

Automated Maths Quiz

A Scratch quiz creation program
designed for KS2 pupils

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Maths Quiz Elements

Create a program which asks the user random multiplication questions. If the user types the right answer they will be congratulated and their score will be increased by 1. If the user types the wrong answer they will be told the correct answer. The score will be reported after each question.

Programming Elements

- Simple **variable** to hold the score
- **Increasing the variable** if the user gets an answer right
- **Printing the variable** when reporting the score to the user
- **Randomly selecting** two numbers and placing them within two variables called num1 & num2
- **Multiplying** the num1 & num2 and putting the solution into a variable called total
- **Comparing** the users answer to the variable total
- **Selection** of pathway (if or else) depending on the answer to the question
- Simple typed **input** by the user of the quiz
- **Repeating** (iterating) the question 10 times

Choose a single sprite to ask the questions

You can keep the cat.

If you are keeping the cat move to the next slide.

If you want another character right mouse click on sprite1 and left click on delete.

Choose a new sprite from file.



I recommend a sprite that has a mouth to ask questions, people or animals would be ideal.

Starting the quiz, creating a variable to hold the score in and setting the score to zero to start with

Start the quiz by inserting a green flag start block in sprite scripts



Make a variable by selecting variables in blocks and clicking on make a variable. Name it score.



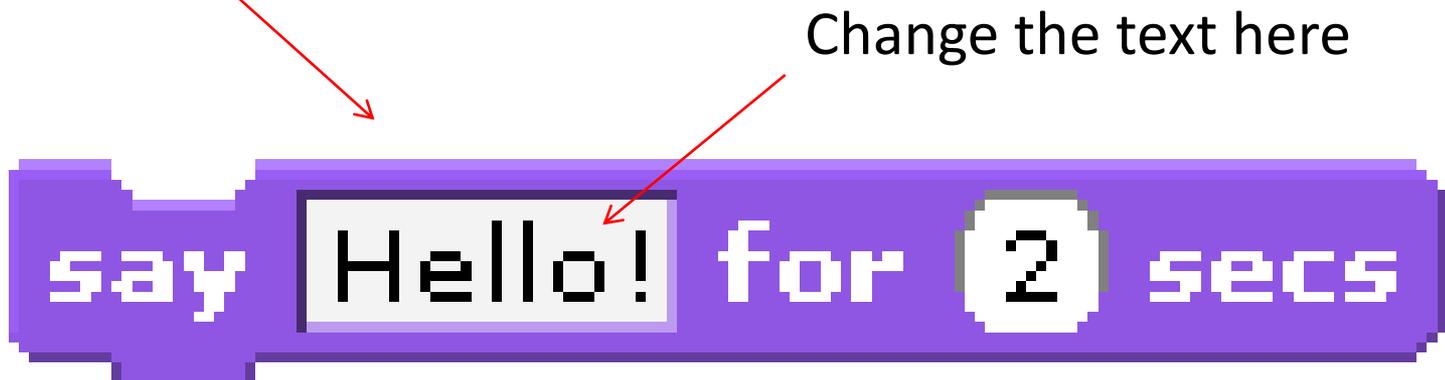
Set variable score to zero by inserting this block underneath the start block



Introducing the quiz to the user using say commands

From the looks blocks use one or two say commands to welcome users to the quiz

In this program we are using just one block of code. All instructions attach underneath the last instruction created



Make 3 new variables by selecting variables in blocks and clicking on make a variable.



Name them **num1**, **num2** & **total**

Create 3 new variables

num1 will hold our first number
num2 will hold our second number
total will hold the answer after num1 and num2 are multiplied

pick random number between first and last number



New Blocks

multiply two numbers using *



set variable to



Choose random numbers and put them inside variables **num1** and **num2**. Multiply **num1** and **num2** and put the result into **total** variable.



Generate a random number between 2 and 5 and put in into variable **num1**

Generate a random number between 1 and 12 and put in into variable **num2**

Multiply **num1** & **num2** and put the result into total variable



To test your work so far tick all of the variables so they appear on the screen. Run your code. Does **num1** multiplied by **num2** equal **total**?

```
join hello world
```

joins things
need 3 of these

Your code so far should look similar to this

```
when clicked  
set score to 0  
say Welcome to our tables test for 2 secs  
say How many sums out of 10 can you get right? for 2 secs  
set num1 to pick random 2 to 5  
set num2 to pick random 1 to 12  
set total to num1 * num2
```

```
ask join join num1 × num2 and wait  
if answer = total  
change score by 1  
say Correct for 2 secs  
else  
say join Wrong, the answer was total for 2 secs
```

Ask the user to multiply number inside **num1** by number inside **num2**

If the users answer is the same as the answer inside **total** variable increase **score** variable by 1 and say correct

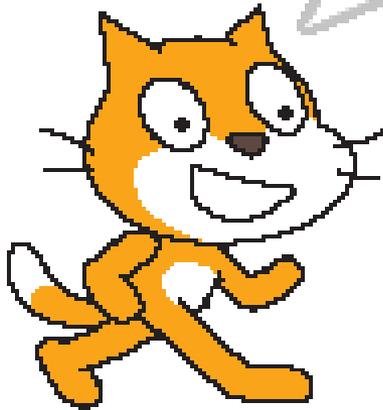
Else the users answer is not the same as the answer inside variable **total** say Wrong, the answer was number inside **total** variable

Ask the user the question and check if their answer is the same as the one stored inside the **total** variable

say join Your score so far is join score out of 10 for 2 secs

The say block joins text saying *Your score so far is* with the *number* inside variable score and then adds the text *out of 10* at the end.

Your score so far
is 1 out of 10



Let the user know what
their score is

Repeat
the
question
10 times

```
when clicked
  set score to 0
  say Welcome to our tables test. for 2 secs
  say How many sums out of 10 can you get right? for 2 secs
  set num1 to pick random 2 to 5
  set num2 to pick random 1 to 12
  set total to num1 * num2
  ask join join num1 x num2 and wait
  if answer = total
    change score by 1
    say Correct for 2 secs
  else
    say join Wrong, the answer was total for 2 secs
  say join Your score so far is join score out of 10 for 10 secs
```

The image shows a Scratch script for a multiplication quiz. It starts with a 'when clicked' event block. The script then sets a 'score' variable to 0. It displays two welcome messages: 'Welcome to our tables test.' for 2 seconds and 'How many sums out of 10 can you get right?' for 2 seconds. Next, it generates two random numbers: 'num1' (between 2 and 5) and 'num2' (between 1 and 12). It calculates the 'total' as the product of 'num1' and 'num2'. The user is then asked the question 'num1 x num2' and must wait for an answer. An 'if' statement checks if the 'answer' equals the 'total'. If correct, the 'score' is increased by 1, and a 'Correct' message is shown for 2 seconds. If incorrect, a message showing the correct answer is shown for 2 seconds. Finally, a message displays the current 'score' out of 10 for 10 seconds. A 'repeat 10' loop block is shown to the left of the main script, indicating that the entire sequence of blocks should be repeated 10 times.

Place most of your code inside a repeat 10 loop. If you get it right the quiz will generate 10 random questions and record the score as the user plays.

Finishing touches

- You may want to add a more interesting background by importing a background on stage.
- You may want to add a sound when a question is correct and another when it is wrong.
- You will want to test your program by getting other people to play test it.

Final Question

Although this is a good quiz these is one thing that can go wrong with it. What do you think that is?