return a score.
The score is calculated by adding up the number of correct answers given.

You can populate your quiz with questions about anything you like.
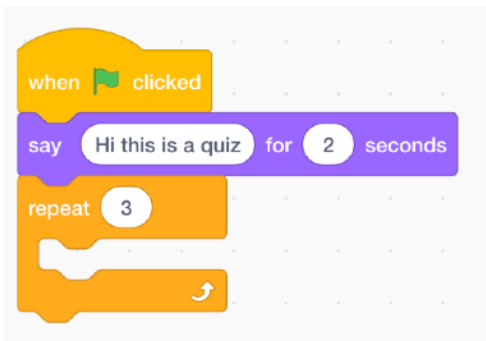
STEP 0

We will create one single sequence of code blocks. Any changes made are changes to this 1 set of blocks rather than starting any new sets of blocks.

So there will be only 1 **block.**

STEP 1

Look at the Parrot Sprite. This is where we will add code blocks to create the program.

Start by adding these three blocks to the Parrot sprite.

Next **add** a light blue '**ask**' block inside the repeat block

*** Put an easy question with a definite answer in the ask field.
We need to ask questions that we can predict the answer to.
"What's your favourite colour?" is not a question that has a correct answer!!
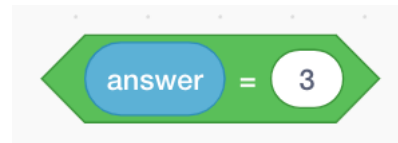
Step 2 - Checking the answer

Add an 'if else' block beneath the ask block.

After that find the green operator block with an = sign in the middle of it.

Add the light blue 'answer' block from the sensing menu to the left field and type the number 3 into the right field.

Put this into the space in the '**if then else**' block

The '**if then else**' block will check if the answer is correct. If the answer is correct then the top level of the block will act. If the answer is not correct the bottom level will act.

Add two purple **'say for seconds'** blocks like this:
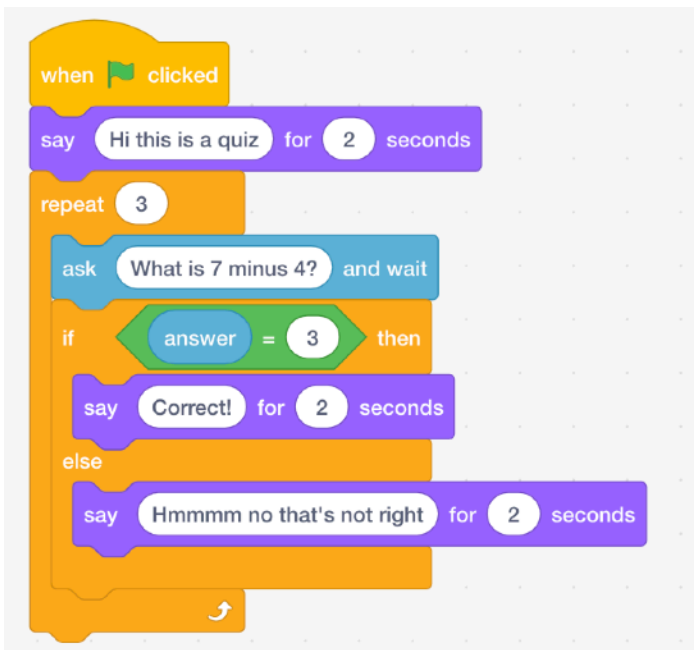
The top one says "Correct"

And the bottom one says:

"Hmmmm no that's not right

Run the program and try giving correct and wrong answers to the question.

STEP 3 - More than one question.

Okay so we can ask a question and check an answer. But it's asking the same question 3 times.

What if we want to ask more than one question

We could copy the steps above. But that's going to mean a very long program that we have to edit a lot.

What if we could change the program so that it can go in a loop?
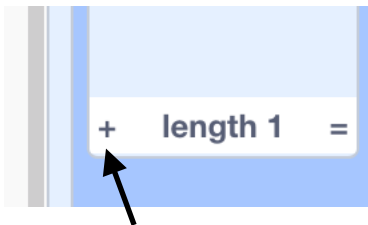
To do this we need to create a list.

Go to Variables in the menu and click the button that says Make a List

Create one list called **questions**, and a second list called **answers**

Put some questions in the question list by clicking the plus symbol at the bottom of the list
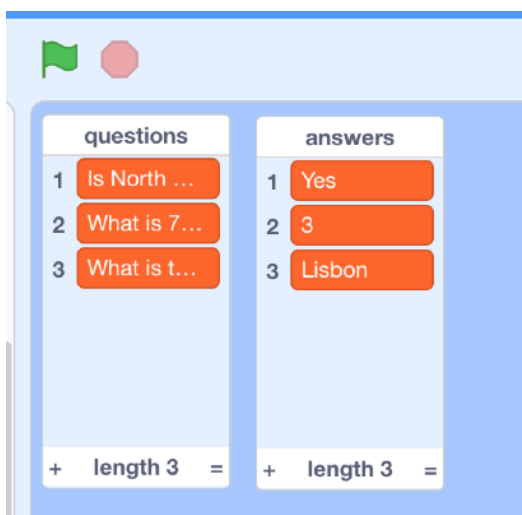

Again use questions with clear answers:

Is North Uist an island?

Do sheep eat grass?

What is the capital city of Portugal

Put the corresponding answer in the answer list. Make sure the numbers match for the questions and their correct answers.

Look down the bottom of the list windows.

It says **length 3**

What does that mean?

Lists are a common feature of programming. Sometimes they are called arrays.
They store things and give whatever is in them an index number. Like a library.
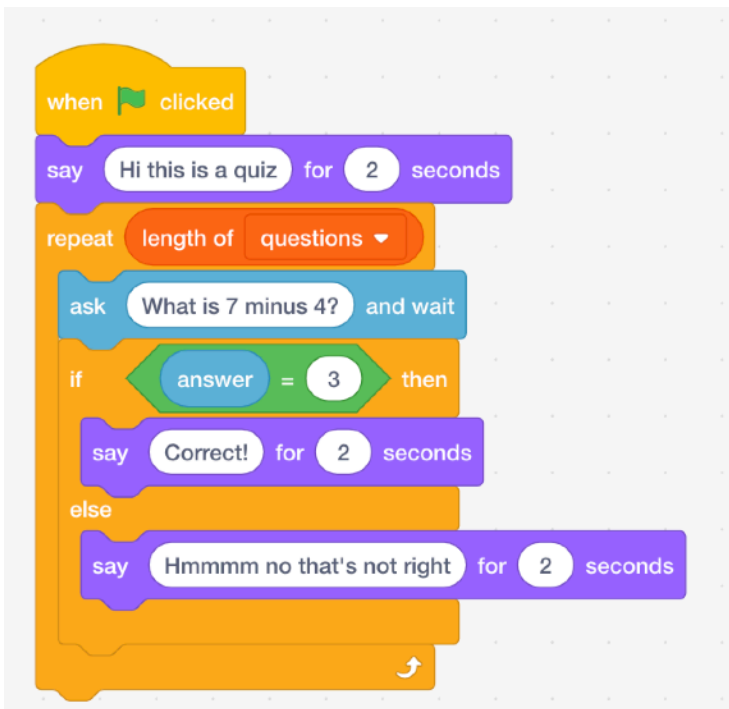They have built in tools that can do things like count the number of things in the list.

Can you think of a place in the program where it would be good to have access to the number of questions in the list?

STEP 4 - Working with Lists

First find this block (you might need to click on the menu part of the block to change it to say questions)
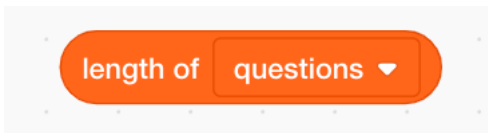
Then add it to your program like this:

Now the repeat loop will run for the number of questions in the list. No matter how many or how few!

Before moving to the next page, where do you think we would put this block?

It goes inside the ask block, because we want to ask the first question of the list.

And then we want it to check the answer given against the correct answer in the list

So we can use this block:

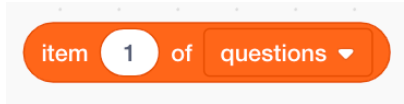

At this point our program should look like this:

Can you see a problem here?

It's going to keep asking question 1 of questions.

So we need some code that will jump through to the next question and answer pair each time a question is asked, so it moves down the list.
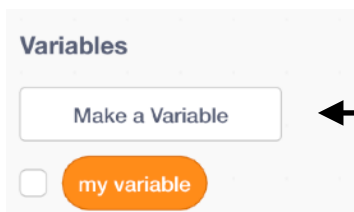
Have a think about how you would do that.

Look at the value that is being used in
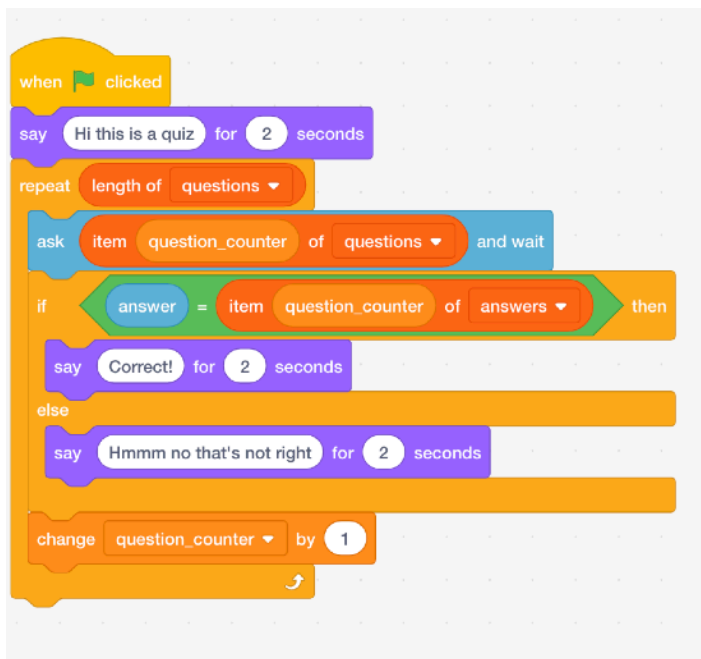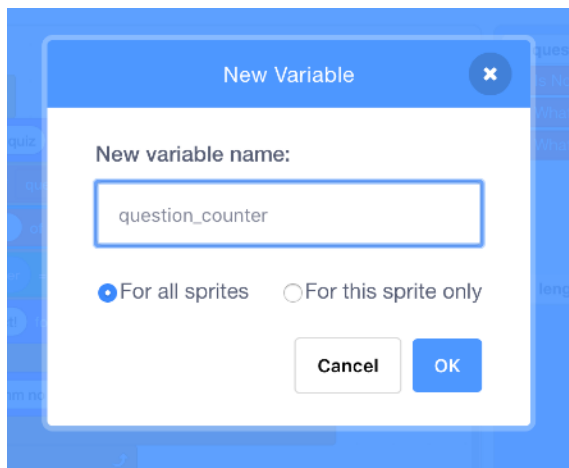
`item ( 1 ) of questions ▾`

We just need that number to change each time. To go up by 1, so that we access item 2 of questions and so on.

One solution:

Create a new variable and call it question_counter

Variables

| Make a Variable |

☐ `my variable`

← Click here

New Variable   ✖

New variable name:

| question_counter |

⦿ For all sprites   ◯ For this sprite only

Cancel   **OK**

```
when 🏳 clicked
say Hi this is a quiz for 2 seconds
repeat length of questions ▾
    ask item question_counter of questions ▾ and wait
    if answer = item question_counter of answers ▾ then
        say Correct! for 2 seconds
    else
        say Hmmm no that's not right for 2 seconds
    change question_counter ▾ by 1
```

Then add a 'change question_counter by 1' block from the variables menu to the bottom of the program just under the 'if else' block but **INSIDE** the loop

You can then use the question_counter variable instead of a number in the **'item _ of questions'** block

IMPORTANT

We need to tell this list what question to start at.

Add this block to the top of your program

set question_counter ▼ to 1
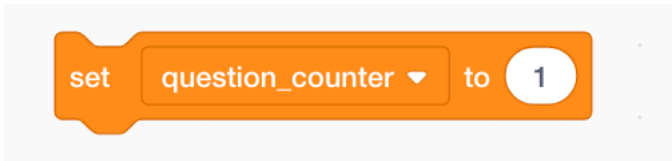
Now you can run the program and try answering the questions. Make sure you get the right responses from the Parrot to correct and wrong answers.

STEP __Score

Create a score variable and add a **'change score by 1'** block inside the correct answer part of the if else block

change score ▼ by 1

if answer = item question_counter of answers ▼

change score ▼ by 1

say Correct! for 2 seconds

else
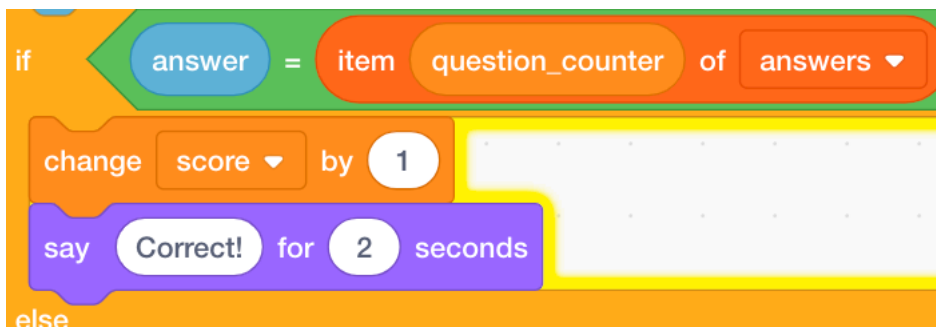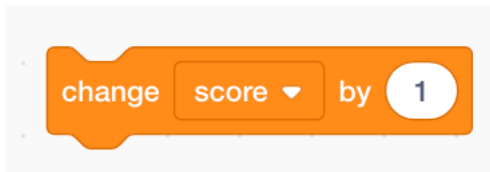
At the bottom of the program you can add these blocks to return a message telling the player what their score is.

say join Your score is score for 2 seconds
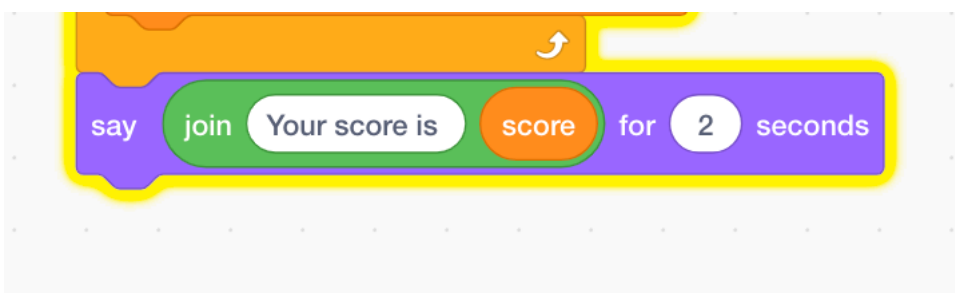
To hide the lists and the variables from the screen, un-tick the blue box next to the variable and list names in the variables menu.
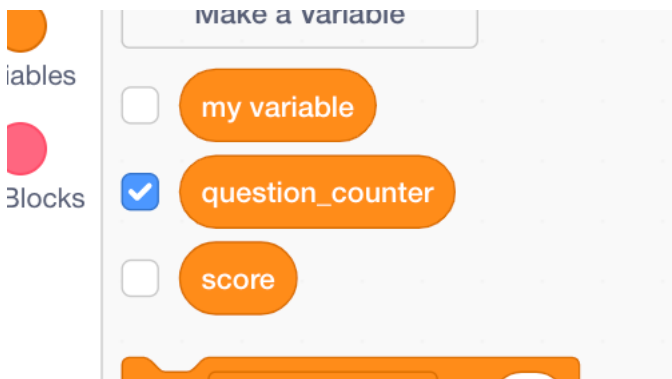
Extentions.

1. Animate the parrot so it flaps its wings or something similar when it tells you your score.

2. At the moment the Parrot only says "Correct!" Or "Hmmmmm no that's not right"
Using the pattern learned above, can you make the parrot respond with a variety of different positive and negative messages? You will need to make 2 new lists (or 1 list if you're clever!)

3. Change the Parrot sprite into a drawing of an animal or a bird from the island where you live.

4. Figure out how to give the person a second chance at answering each question before it moves to the next one.

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