



# micro:bit

Code in, keep fit, love nature



## Environment & Nature

### 1. Species counter

Take your species counter to a garden or nearest open space to record frequencies of different creatures that you can find.

1

**Storing a bird count:** Create a variable called **birds**, set it to 0 and show it on start

2

**When a bird is spotted:** When button A is pressed, increase the value stored in **birds** by 1 and show the value.

3

**Resetting your count:** you can do this by setting **birds** to 0 when your micro:bit is shaken.

4

**Flash & test:** Download the code into your micro:bit and go bird watching.

5

**Changing species:** this code can be changed to count any animal, plant or object.

**Idea:** You could use this to keep a count of littering in your area.



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# Starter code:

```

on start
  set birds to 0
  show number birds

on button A pressed
  change birds by 1
  show number birds

on shake
  set birds to 0
  show number birds
  
```



We are using birds as an example, but you could count anything!

## Challenge:

Is it a bird? A plane? Superman? – If you counted a bird and then realised it was actually something else, you should be able to remove that count. Do this by coding your microbit to decrease the value stored in birds by 1 ( i.e. change by -1) when button B is pressed. Don't forget to refresh your display to show the new value stored in birds!

## Add extra features:

### Environment:

Keep a journal of your bird counter, also keeping track of dates, weather and time of the day. You may want to use a spreadsheet for this or just a hand-written table will do. Track the numbers across multiple days (the longer – the better). Are you able to spot which conditions were best for bird watching?

### Tinkering:

Buttons need labels, otherwise it may be tricky to remember what they are meant to do. You may want to create a case for your micro:bit to allow labels to be added next to each button.

### Play [challenge]:

Are there more small dogs than large dogs in your area? Go for a walk and every time you see a small dog, you press A button, a large dog – B button. Get the respective dog counts at the end and display the winner e.g. "large dogs"..

## Level up your skills:

Count different birds by using multiple variables. Create a reset function which can be used multiple times in your code.

```

on start
  call resetCounter

on shake
  call resetCounter

function resetCounter
  set pigeon to 0
  set magpie to 0
  set crow to 0
  show icon

on button A pressed
  change pigeon by 1
  show number pigeon

on button B pressed
  change magpie by 1
  show number magpie

on button A+B pressed
  change crow by 1
  show number crow
  
```



We create a custom function called **resetCounter** so we can reuse the code.



You could potentially keep track of more birds than once by using gestures in addition to buttons.

Share your success! Go to:  
[www.parkhousehub.org/summerschool](http://www.parkhousehub.org/summerschool)

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