



# Rock, paper, scissors

Scratch – Conditionals

Code Playground



# An introduction to conditionals

Today, you're going to learn how to make decisions in Scratch using conditionals.

We'll use these blocks to help our game choose between Rock, Paper, and Scissors.


Ready to get started?



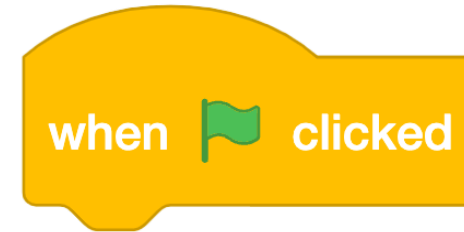
# Step 1 – Get started

Go to [scratch.mit.edu](https://scratch.mit.edu) and click **'Create'** to start a new project.

We're going to set up our game to pick rock, paper, or scissors at random.

1. Go to the **'Events'** tab and drag **'When  clicked'** into your coding area.

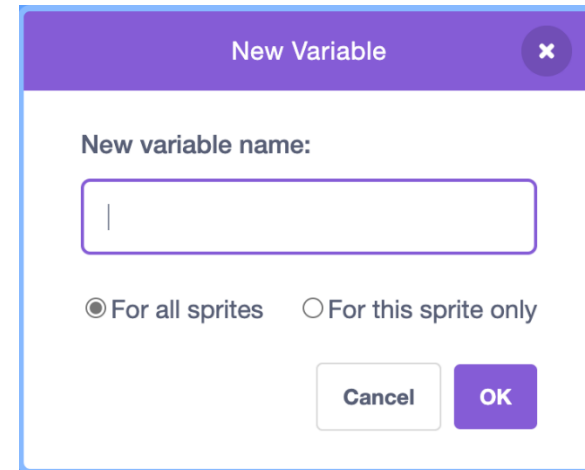
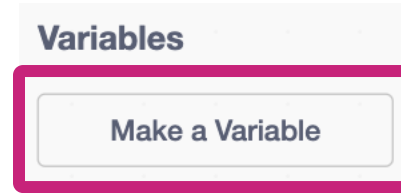
This block starts the game whenever you click the green flag.




# Step 2 – Create a variable

1. Go to the **'Variables'** tab on the left and click **'Make a variable'**
2. Name it **'hand'** and click OK.

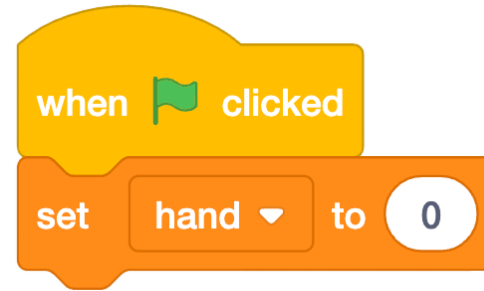
This variable will store the computer's choice for rock, paper, or scissors.



## Step 2 – Set a random choice

1. Go to the **'Variables'** tab and drag **'set [hand] to [0]'** under **'When  clicked'**
2. Change the **'0'** to **'pick random 1 to 10'** by dragging this block from the **'Operators'** tab
3. Change the number **'10'** in the block you just added to the number **'3'** to create your options.

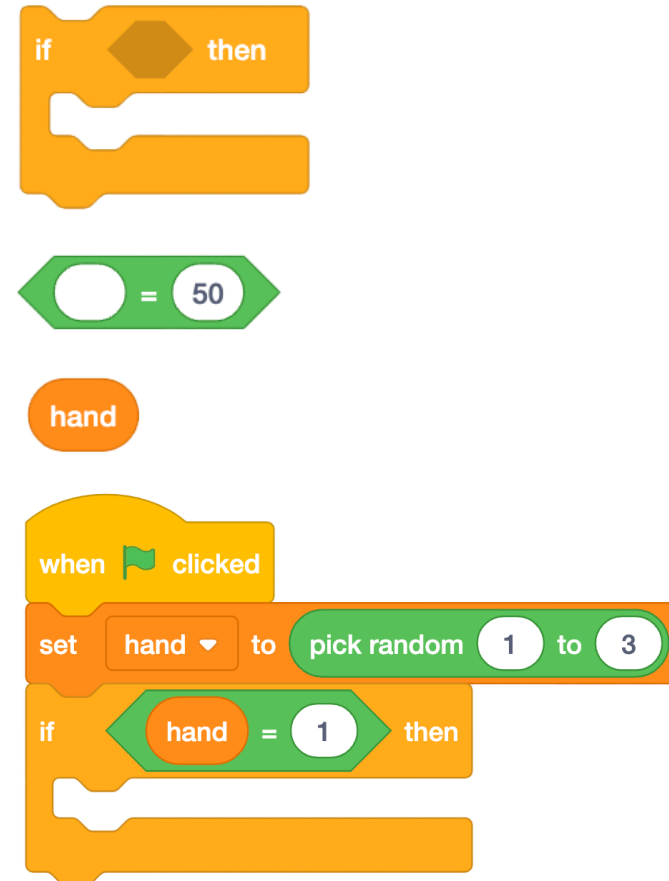
This gives the computer a random choice, 1 for rock, 2 for paper, and 3 for scissors.



# Step 3 – Add conditional

Use conditionals to check the random number and display Rock, Paper, or Scissors.

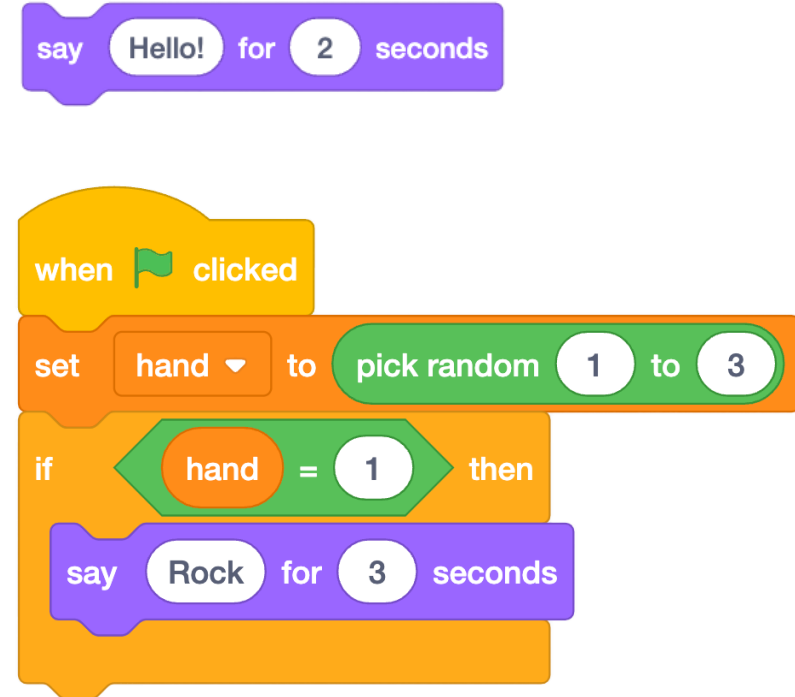
1. Go to the **'Control'** tab and drag an **'if, then'** block under your random choice code
2. In the diamond shape you need to add the variable check. Drag in the **'[] = [50]'** block from the **'Operators'** tab
3. Drag the hand variable from the **'Variable'** tab into the first circle
4. Now change the number **'50'** to **'1'**.



## Step 3 – Add conditional (cont)


5. Now drag **'say [Hello!] for 2 seconds'** from the **'Looks'** tab into the space under where you've added your variable
6. Change the word **'Hello!'** to **'Rock'**
7. Change the number of seconds to display **'Rock'** from **'2'** to **'3'**.

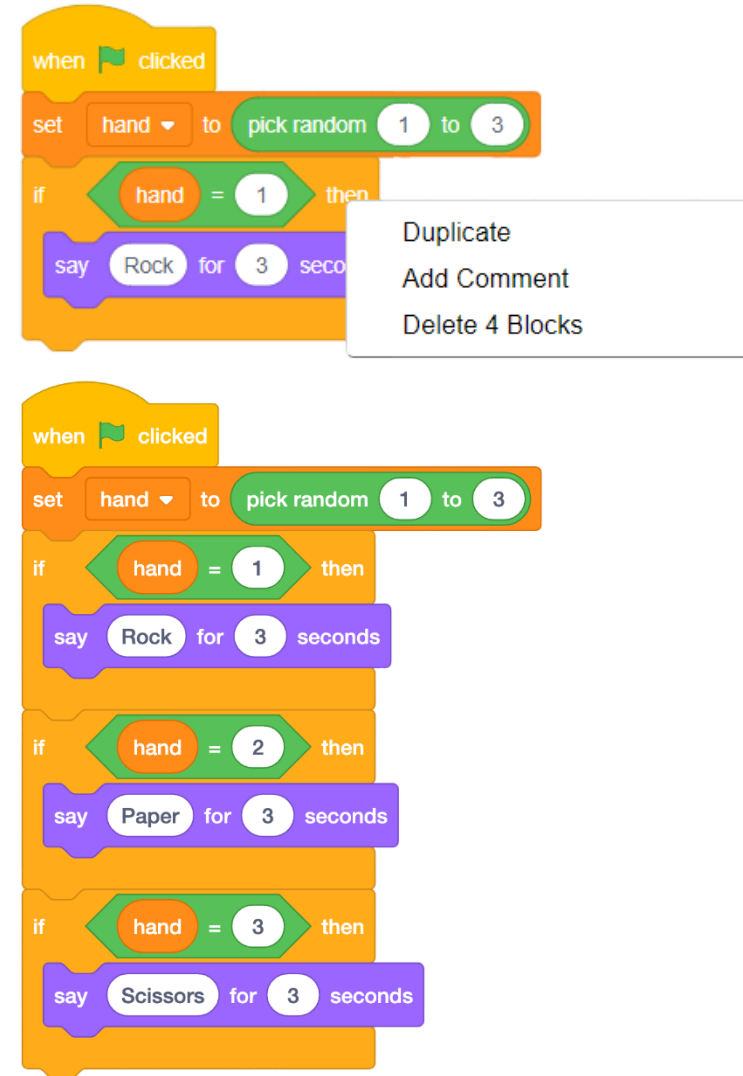
This will now show the word 'Rock' on screen if the result is 1 when the program picks a random number (1 – 3).



# Step 4 – Add the other results

1. Duplicate the 'if, then' block with everything inside twice. Making sure to connect both under the first set for 'Rock'
2. Set the second condition to 'hand = 2' and make it say 'Paper'
3. Set the third condition to 'hand = 3' and make it say 'Scissors'.

Press the  to see if the game randomly says Rock, Paper, or Scissors. Why not have a game with the person sat next to you to see who wins?

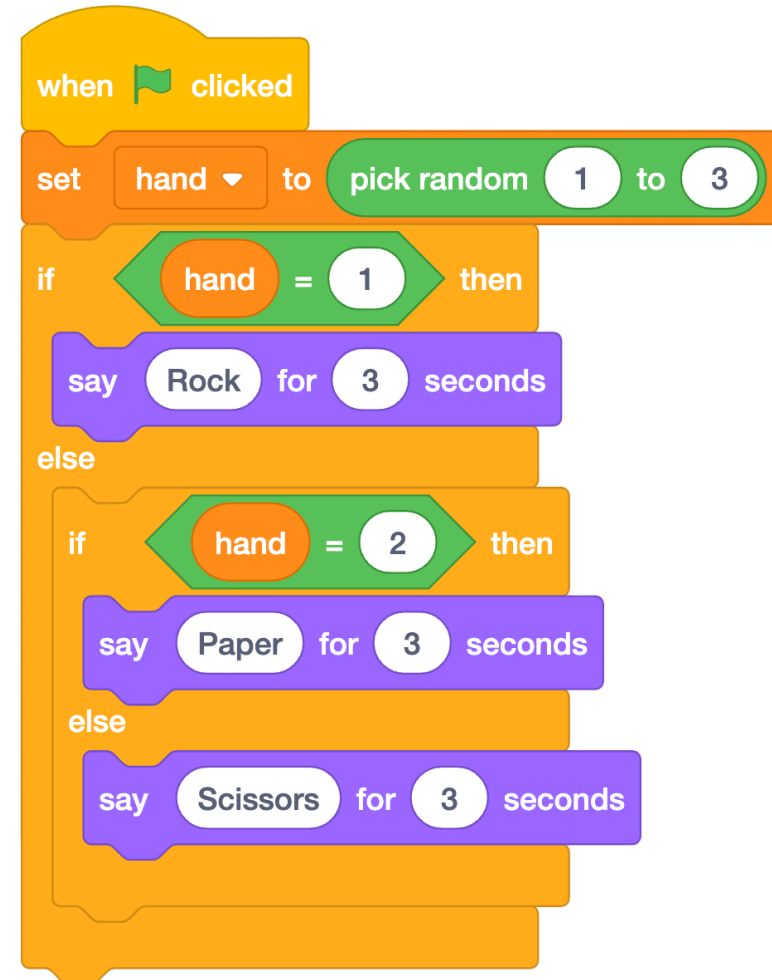


```
when clicked
  set hand to pick random 1 to 3
  if hand = 1 then
    say Rock for 3 seconds
  if hand = 2 then
    say Paper for 3 seconds
  if hand = 3 then
    say Scissors for 3 seconds
```

# Challenge – Make the code block simpler

Now you have used the 'if, then' block to stack your blocks. Why not try to reduce the number of blocks to use.

Could you use 'if, then, else' blocks to reduce the number of blocks required?



```
when green flag clicked
  set hand to pick random 1 to 3
  if hand = 1 then
    say Rock for 3 seconds
  else
    if hand = 2 then
      say Paper for 3 seconds
    else
      say Scissors for 3 seconds
```

The image shows a Scratch script starting with a 'when green flag clicked' block. This is followed by a 'set hand to pick random 1 to 3' block. Below this, there are three nested conditional blocks. The first is an 'if hand = 1 then' block containing a 'say Rock for 3 seconds' block. This is followed by an 'else' block containing an 'if hand = 2 then' block with a 'say Paper for 3 seconds' block, and another 'else' block with a 'say Scissors for 3 seconds' block.

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Notes