Binary's UFO
Inventors Manual

- Parents please read the instructions carefully with your children prior to first use.
- Please keep this instruction manual as it contains important safety information
- The toy is only for connection to Class II computer equipment bearing the double insulation symbol - ▢

- Any included electronic terminals must not be short circuited
- Do not touch the temperature sensor when in use
-The battery and battery box must be connected with the correct polarity
- Exhausted batteries must be removed from the toy

8+	WARNING: Only for use by children aged 8 years and older. Instructions for parents are included and must be observed

(€	CB Information Systems Ltd LS5 3BT UK

⊠ ▬	Waste Electrical and Electronic Equipment (WEEE)
	Bring electrical appliances to local collecting points for waste electrical and electronic equipment. Other components can be disposed of in domestic refuse

Find lots of fun activities at www.binarybots.tech

Colours and decorations may vary from those shown.

Please remove everything from the packaging and check the contents.

If any items are missing, please contact the BinaryBots team.

Contact details are on our website.

In his space lab on planet Hex, Alien Inventor Binary has been busy creating exciting programmable objects that help young inventors learn coding and learn about the Internet of Things and STEM.
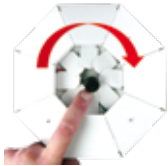
Follow these instructions to build Binary's UFO, your very own UFO!

Step 1	**Step 2**	**Step 3**	**Step 4**	**Step 5**
Check you have everything you need	Assemble Binary's UFO	Make Binary's UFO your own with stickers	Connect the micro:bit to your computer	Start coding Binary's UFO to do amazing things!

For an example video on assembling Binary's UFO, visit: www.binarybots.tech/videos

Step 1 - Check you have everything you need

Lower Dish (1)

Upper Dish (2)

Inner Support (3)

Top Blanking Plate (4)

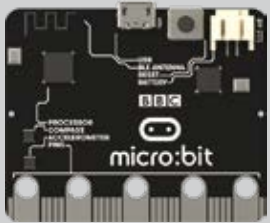Bottom Blanking Plate (5)

Main Body (6)

micro:bit head (7)

A selection of stickers (8)

* You may need to push out any remaining pieces of card using the images above as a guide

BBC micro:bit (9)

Temperature Sensor (10)

Light Sensor (11)

Motion Sensor (12)

Buzzer (13)

RGB LED Strip (14)

Micro USB to USB Cable (15)

AAA Battery Pack (16)
(Requires 2xAAA Batteries)

*Wire colours may vary

Step 2 – Assemble Binary's UFO – Lower Dish

Find lower dish (1) and place it with the shiny side down.

Start by folding the sides of a tab in.

Push the flap through the second slot.
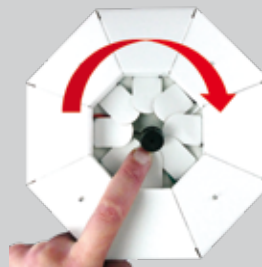

Turn over and feed the flap into the next slot.

Repeat for the remaining tabs, you should end up with something that looks like the above image.

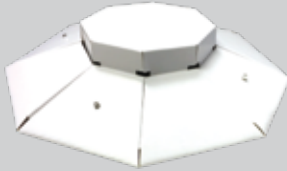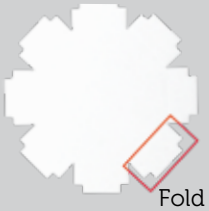Find the buzzer (13) and feed the wires through the two holes on the UFO.

Get the main body (6), turn the lower dish over and insert the long tabs into the slots on the lower dish, make sure that the wires stay in centre.
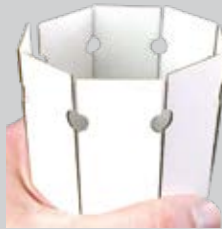

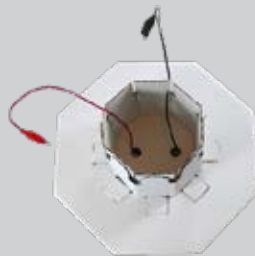Turn the dish over again and fold each tab down in sequence, making sure the buzzer is in the middle.
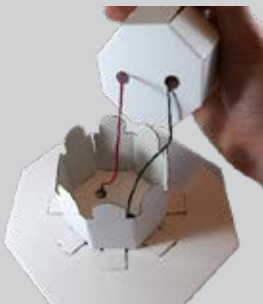
Step 2 – Assemble Binary's UFO - Blanking Plate

Fold

Locate the bottom blanking plate (5), fold the tabs inwards and slot into the bottom.

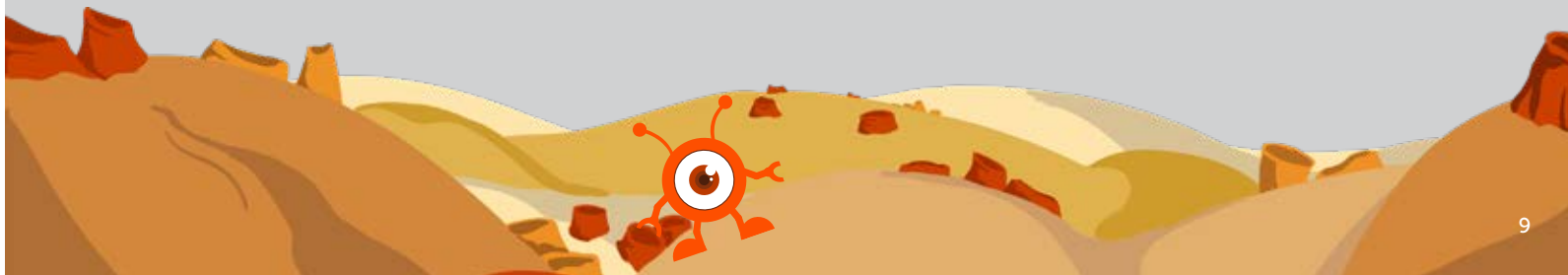Locate the inner support (3) and fold all the long tabs inwards.

Feed the buzzer wires from the lower dish through the centre holes on the inner support.

Be careful to line the centre holes up on both pieces of cardboard otherwise the parts will not fit together.

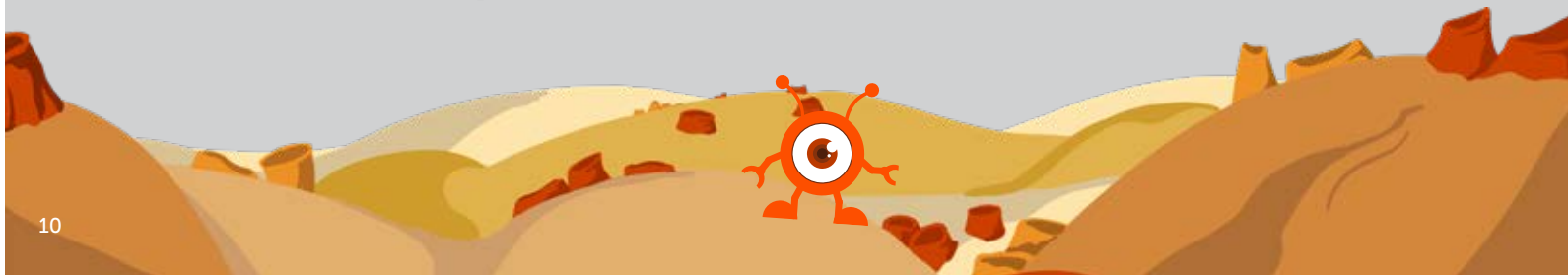Locate the LED Strip (14) and peel the double sided tape off the back

Place the LED strip around the centre of the main body, making sure that the LED strip sticks

Get the upper dish (2) and place shiny side down
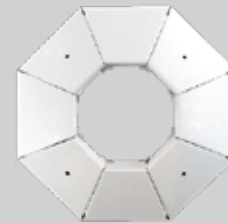
Step 2 – Assemble Binary's UFO – Upper Dish

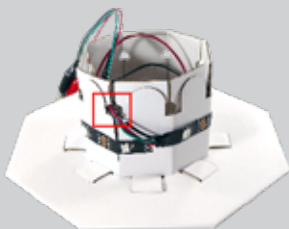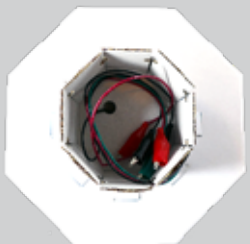While holding the sides, fold the tab over

Turn the lower dish over and feed the flap into the next slot

Then fold the rest of the tabs until you have a complete upper dish

Complete Upper Dish

Tuck all wires into the middle of the bottom dish, make sure to thread the LED strip wires through the holes in the inner support

Line up and place the upper dish over the lower dish, then push it down
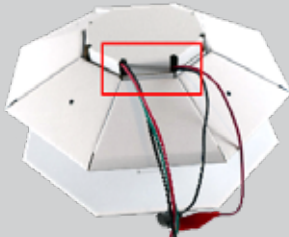
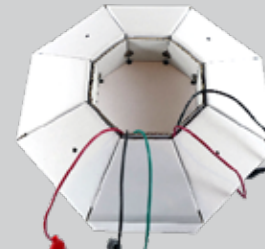# Step 2 – Assemble Binary's UFO – Connecting the Upper and Lower Dish

Find the top blanking plate (4)

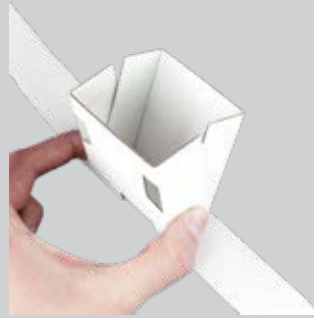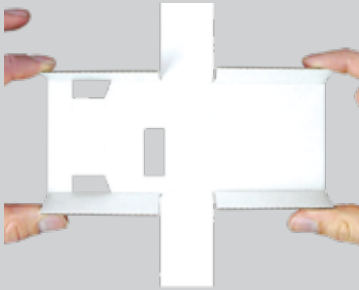Fold the top blanking plate tabs inwards then insert into the UFO dish

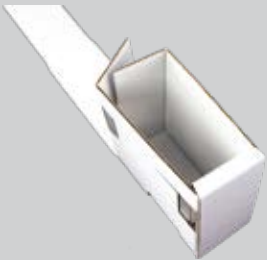Move each crocodile clip wire in-between the tabs

Push the top blanking plate down

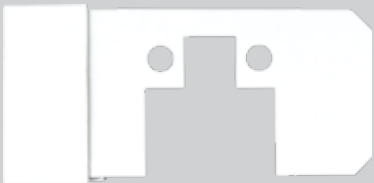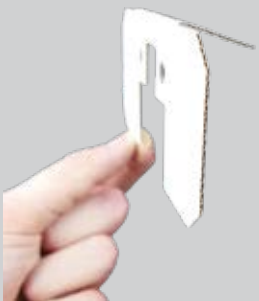## Step 2 – Assemble Binary's UFO – Making the head

Locate the main part for the BBC micro:bit head (7)
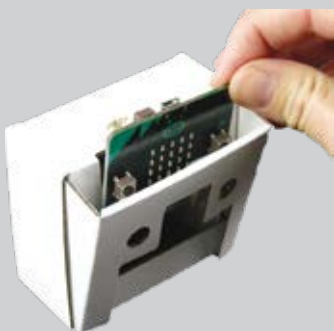Fold the side flaps inwards and then up to join each other.

Fold the long strips of card up and fold them in to the head to lock everything together.

Making sure the head is the right way up and facing forwards, fold the small bit of card in the middle inwards.

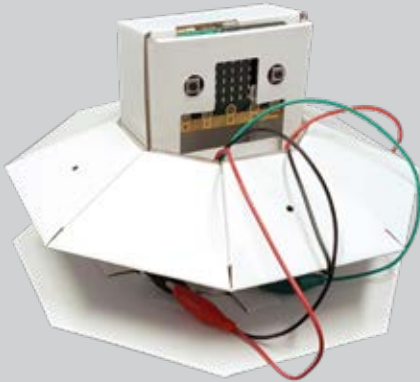Locate the front piece of the micro:bit head and fold the top tab.

Slot the side flaps into the sides of the head

Locate and slot the BBC micro:bit (9) in from the top behind the front piece and then push it all together to hold the BBC micro:bit in place.

Step 2 – Assemble Binary's UFO – Wiring up the head

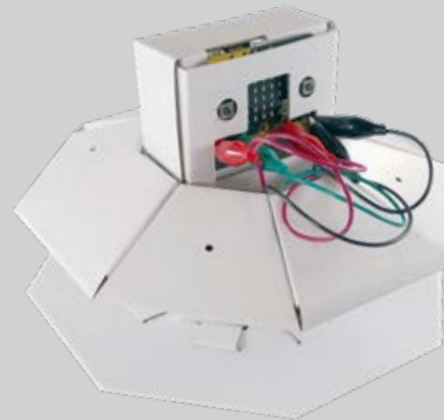Making sure the wires are separate insert the head into the UFO

Attach the red crocodile clip from the speaker to pin 0

Attach the green crocodile clip from the LED strip to pin 1

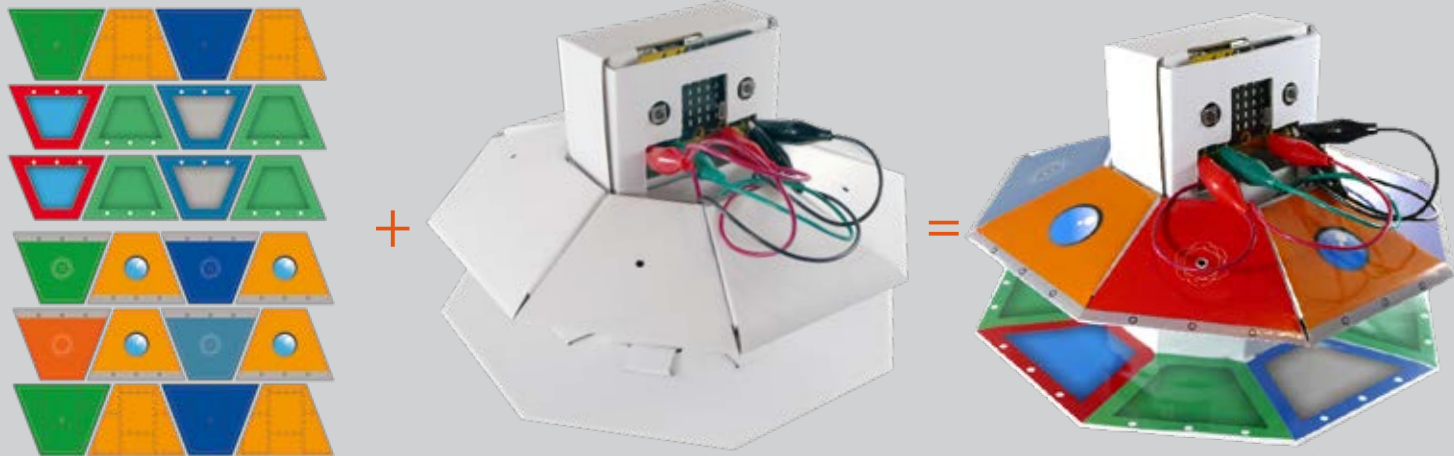Attach the red crocodile clip from the LED Strip to the pin marked 3v

Attach the black crocodile clips from the Led Strip and speaker to the pin marked GND for 'Ground'.

Step 3 - Making Binary's UFO your own with stickers

Get the sticker sheets out of your kit and stick the different sections on to Binary's UFO.

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You can also colour in Binary's UFO using pens or create your own design to be printed and stuck on Binary's UFO.

Step 5 - Connecting the BBC micro:bit to your computer or mobile device

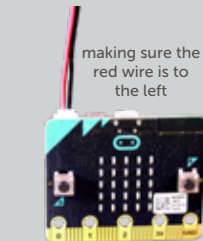## To connect to a PC or Mac - You will need to use the USB cable provided (15)

Now you need to plug the BBC micro:bit on Binary's UFO, into your computer - using the USB cable provided.

Plug the small end into the BBC micro:bit on Binary's UFO head & the other end into your computer.

To connect to a mobile device - You will need to use the battery pack provided (16)

making sure the red wire is to the left

Make sure the battery pack is turned on and insert into the head. We recommend for demonstrations

Connect the battery to the BBC micro:bit

Visit your device store, for example on Apple it would be the App store, Android would be the Play store. Search for the "micro:bit" app and install it.
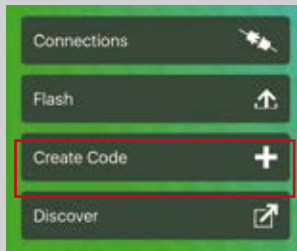
Once you have installed the app, open it, click on find connections and then 'Pair a new micro:bit' button. Follow the instructions to connect your micro:bit with Bluetooth.

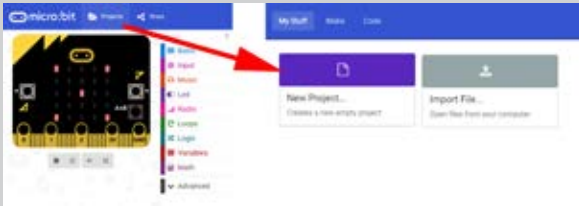# Step 5 - Start coding Binary's UFO to do amazing things

When you are coding using the BBC micro:bit, you need to do it through their online editor.

If using a computer, open the web browser and go to http://microbit.org/
When it loads, click on "Let's Code" shown in the image below, on the centre top in the red box.

If you are using your mobile device, click on "Create Code" which will take you to the website. Then click on the 'Let's Code' button shown in a red box on the left.
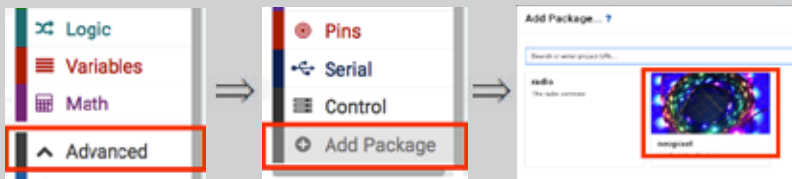
There are lots of different types of editor you can use to program the BBC micro:bit. We are going to use the 'JavaScript Blocks Editor (PXT)' for this project.
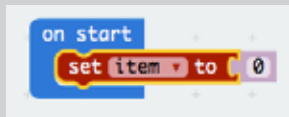

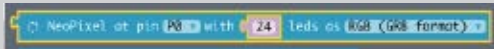Click on 'Projects' -> 'New Project..'

Rename the project so it is easier to locate later, change the name to something meaningful i.e UFO Lights

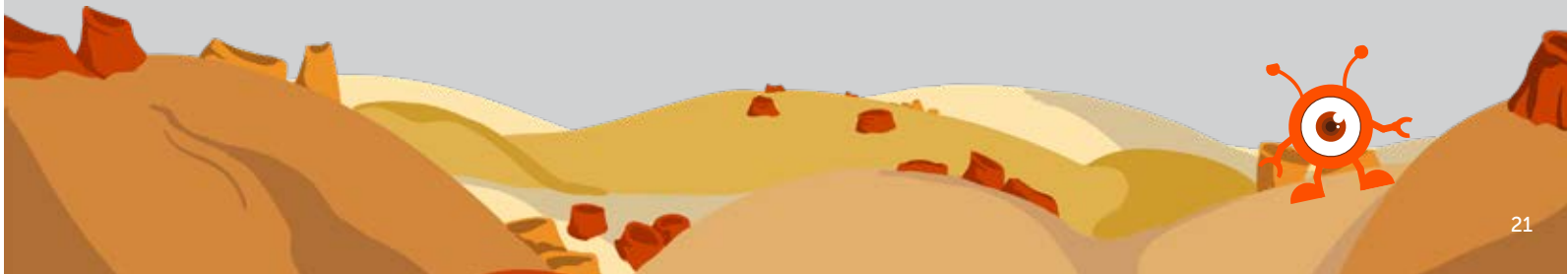Click on the 'Advanced' tab then 'Add Package'. select the 'NeoPixel' addon

Click on the 'Variables' tab, select 'Set item to' block and drag it into the 'on start' block already on the page.
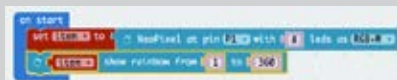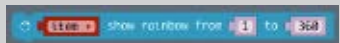

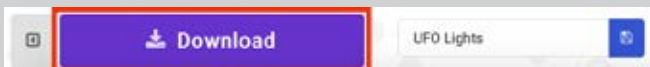Click on the 'Neopixel' tab, select the 'NeoPixel at pin' block.

Drag and drop to the left of 'set item to' block. Then change the pin to 'P1' and '24' to '8' - This tells the program that we are using 8 LED lights on Pin 1.

Click on NeoPixel tab, select 'show rainbow from' block and drag it underneath the 'set item to' block on the page.

The program is ready to run,click on 'Download' at the bottom of the window - this will create your code and download it to your computer or mobile device

If you are using a computer:
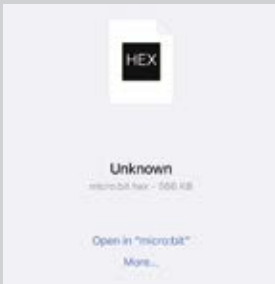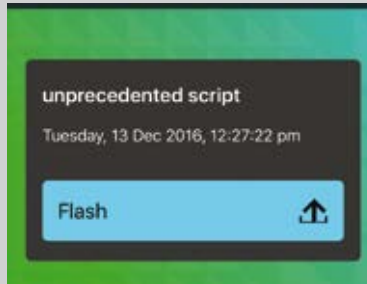

figure 1

figure 2

Click on the downloaded file at the bottom of the browser (figure 1) - select 'Show in Folder', this will show the location of the downloaded file.

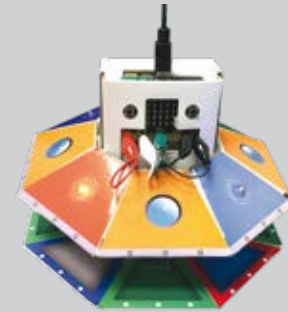Copy and paste your file onto the BBC micro:bit (figure 2)

If you are using a mobile device:

Tap on the 'Open in "micro:bit" link - this will take you to the BBC micro:bit app.

Then tap on the 'Flash' button and the code will flash to your micro:bit.

An example of Binary's UFO

Now you're officially a robot inventor, it's time to enjoy learning how you can use Binary's UFO to learn lots more about robots and coding.

For lots of exciting projects & activities you can do with Binary's UFO using the sensors in the pack visit:

www.binarybots.tech

www.binarybots.tech

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