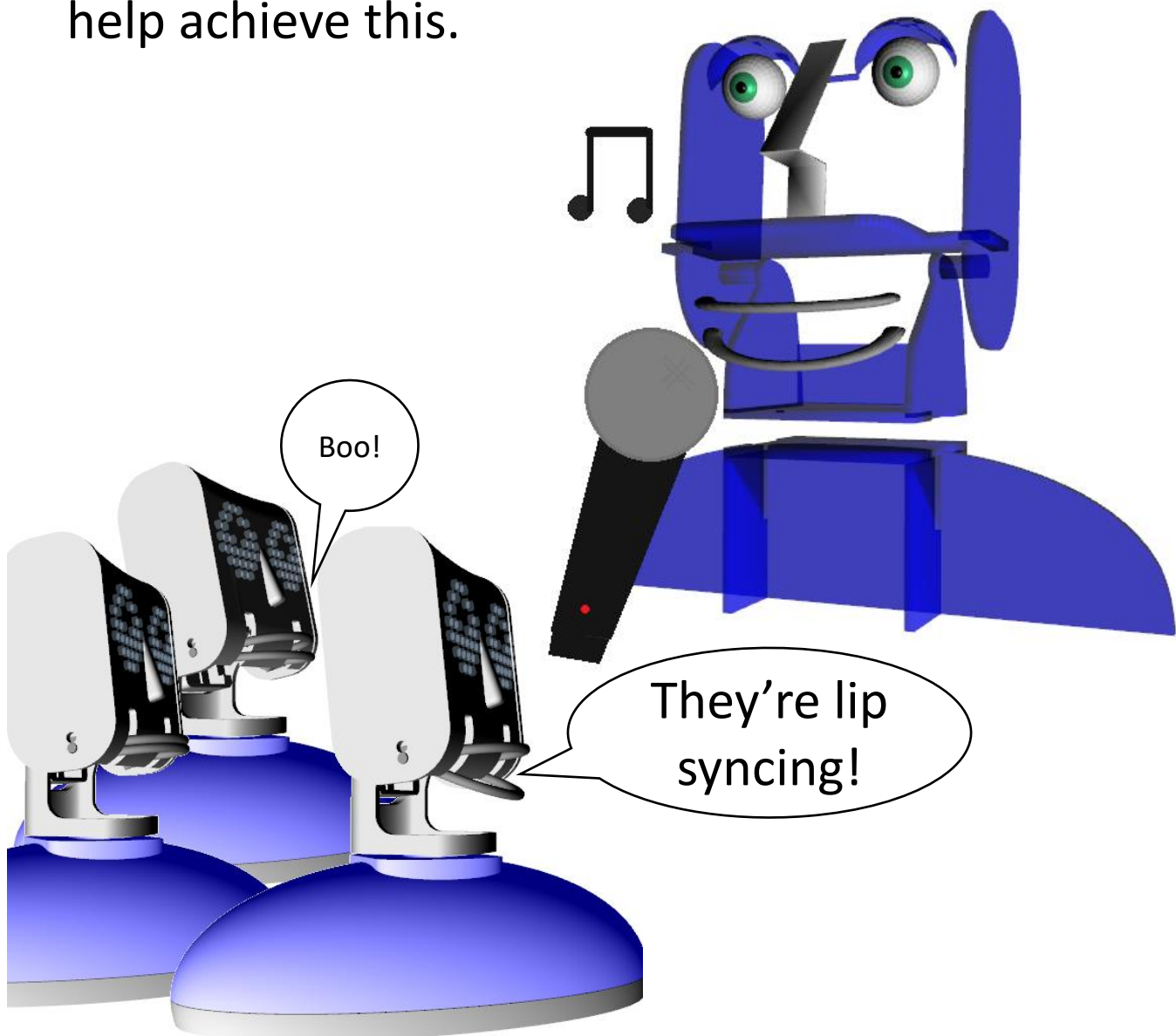


Move like a
human

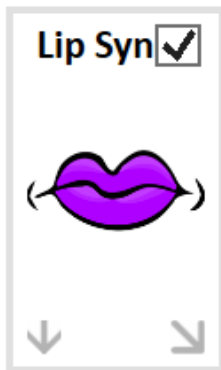
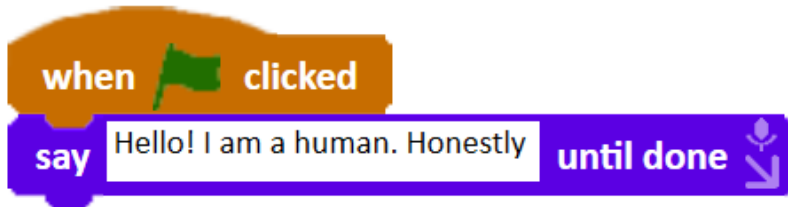
Program your robot
to make life like
movements

In the Ohbot App we have included several existing multiblocks that control aspects of the robot's movement.

Our intention here is to make our robot move like a human. So let's take a look at how the Lip Sync and Blink multiblocks can help achieve this.



Use the Blink and Lip sync multiblocks to help bring your robot to life.



Drag the multiblocks into your scripting area and give your robot something to say.

Run the program and see what you think.

Try running it with the multiblocks unticked as well to see what difference it makes.

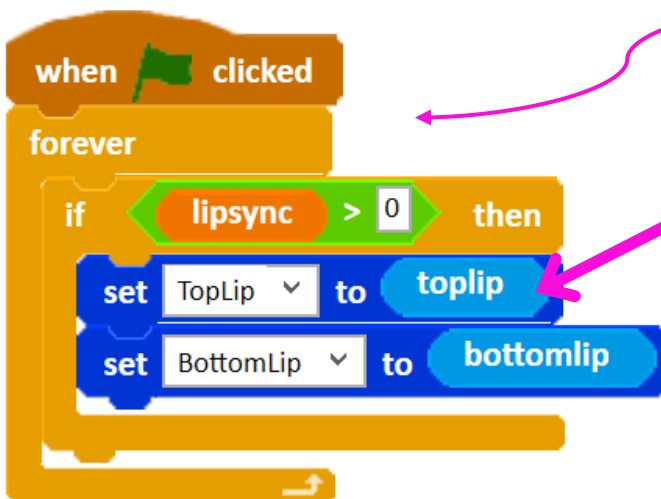
Can you guess what the scripts inside the multiblocks look like?

This is the Lip Sync multiblock. If you have it in your scripting area with the checkbox ticked, when you click the green flag, the robot will move its lips in sync with its speech.

You can select which script you would like the multiblock to use



If you click view then a new tab will open in the App containing the multiblock's script



These blocks provide a number based on the phoneme of the part of speech the robot is speaking.

As well as synchronising lip movement with **Speech** blocks, you can sync the lips with any sound playing through your computer.



This block gives a number between 0 and 10 based on the volume of any sound that's playing

Use an Operator block to add 5 to this value provided by the **sound** block

Adding five to the output of the **sound** block best mimics the lip movement of speech.

You can also sync the robot's lips with sound being recorded by your computer and a microphone. Can you figure out how?

Using the Lip sync multiblock will take control of the lip movement. So if you want to move the lips yourself within the script then you'll need to disable the lip sync with a **set lipsync to 0** variable block.



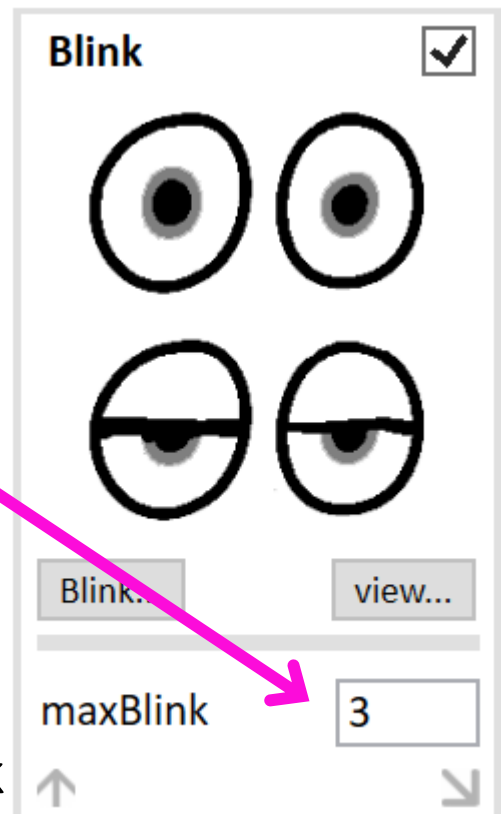
But don't forget to use a **set lipsync to 1** block before the next **say** block if you want the lip sync to work again.

The resting position of the mouth is something to consider when programming your robot to appear human. Our mouth shape changes depending on our situation, for example our lips might be slightly open if we are anticipating something.

This is the Blink multiblock. If you have it in your scripting area with the checkbox ticked, when you click the green flag, the robot will blink it's eye lids in a random pattern.

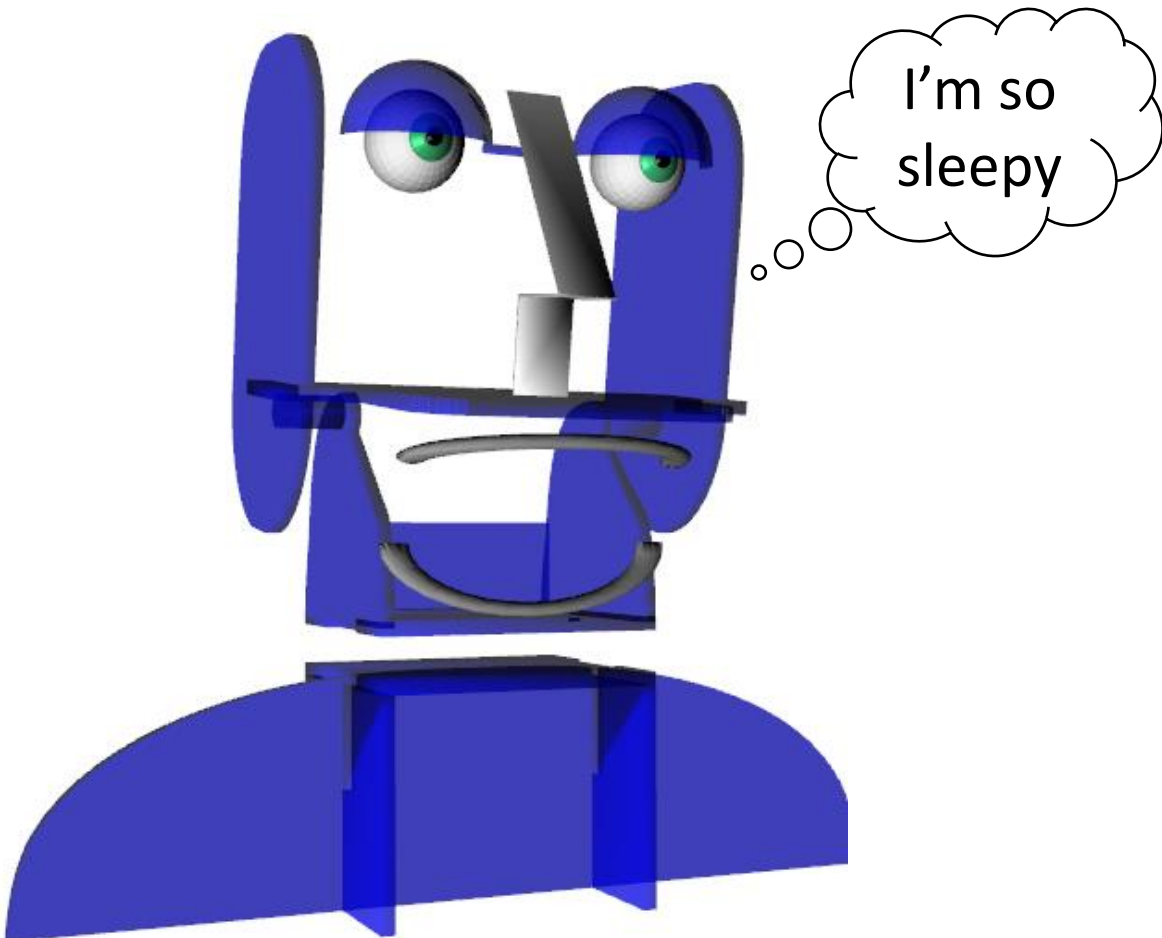


Changing the maxBlink number affects the rate at which the robot blinks



You can use blinking to convey emotions. For example, if you want your robot to look nervous, pick a lower maxBlink number.

What other human emotions or states can you think of that are conveyed with eye lids?



Apart from moving our lips and blinking, what other motions do we make with our head when we are talking?

If you want to experiment with the combination of head and eye movement you can download our example program [here](#).