ISSUE **2**

openuk zine

THIS EP

THE HARMONY GLOVE

Shwmae

&

WELCOME TO THE 'ZINE

I hope that you have enjoyed Episode One and your glove kits. If you have a special edition OpenUK glove kit from our giveaway then you will have a lovely orange glove with blue stitching. Those are our OpenUK colours – although you will see that we also use the Pride rainbow in our logo too. We hope that you like the colours! ;-)

The folk at Pimoroni worked really hard to design these and get them to you for the Camp and we are grateful to Paul and the team there @pimoroni.

If you have a MiniMU glove that wasn't in our giveaway, then it is a beautiful aqua colour. Any of you who are taking part in our first OpenUK Kids Competition in September will have those.
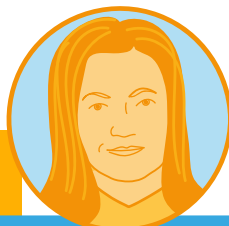
If you are not taking part in the competition this year, I hope that by the end of the #openkidscamp, you will be a confident coder and want to join our 2021 competition and show the world what you can do!

Everyone participating in OpenUK, including all of our volunteers across our open technology community, is really excited to see how you are doing, so please post pictures and videos – we can't wait to see them. You can share them on Twitter, Facebook and Instagram.

Episode Two is all about harmony, and that's something we hope you are creating.

Happy coding.

Amanda Brock is CEO at OpenUK

Amanda, Editor

MAKING THE GLOVE

Community Engagement Challenge
20
20 PHASE ONE WINNER 20
Presented by GNOME and Endless

KEEP IN TOUCH

openuk.uk

TEEN ZINE

Femi

Your step by step guide to coding genius

#02 CHOOSE IT!

Choose a good online course to follow. It should always be free and going for known learning platforms (such as Udacity, Grok Learning, Future Learn, EDX, Code.org, OpenUK, Codecademy) can help.

If you find that a course is a bit boring, sometimes it's worth sticking it out until the end, but if it is quite difficult to follow, it probably means it is not the right course for you.

These online courses are a great way to upskill especially during lockdown, you can progress at your own pace and can come back to them at any time.

It doesn't just have to be online courses! There are also some great books, YouTube tutorials and blogs you can learn from too – don't be scared to try something new!

Femi Owolade-Coombes, age 14

HackerFemo

Go!
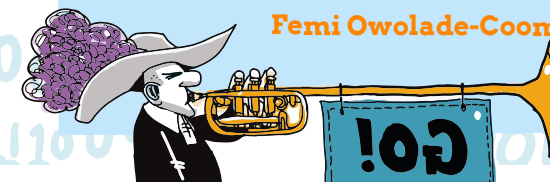
micro:bit WIZARD

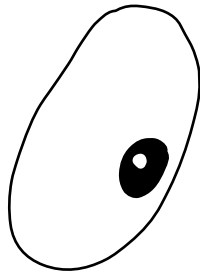Your micro:bit questions answered by micro:bit expert **David Whale!**

David

Q *Why do the crocodile clips only work properly at an angle?*
Adonai, Essex

A If the crocodile clips are clipped flat onto the micro:bit, they will move side to side, and short out against the tiny pins on the edge connector. Those tiny pins also have other signals on them such as for the buttons and the display, so you will get some interference and things will stop working. Clipping the crocodile clips 90 degrees to the board stops them moving around and shorting-out the pins.

Q *What does LED stand for?*
Richard, Telford

A LED stands for 'Light-Emitting Diode'. A diode is an electronic component that only allows the current to flow in one direction (a bit like a valve). A LED is a special type of diode that also emits light when you connect it up the right way round (but it will not emit light if you connect it up the wrong way round).

David Whale is a Software Engineer

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PLEASE **MISS** **BOAL**

Pamela

GET WITH THE ALGORITHM!

Videogame director, designer and programmer John Romero believes that coders are not only inventors but also artists - "You might not think that programmers are artists, but programming is an extremely creative profession. It's logic-based creativity."

Which programming concepts have you considered while being artists on the Harmony Glove?

An ***event handler*** runs code based on an action by the user. This can be as simple as a mouse-click or a glove action such as ***on tilt left,*** on ***screen up*** or ***on logo up.***

Loops are a programing concept which refers to pieces of code which have to be repeated. The ***forever loop*** which you used in this code is an infinite loop as it repeats until the program ends.

Selection statements are blocks of code that run only when a certain condition is met.

Sometimes, code needs to branch out taking different paths based upon a condition. For example, using an ***If statement*** to play one set of notes if the glove tilts right and another if it tilts left.
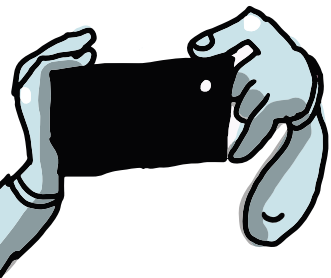
So, you - our artists, musicians and innovators - your journey with code has continued using Open Source.

Did you realise that you were users of Open Source Code using MakeCode, this course and the MiniMU glove?

Keep Coding!

Pamela Boal is an Educationalist

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INDUSTRY INSIDER

Mihail

STUDYING COMPUTING

Turning your creative ideas into Open Source Code requires some knowledge on how computers work.

You do not need to know everything, but it helps to have some knowledge of the basics – especially if your program does not behave the way you wanted it to.

You may find it helpful to know how to correct that. It is good to be curious! Are you wondering about things, like: how does the micro:bit tell the speaker to make that noise?

We have the same type of questions when we start a new project in our company, like: what program do I need to build to make what I want to? How can I start?

The fun thing about software is that it is always evolving. You will never be bored!

There are always new techniques and languages to learn.

There are many courses you can do, online at home, like this one, all the way through to university. The main thing is to study and practise what you enjoy, so that when you are older like us, you are doing something that you love.

Mihail Popov is a Software Researcher

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OPEN SOURCE HERO

Vicky

Participating in Open Source communities is an excellent way to learn more about programing and technology. If you stay in IT for a while though, you'll find that the technology you end up using – programming languages, hardware, whatever – will change frequently. Technologies come and go at the speed of innovation, which is now super-quick!

While that tech experience is useful and fun, the most valuable takeaways from participating in and contributing to Open Source aren't related to the technologies at all: they're all about interactions with people. You'll learn about collaboration, communication, and cooperation. You'll meet people from around the globe who'll become lifelong friends, colleagues, and mentors.

These experiences will stay with you forever and serve you well no matter which industry or endeavour you find yourself in. This sort of knowledge can be applied anywhere and can help make you a better student, employee, leader, and – most importantly – fellow human being.

VM (VICKY) BRASSEUR FORGING A CAREER IN OPEN SOURCE

All that, just from participating in Open Source! There's a lot of great potential there, all bottled up inside of you. Contributing to Open Source can help you let it out. So go ahead, join the community and forge your future with Open Source!
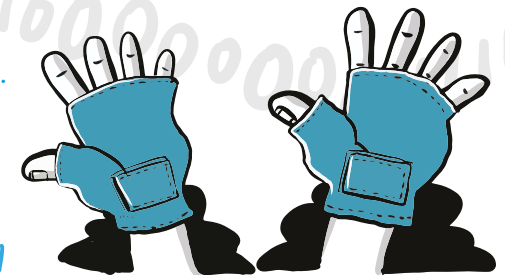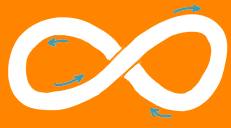
VM (Vicky) Brasseur is a Corporate Strategist, Open Source & Technical Leader, Author & Speaker

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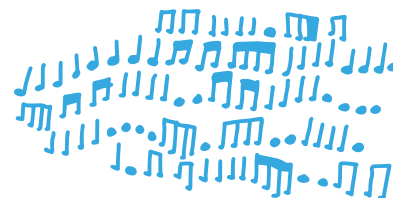
WELL BEING

LIVING IN HARMONY

Have you ever heard the term 'living in harmony'?

The Cambridge Dictionary defines "harmony" as a situation in which people are peaceful and agree with each other, or when things seem right or suitable together.

How can you actually live in harmony?

Express gratitude and appreciation. Be thankful for your friends, family and health. Say thank you when your parents make you breakfast, take you to school, or get you that new micro:bit!

Be brave and honest about your feelings… even the negative ones. For example, if you are hurt or upset, speak up. Acknowledge how you feel, calm yourself down, share the reasons why you're upset, and identify/or inquire about possible solutions to avoid this situation in the future.

Matthew

Have empathy. Understand that everyone does not think the same way, and that we all have our difficulties and shortcomings. If you get into an argument, rather than yelling, take a few minutes to think about the other person's or people's position, and why they may feel the way they do.

Stay positive! It's okay to make mistakes, to get upset, or sad. The important thing is to learn from your mistakes and try your best next time.

Try practising those suggestions for a week and we hope you will feel more able to live in harmony.
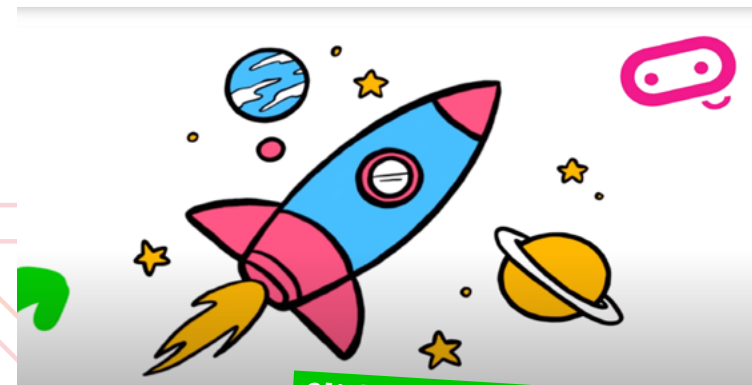
Matthew Springer is a Founder

micro:bit REUSE

Wise words from the bit brain

micro:bit

PROCESSORS

A **processor** is sometimes called the 'brains' of a computer and your BBC micro:bit has a micro **processor** inside it. It's an essential part of your micro:bit as it runs the programs you write. Watch this video to discover the essential part of computers, phones and tablets.
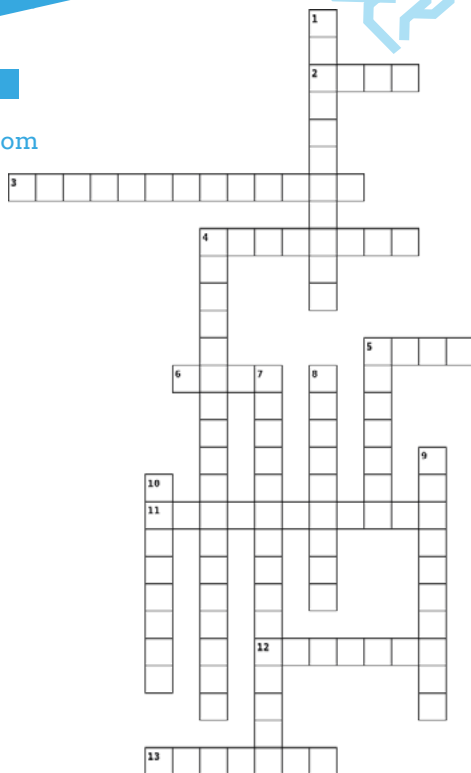
Click here to view the film

Just email your finished puzzles to enter
ezine2@openuk.uk

Crossword
courtesy of crosswordlabs.com

Word Search
courtesy of puzzlemaker.discoveryeducation.com

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R H M F N R D R A O B Y E K S
E E O C O E P E F F X L X T E
V L T L O J K O D H U S P I M
O D S E N N R A T O B U E L O
L J U Q M E D G H M C O R T C
G S C T V O N I H S R U I I T
A C C E L E R A T I O N M N U
C C R E R Q R E U I E I E G O
O I A T D D O S L C O T N H P
D R S D S C E O R E Q N T K E
I L E H E R E U S E C C O A O N
N Y A S R N O M U S I C A L B
G K P T T S C K C O L B A V K
E R U T S E G E F L A S H O Y
K C O L B N O S I R A P M O C
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ACCELERATION	ACCELEROMETER	BLOCK
CADENCE	CODE	CODING
COMPARISONBLOCK	CONDITIONAL	CONTINUOUSLY
CUSTOM	EXPERIMENT	FLASH
FOREVER	GESTURE	GLOVE
HARDSHAKE	KEYBOARD	MUSICAL
OPEN	OUTCOMES	REST
RE-USE	SHAKEN	SOURCE
STRENGTH	TILTING	USER

Across

2. What is it called when you check that something is working as it should?

3. What are the names of blocks that can accept any number of other blocks of code?

4. What is the name of the gesture that is made when you hold your hand out with fingers pointing up to the sky in a stop position? (three words, 2, 4 and 2 letters)

5. What is the name of program instructions you give to your computer?

6. What is another name for the blue forever block?

11. What is another name for a conditional? (two words, 2 and 9 letters)

12. What is a movement of the hand called?

13. What is the name of the event handler in the input palette that contains a drop down menu listing all of the gestures your micro:bit supports?(two words, 2 and 5 letters)

Down

1. What is the name of the event handler that detects that you have tilted your glove to the right? (three words, 2, 4 and 5 letters)

4. What is the name of software that is released under license giving others the right to use, change or distribute it? (three words, 4, 6 and 8 letters)

5. In music what refers to the ending of a piece of music?

7. Where do you place your event handlers? (two words, 11 and 4 letters)

8. What is the length of the play note C that you slot into the on start event handler to show you your micro:bit is working?

9. What is the name of the event handler that detects that you have tilted your glove to the left? (three words, 2, 4 and 4 letters)

10. What do you slot into the event handlers 'on screen up', 'on tilt left', 'on tilt right', and 'on logo up', that will play notes?

PRIZE
Win a Huawei MatePad T8

HUAWEI MatePad T 8
Everything You Need, On The Go

To enter the prize draw you must submit the completed Crossword and Word Puzzle from Ezine1, by email to **ezine2@openuk.uk**. All entries are subject to our terms and conditions which you can read **https://openuk.uk/ezine-2-comp-terms-and-conditions/** By entering you agree to them and confirm that you have parental or guardian permission if you are under 16 years of age. One winner will be drawn from completed entries received by 10 September. No cash alternative. UK residents only. Judges decision is final. No correspondence will be entered into. Surname and county of prize winners will be made available on request. Promoter, OpenUK.

CONTRIBUTORS

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OpenUK MiniMU INSTRUCTIONS
LESSON TWO

Matthew has a problem to solve: he wants to play in the school band, but doesn't have a musical instrument to play. He has a MiniMU glove and wants some help building and coding it so that it plays different notes as he tilts his hand in different directions.

In today's lesson you will help Matthew.

By doing this you will learn about:
❑ Event handlers;
❑ loops;
❑ selection, using an 'if' statement;
❑ and you will play a range of different musical notes.
❑ You will also learn about who uses open source software.

You will need:
❑ your assembled MiniMU glove;
❑ access to the MakeCode web coding editor;
❑   a small piece of music to play along with.

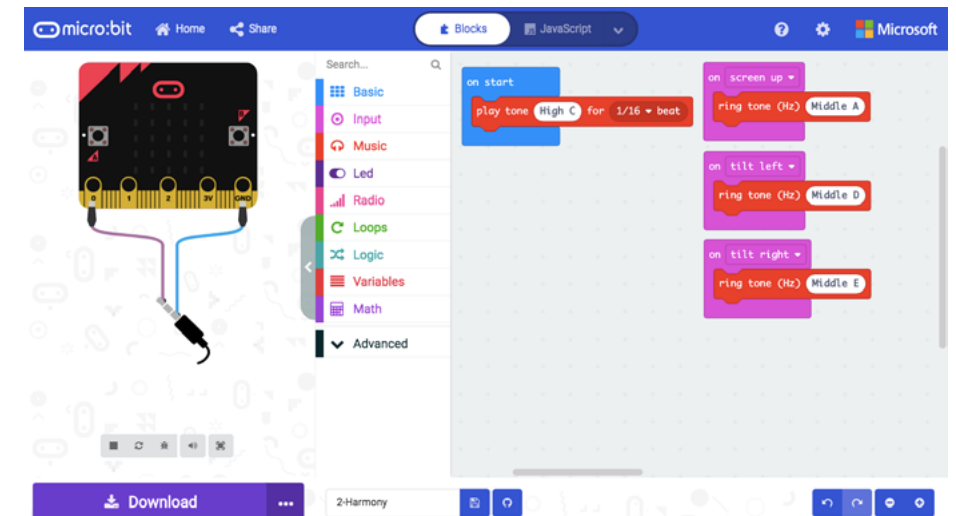Figure 1: The MakeCode web coding editor
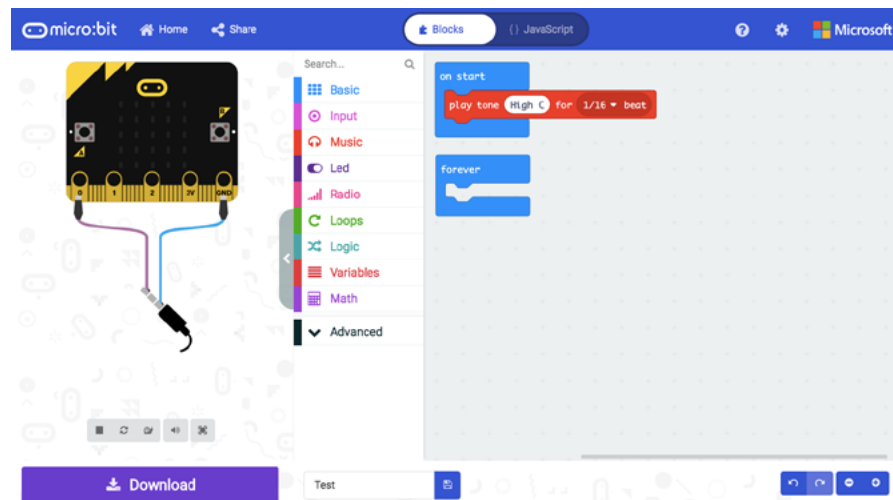
Figure 2: Playing a note when the micro:bit starts

Figure 3: Playing 3 notes with 3 different gestures
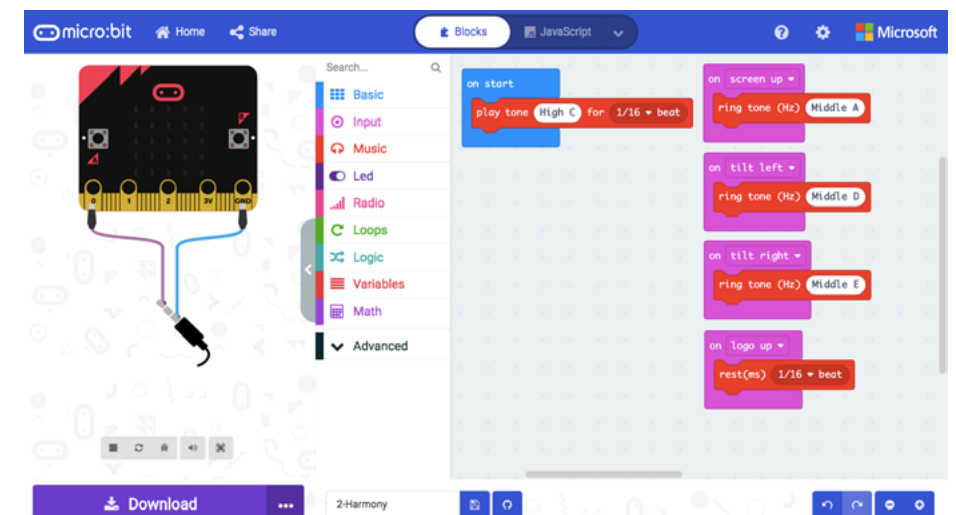
Figure 4: Adding the 'on logo up' gesture, to stop the sound

Figure 5: The 'forever' and 'if' create a custom shake gesture

Figure 6: Andy's YouTube channel has 10 easy songs with A, D, E

https://www.youtube.com/watch?v=KOZFWeCic2s