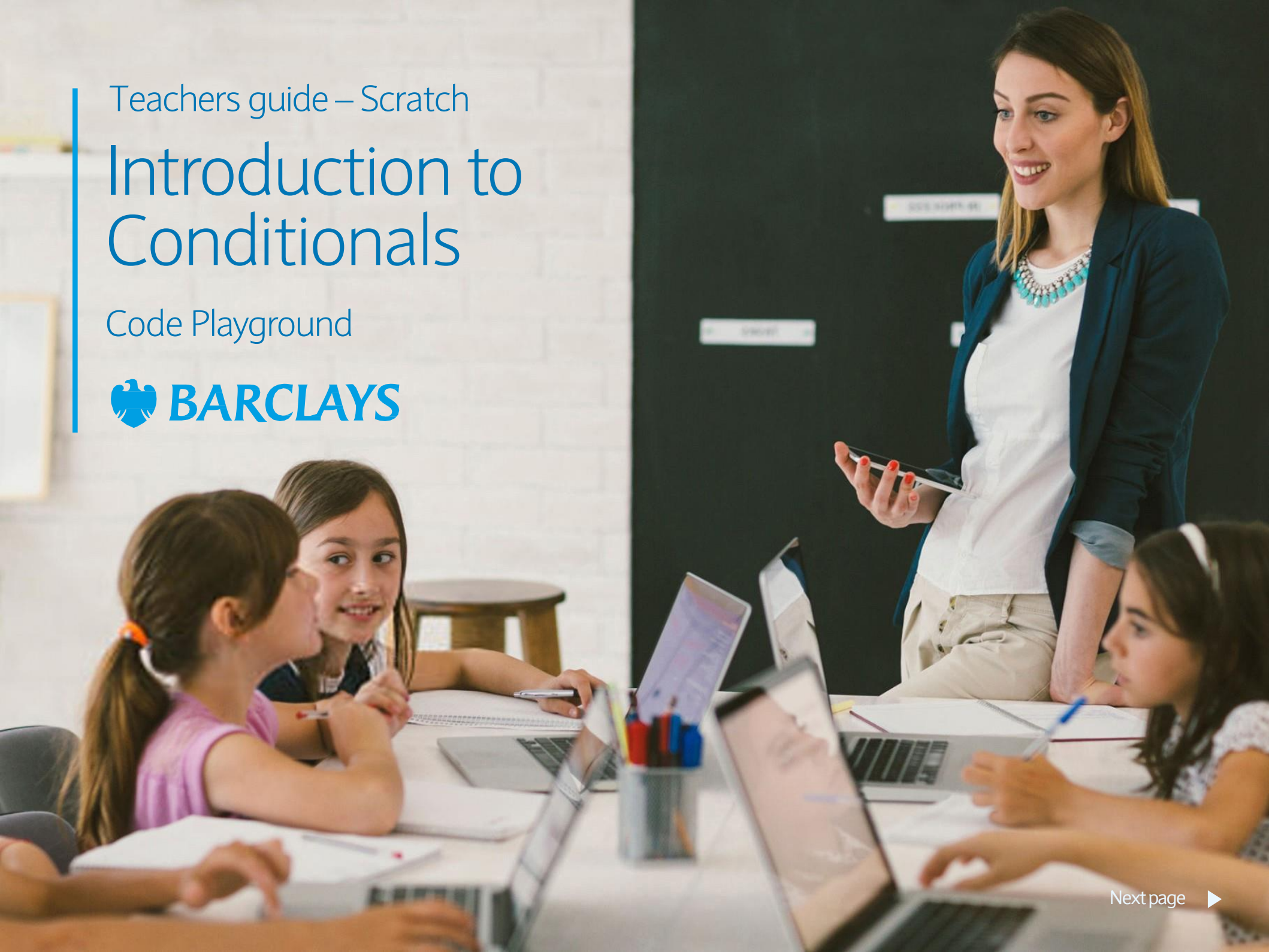


Teachers guide – Scratch

Introduction to Conditionals

Code Playground



Introduction to Conditionals

Scratch project

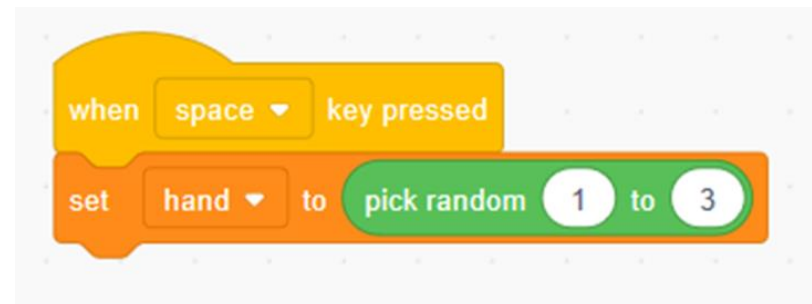
The conditional blocks can be found in the 'Control' section. There are two main blocks which can be used together or include as many or as few variables as are needed. With this in mind, either block can be used.

In the diamond shape, the pupils will need to add the variable that will determine which of the three outcomes the Scratch will 'choose'. The comparison block required for this is also under 'loops'.

The pupils should choose an input. We've chosen 'when space key pressed' but any could be used.

Next the variable should be set up to randomly pick either rock, paper or scissors. We've named our variable 'hand' to represent the hand gestures that are used in the classic game.

This 'choice' is stored in the Scratch memory until we tell it what to display. This is where the conditionals come in

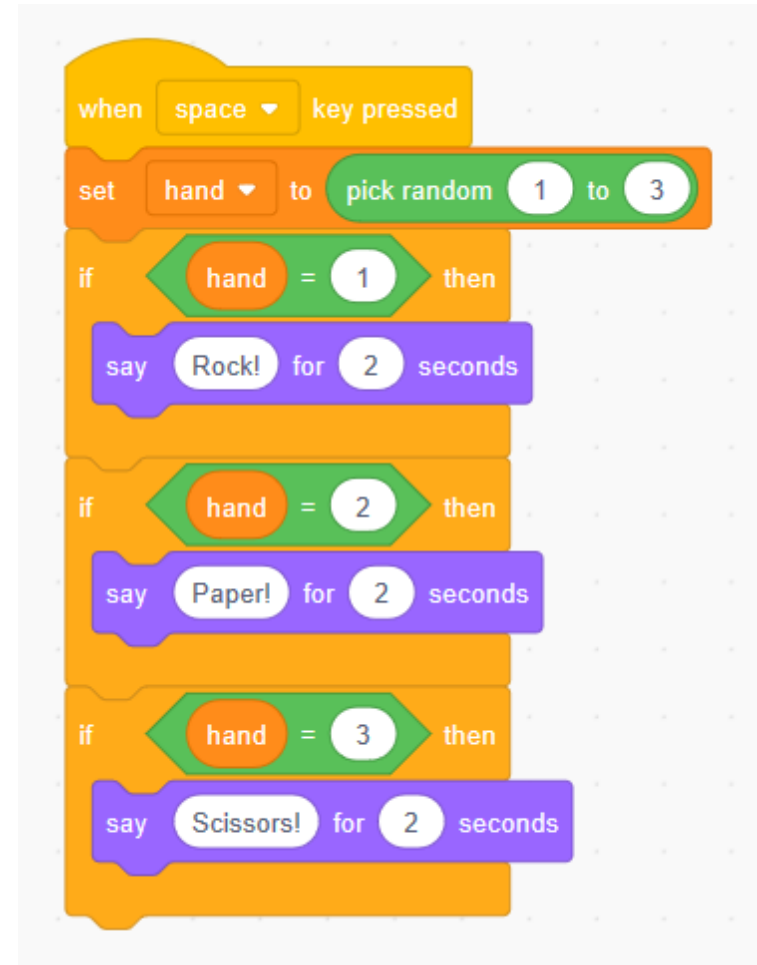


Introduction to Conditionals

Scratch project

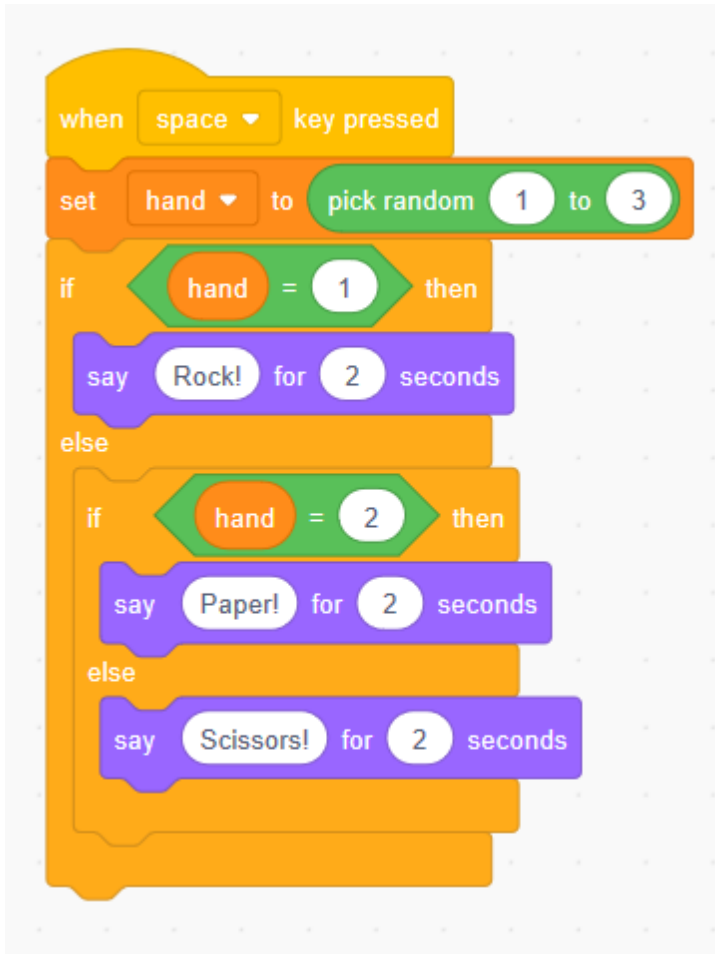
It is very likely that your pupils will come up with the above, using a separate conditional statement for each possible outcome (rock, paper or scissors). While this is not incorrect, the code on the next page is more concise and less repetitive. Using two 'if, else' statements instead of three 'if' statements will work.

Note that the code on the next page has one block nested inside the other.



Introduction to Conditionals

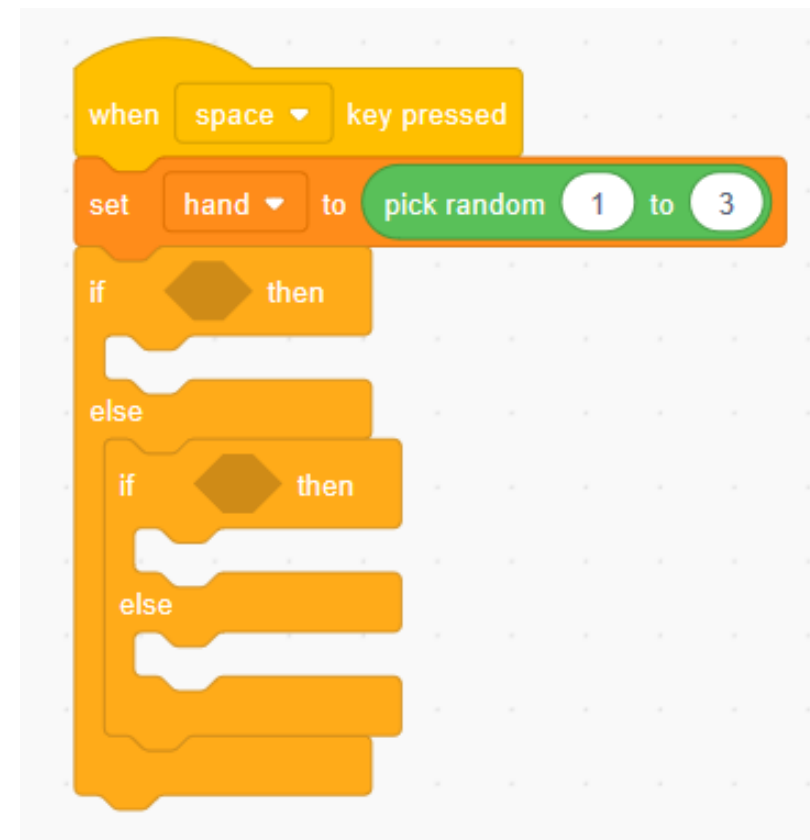
Scratch project



```
when space key pressed
  set hand to pick random 1 to 3
  if hand = 1 then
    say Rock! for 2 seconds
  else
    if hand = 2 then
      say Paper! for 2 seconds
    else
      say Scissors! for 2 seconds
```

The image shows a Scratch script for a rock-paper-scissors game. It starts with a 'when space key pressed' event block. This is followed by a 'set hand to pick random 1 to 3' block. Then, there is a large 'if' block with a diamond-shaped condition 'hand = 1'. Inside this 'if' block, there is a 'say Rock! for 2 seconds' block. Below the 'if' block is an 'else' block. Inside the 'else' block, there is another 'if' block with a diamond-shaped condition 'hand = 2'. Inside this second 'if' block, there is a 'say Paper! for 2 seconds' block. Below this second 'if' block is another 'else' block, which contains a 'say Scissors! for 2 seconds' block.

For pupils with lower ability, use the skeleton code below and ask the pupils to fill in the gaps



```
when space key pressed
  set hand to pick random 1 to 3
  if then
  else
    if then
    else
```

The image shows a skeleton Scratch script for a rock-paper-scissors game. It starts with a 'when space key pressed' event block. This is followed by a 'set hand to pick random 1 to 3' block. Then, there is a large 'if' block with a diamond-shaped condition that is empty. Below this 'if' block is an 'else' block. Inside the 'else' block, there is another 'if' block with a diamond-shaped condition that is empty. Below this second 'if' block is another 'else' block. The rest of the script is empty.

Introduction to Conditionals

Scratch project

```
when space key pressed
  set hand to pick random 1 to 3
  if hand = 1 then
    say Rock! for 2 seconds
  else
    if hand = 2 then
      say Paper! for 2 seconds
    else
      say Scissors! for 2 seconds
```

The image shows a Scratch script for a rock-paper-scissors game. It starts with a 'when space key pressed' event block. This is followed by a 'set hand to pick random 1 to 3' block. Then, there is a large 'if' block with three nested 'if-then-else' structures. The first 'if' block checks if 'hand = 1' and says 'Rock!' for 2 seconds. The 'else' block contains another 'if' block that checks if 'hand = 2' and says 'Paper!' for 2 seconds. The final 'else' block says 'Scissors!' for 2 seconds.

For pupils with lower ability, use the skeleton code below and ask the pupils to fill in the gaps

```
when space key pressed
  set hand to pick random 1 to 3
  if then
  else
    if then
    else
```

The image shows a skeleton Scratch script for a rock-paper-scissors game. It starts with a 'when space key pressed' event block. This is followed by a 'set hand to pick random 1 to 3' block. Then, there is a large 'if' block with three nested 'if-then-else' structures. The first 'if' block has a diamond-shaped condition block followed by a 'then' block. The 'else' block contains another 'if' block with a diamond-shaped condition block followed by a 'then' block. The final 'else' block is empty.

Notes

Code Playground

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