



## Camera

The camera allows you to program Ohbot to detect human faces, to sense movements and colours.

The camera can be fixed to Ohbot's base so that the camera image is static. Or it can be mounted on Ohbot's forehead so that the image changes as Ohbot moves.

The camera connects directly to a computer via a USB connection. The image from the camera is accessed within the Ohbot app via a set of special blocks found on the Sensing menu.

To fix camera to Ohbot's base:



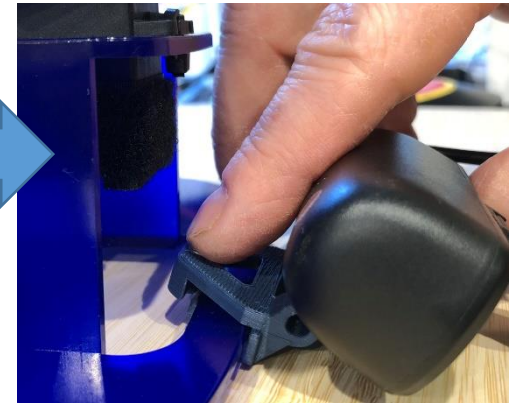
You will need:



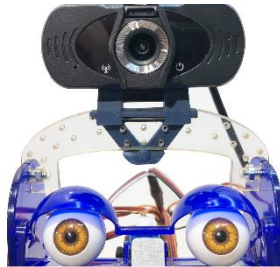
Fix the catch to the underside of the base



Hook the camera bracket to the front of the base and push to clip in place



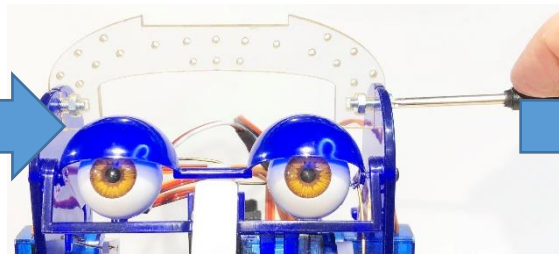
To fix to top of head



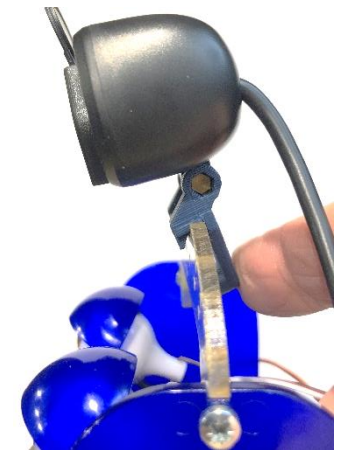
You will need:



Attach the headband using the nuts and bolts

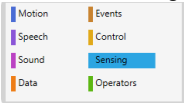


Hook the camera bracket onto the headband and push the back to clip in place

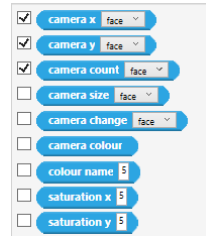


## Sensing the camera in the Ohbot Software

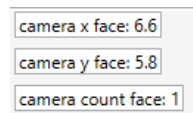
In the Ohbot software select the Sensing blocks menu.



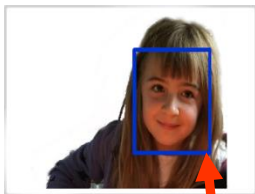
These sensor blocks allow you to work with inputs from the camera in your programs.



Put a tick in the box next to the blocks for Camera X Face, Camera Y Face and Camera Count to display the values of the blocks on the programming area of the screen:



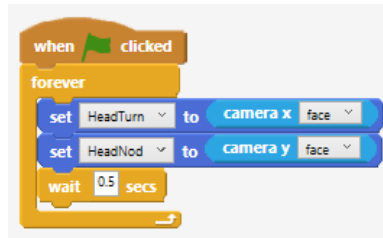
When a face is detected a blue rectangle will appear overlaid on the camera image and the camera count face value will go to 1. The location of the face in the frame is given as an X, Y co-ordinate with the origin to the bottom left of the camera view.



Location of face detected

## Programming with the camera still

With the camera on the base the view that's "seen" will not change when Ohbot's head moves so a tracking program needs to be **absolute** and will need to move the head to the position that the face is detected in:



Try tinkering with the code. Can you make Ohbot move to look at you more quickly or slowly?

## Programming with the camera still

Try an If Else loop that will check whether there is a face in the camera view and say hello whenever there is.



Try tinkering with the code to make Ohbot react more quickly when it sees a face.

## Programming with the camera moving

With the camera on the headband the view that's "seen" will change every time Ohbot's head moves so a tracking program needs to be **relative** and will need to move the head left if the face that's detected is to the left of centre and to the right if the face is right of centre:



## Going beyond

Ohbot will also detect movement, colour and face size. For more information about these click on Help in the Ohbot software.

For more inspiration for programming with the Ohbot camera visit [www.ohbot.co.uk](http://www.ohbot.co.uk).

## About

Ohbot Ltd. Halliday's Mill, London Road, Chalford, Gloucestershire.

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