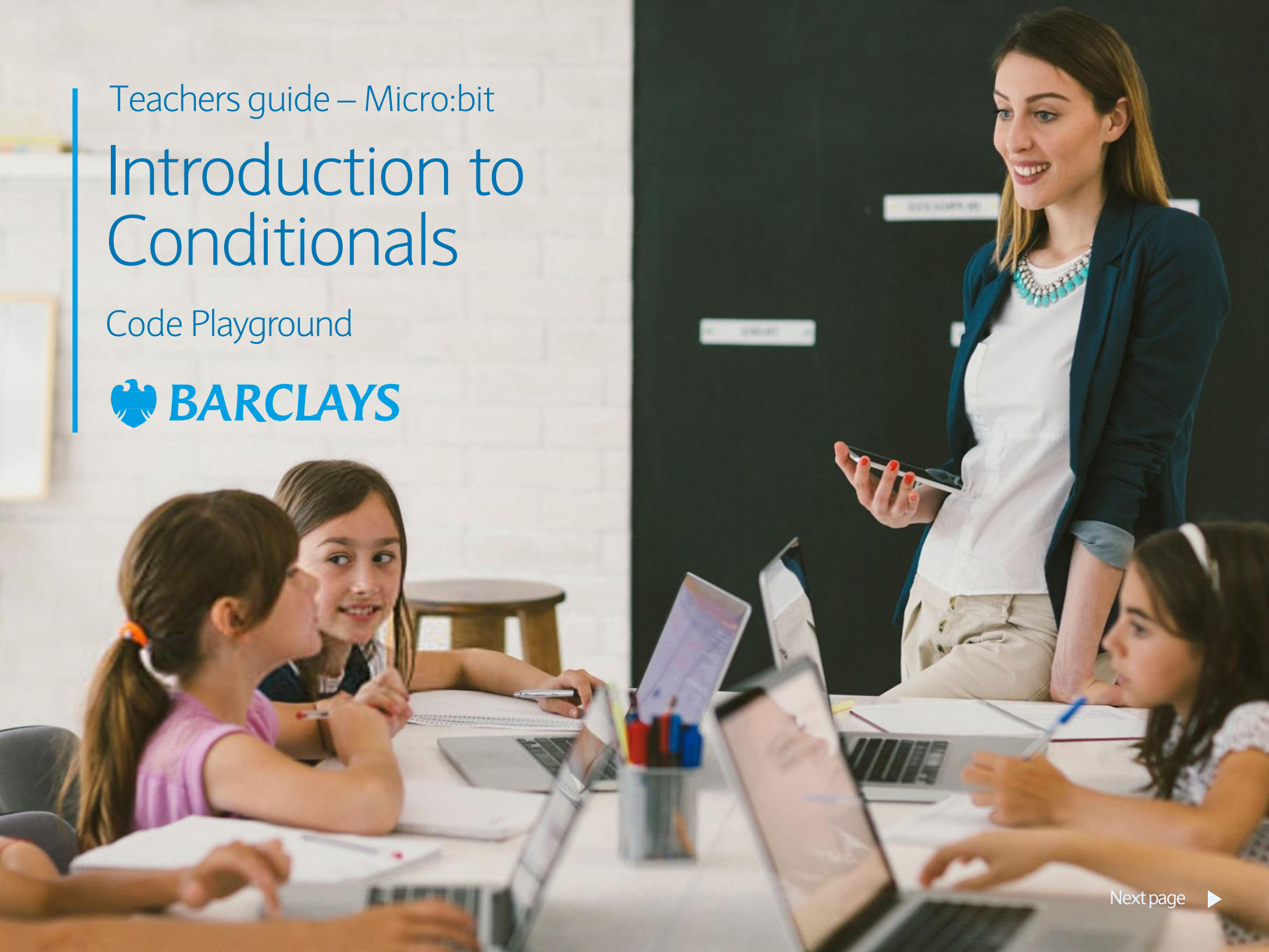


Teachers guide – Micro:bit

Introduction to Conditionals

Code Playground

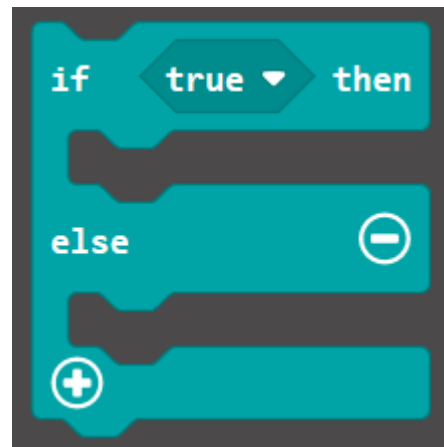
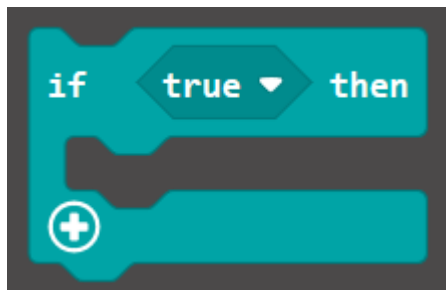


Introduction to Conditionals

Micro:bit project

The conditional blocks can be found in the 'Logic' section. There are two main blocks which can be expanded or simplified using the '+' or '-' symbols on the blocks to include as many or as few variables as are needed. With this in mind, either block can be used.

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



The pupils should choose an input. We've chosen shake 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 micro:bit memory until we tell it what to display. This is where the conditionals come in

Introduction to Conditionals

Micro:bit 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. Pressing the + symbol on the 'if' block adds 'else' components to the statement

```
on shake ▼
  set Hand ▼ to pick random 1 to 3
  if Hand ▼ = 1 then
    show icon [Rock]
  +
  if Hand ▼ = 2 then
    show icon [Paper]
  +
  if Hand ▼ = 3 then
    show icon [Scissors]
  +
```

Using Radio

Micro:bit project

```
on shake  
  set Hand to pick random 1 to 3  
  if Hand = 1 then  
    show icon [Hand 1 icon]  
  else if Hand = 2 then  
    show icon [Hand 2 icon]  
  else  
    show icon [Hand 3 icon]
```

The image shows a Scratch code block for a radio-based hand game. The code is enclosed in a purple 'on shake' block. It starts with a 'set Hand to pick random 1 to 3' block. This is followed by three conditional blocks: an 'if Hand = 1 then' block with a 'show icon' block containing a hand icon with one dot; an 'else if Hand = 2 then' block with a 'show icon' block containing a hand icon with two dots; and an 'else' block with a 'show icon' block containing a hand icon with three dots. The code is highlighted with a yellow border.

```
on shake  
  set Hand to pick random 1 to 3  
  if true then  
  else if then  
  else  
  +
```

The image shows a skeleton Scratch code block for a radio-based hand game. The code is enclosed in a purple 'on shake' block. It starts with a 'set Hand to pick random 1 to 3' block. This is followed by three conditional blocks: an 'if true then' block, an 'else if then' block, and an 'else' block. Each of these three blocks has a gap (indicated by a minus sign) for the user to fill in. The code is highlighted with a yellow border.

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

Notes

Code Playground