openuk zine

THIS EP

IDEA GLOVE

Mini.mu Speaker
3v

Adios Amigos

& WELCOME TO EP 10

Amanda, Editor

All good things come to an end - I have always hated that saying.

This first Open UK Camp ends here, sad to say. Steph (our voiceover artist) has her feet up with a cuppa. Camp is shared with a Creative Commons licence and free to use, so please use at your leisure.

Camp being over doesn't mean that you can't keep coding and we hope you will! You can also follow the Heroes you have met if you use twitter.

Have you ever wondered why we created #openkidscamp?

We reacted to change. 2020 is our first year of holding a Kids Competition and I hope you will now be confident glove users and want to join the competition in 2021. We will share details on our web site, so look at openuk.uk in January.

Because of the pandemic, our original plan to bring finalists in our competition to London to spend a day at the Red Hat Innovation Labs, working with Imogen Heap, was not possible. I was really disappointed.
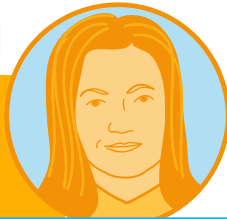
Software development follows *design thinking* and *agile development*. You can read more about both in this Ezine. One of the principles used in these is to *fail fast*.

If you find that something is not working out, because you use *agile* and constantly check and *evaluate*, if something is going wrong, or no longer works, you are able to stop and *change.*

Circumstances changed, our plans were no longer possible, so we changed our plan and created the Lessons instead. I loved them so much that I wanted to share with you all. Sometimes it's good to fail fast….

Keep coding

Amanda Brock is CEO at OpenUK

IDEA GLOVE

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

KEEP IN TOUCH

openuk.uk

2

TEEN ZINE

Femi

Your step-by-step guide to coding genius

#10 DESIGN THINK IT!

HackerFemo

Design thinking is a key process in creating projects and apps.

It begins with *empathising* with your users, and learning about your audience, through surveys or interviews.

Then, you *define* a problem that you are going to address in your app and your users' needs.

Next, you *ideate* and brainstorm possible solutions. That's what Lesson 10 is all about! It's a bit different from the others.

Here, you will also want to conduct some market research into your product, have a look at what is already out there and think about how you can make your idea different. Take inspiration from the world around you. Think broadly.

Then create a *prototype*, a simple version of your app or idea that does only the key functionalities. There are some great prototyping tools such as MIT Appinventor and marvelapp.com.

Finally, you *test* your prototype, receive *feedback* from your users and then *iterate* and repeat the process again to improve your app.

That's *design thinking* – and it often works better in a team as teams and collaboration bring different opinions and diversity.

Femi Owolade-Coombes, age 14

3
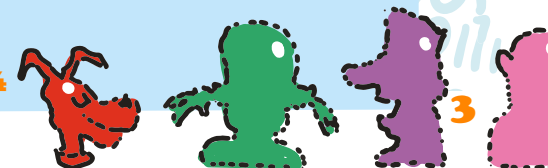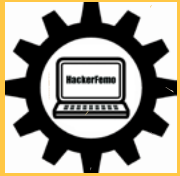
micro:bit WIZARD

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

David

Q *The latest MakeCode includes some new features which are your favourites?*
Avye, London

A I really liked the *green-screen* feature, because it is great for giving *demos* of robots to a large class at the same time as explaining the code. I really like the addition of the collapse-and-expand feature of the *function* blocks, as it allows me to write bigger programs without filling up the screen. But my absolute favourite feature is the new *melody editor*, because it is now really easy to program in a detailed melody without taking up too much screen space.

Q *Why is it important that the micro:bit is open source?*
Guy, Perthshire)

A he micro:bit is aimed at children learning about computers and electronic devices, and it is important that everything about the device is well described and explained to allow children to learn about it. By it being Open Source, information inside it is available and transparent so you can be inquisitive and dig down into the details to learn how things work. You might discover some new hidden features- but also, as you learn more, eventually it will encourage you to contribute your own ideas back into the micro:bit ecosystem. By being Open Source, you can learn new things, and also contribute new ideas too! Many of the pre-built images in the micro:bit were contributed by an 11-year-old girl from my computer club – this was possible because the micro:bit is Open Technology. What kind of new feature will you contribute in the future, I wonder?

SOLVES A PROBLEM

David Whale is a Software Engineer

PLEASE MISS BOAL

Pamela

CODE CHALLENGE!

In this final Episode, we recognise that during the last 9 Lessons you have become expert coders with the MiniMU glove and pass control of the innovation process over to you. To quote Barack Obama: "Computers are going to be a big part of our future… and that future is yours to shape". Let's look at how you start shaping that future.

The first stage is to consider the process of *ideation*. *Ideation* is the process of coming up with new ideas, developing them, and communicating them to other people. This usually starts by developing a project brief which is the document that outlines the details of the problem that you are trying to solve.

Next, we identify our team and their roles before moving onto the process of *brainstorming* ideas together. Finally, we *evaluate* our idea against criteria which has been agreed, before deciding on our final product. Remember, if we discover that an idea isn't working then we can *loop* back around through the *ideation* process.

Once *ideation* has been done, *prototypes* have been created (a sample of the products) and *testing* has been completed, the product is created. It can then be brought to life and improved using the Open Source communities.

Write your code, *attribute* it to yourself, and *package* it with a copyright notice and licence which allows *modification*. Next, publish it on a public forum/*repository* such as GitHub. The Open Source community will then develop it further by providing feedback, *bug-fixes* and adding new *features*.

Isn't the power of collaboration amazing!

Remember the magic of Open Source as you enter your career journeys in the future!

openuk.uk

INDUSTRY INSIDER

Mihail

AGILE DEVELOPMENT AND COLLABORATION

In Ezine 9, we saw how several developers can work together on the same project.

However, collaboration can still be a challenge, even with tools such as *git*. To further improve productivity in a real world environment, specific develop-ment practices have been widely adopted by the developer community over the last 15 years. Developers that follow the mindset described by these practices are said to use *agile development.*

Let's consider an essay on how great it is to have dogs as pets. We will write it as a team with the *agile* mindset. A standard approach suggests to write our whole text and then share it.

Agile recommends an increase in communication by writing and sharing our work section by section. This allows a team to iterate together and easily identify interesting parts that may need more work!

Because the work is constantly updated, it is easy to face changes. For instance, if the professor changes the essay title to cats instead of dogs, we can more easily update our text. Surprising, this may happen in real business projects (it is hard to predict everything from the start)!!

To summarize, small *iterative* updates and communication with team work really help to solve on big problems!!

Mihail Popov is a Software Researcher

OPEN SOURCE HERO

Jono

In the last ten years we have seen an incredible growth in communities around the world. Fitbit, Harley Davidson and of course, Open Source, are fantastic examples of communities.

The reason for this growth is that communities are an amazing coming-together of minds jammed with experience, expertise, and time. When you enable these minds to communicate and collaborate, anything is possible.

The key to building amazing communities is to start simple.

Provide a simple place where people can get together online (such as forum, Facebook Group, Slack channel, or mailing list). Then, make it easy for them to make a contribution. Contribu-tions vary from community to community and can include writing code as we have seen on this course, creating blog posts, running events, writing documentation, translating things, or anything else.

When people join your community, engage with them, keep them excited and where possible, reward them. Give them a reason to come back!

The main reason people come back is because the community is meaningful, and they make friends. Focus on both and you will build an amazing community.

JONO BACON
JOIN THE GLOBAL COMMUNITY
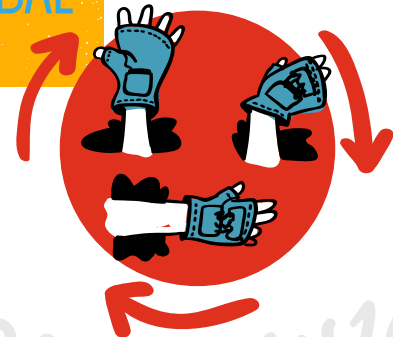
Communities are the future and you are getting involved at the most exciting time I have ever seen.

Good luck building your own communities!

Jono Bacon is a Community and Collaboration Strategy Consultant and Author

WELL BEING

HOW SPORTS BOOST CREATIVITY

Matthew

What's your passion, or favourite hobby? Whether it's playing instruments, building robots, fashion, making YouTube videos, or anything else, sport can help you do it better!

Exercise has a long list of benefits – with one being an increase in individuals' creativity.

Creativity allows you to think outside the box, be a problem-solver, and shape a life that you love. Creativity essentially means coming up with new ideas and ways of doing things. Life is constantly changing and being able to adapt is definitely key to success!

However, being creative isn't always easy: it's a skill to be developed over time… like a muscle that gets stronger the more you train it! There are many ways to boost creativity, but in my opinion, sports are among the most fun.

On a scientific level, physical stimulation releases beta-endorphins, those "happy hormones" that make you feel good and be positive.

Exercising also boosts serotonin, a neurotransmitter that makes you sleep better, allowing your brain and body to repair and recharge and wake up feeling more alive, and fresh. This increases memory and improves mental health – both are greatly beneficial to your creativity.

Sports also enhance discipline (the ability to stick to the task at hand), and communication as you are interacting with teammates. They also keep you present and focused.

These are all key factors in boosting creativity.

Matthew Springer is a Founder

micro:bit REUSE

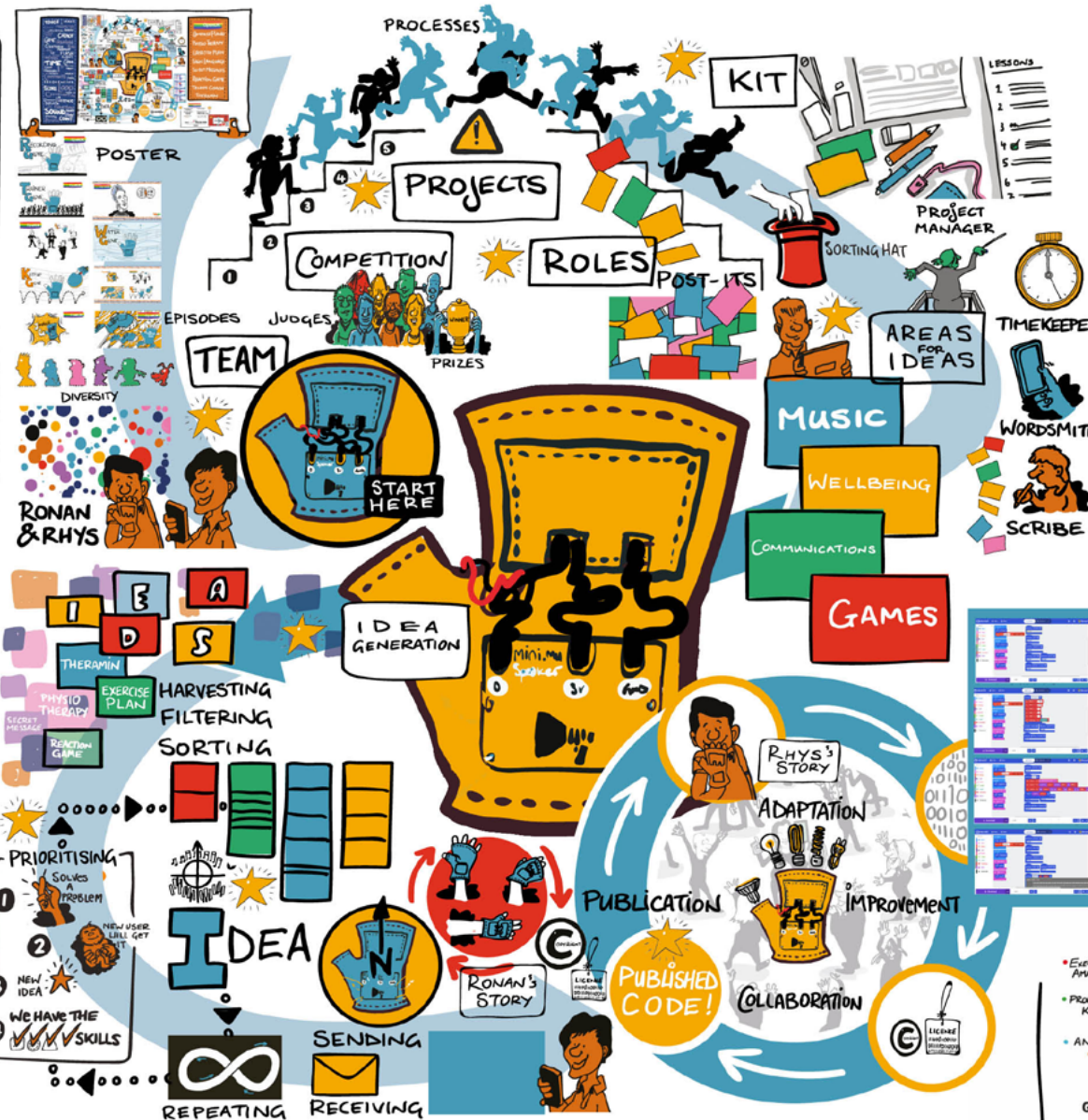**Wise words from the bit brain**

micro:bit

MICRO:MAG

The free magazine full of new projects for the micro:bit. Written by community contributors, micro:mag shares top tips, ideas, news and reviews for micro:bit fans.

The unofficial micro:bit community magazine
Issue 3 January 2019
:mag
AMAZING micro:bit Projects
We showcase some of our most loved micro:bit projects
In This Issue

WHAT'S INSIDE AMAZING MICRO:BIT MAKES, NEWS, REVIEWS AND MORE!
Issue 5 August 2019
micro :mag
Links to useful GUIDES
10 MICROPYTHON PROJECTS
Explore MicroPython
Explore the essentials of MicroPython and the BBC micro:bit
MicroPython MAKES
PYTHON
THE UNOFFICIAL MICRO:BIT COMMUNITY MAGAZINE

WHAT'S INSIDE
Issue 6 November 2019
micro :mag
BUILD A ROBOT
Build your own low-cost micro:bit powered robots
THE UNOFFICIAL MICRO:BIT COMMUNITY MAGAZINE

Click here to to link to mags

BRAIN GAMES

Just email your finished puzzles to enter **ezine10@openuk.**

Crossword
courtesy of crosswordlabs.com

```
N R P U J J E L I I G D I P W
O E R A U M I M D C U I R T Z
I P O X I C A E I H B O N E S
T E D C E D A I T T J E T C T
A E U N D T E C R E M C D N P
C K C F I Q E A C E E G S E R
I E T O V J I T G L T C Y D O
F G N T O L M A E L O I I A T
I E O R F A N S J R O Y R C O
D T P W N A U F E A A V O C T
O I U A M X I F G U B A E D Y
M T G F E I R B T C E J O R P
E E O P E N S O U R C E C T E
R Y R O G E T A C R E P E A T
T S E T I P R O C E S S W Q L
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BUG	BUGFIX	CADENCE
CATEGORY	CRITERIA	GETIT
IDEAGLOVE	IDEATION	KEEPER
LICENCE	MANAGEMENT	MODIFICATION
OPENSOURCE	PROCESS	PRODUCT
PROJECT	PROJECTBRIEF	PROJECTMANAGER
PROTOTYPE	REPEAT	SCORE
SELECT	TEST	TIME

Across
2. What is a group of people who have shared interests or attitudes, or who live in the same place called?
5. What is another word for a note-taker, or somebody who makes written copies of documents?
7. In Ancient Greek mythology what are the Muses the source of?
12. What does Mr Illustrator do?
14. What is the name of a piece of paper with a sticky edge that you can write reminders or ideas on? (Three words, 4, 2 and 4 letters)
15. What is an improvement or intensification in something (such as quality or value) called?
16. What is a name given to somebody who is very good with words, or uses language extremely well?

Down
1. What is using imagination and artistry or original ideas to make or invent something called?
2. What is working together with others to achieve a common goal called?
3. What is an online magazine called?
4. What is another word for letting go?
6. What is a thought or inspiration to create or do something called?
7. What is it called when something is better than it was before?
8. What is a word that can be used in these sentences: I am _____ a goal. The teacher is _____ my essay
9. What is a word that describes a group of players forming one side in a competitive game or sport?
10. What are given to the winners of competitions?
11. What is a flat portable computer with a touchscreen display that is bigger than a smartphone but smaller than a laptop called?
13. What is a formal choice between two candidates or courses of action called, which is usually made through a ballot or a show of hands?

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 **ezine10@openuk.uk.** All entries are subject to our terms and conditions which you can read **https://openuk.uk/ezine-10-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

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20 YEARS
CONNECTING
THE UK
HUAWEI

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Open Technology, being Open Source Software, Open Hardware and Open Data, openuk.uk @openuk

OpenUK MiniMU INSTRUCTIONS
LESSON TEN

Ronan would like to create a team and enter an amazing competition. He needs one
more person to help him, and he's hoping you'll join. He's certain it's possible to come up
with a fab idea using all the coding skills we've been learning these last few weeks.

There is a fantastic poster that will help you to come up with ideas and turn them into
a new product prototype. Are you up for the challenge, do you want to join the team?
In today's lesson you will work through the steps in the poster to come up with ideas
for a project.

By doing this you will learn how to:
❑ look at a project brief and decide how to approach it;
❑ build a team by assigning team roles to everyone;
❑ use an ideation process to generate lots of ideas quickly;
❑ evaluate your ideas and sort them into order;
❑ select the best idea to take forward to the next stage.

You will use all your existing knowledge and experience about the micro:bit and the
MiniMU glove, to help guide your ideas for a glove.

You will also learn how open source communities collaborate together to build products.

You will need:
❑ your assembled MiniMU glove;
❑ an on-screen or printed version of our ideation poster;
❑ pens, paper, and some post-it notes or cut up paper;

Don't forget to have a list of your existing projects from the course to hand, they will
be really useful to inspire and guide the idea generation process.

Figure 1: The project brief.

Figure 2: Team Roles.

Figure 3: Word list.

Figure 4: Idea categories.

Figure 5: Idea Bank of new ideas generated.
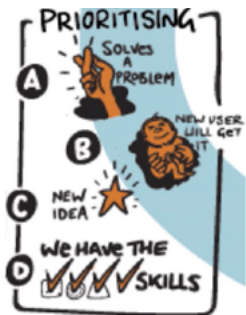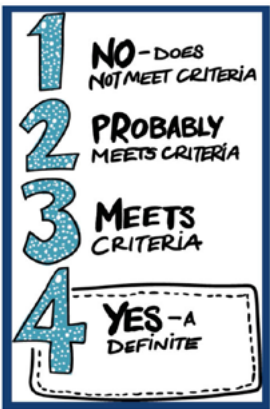

Figure 6: Evaluation criteria.

Figure 7: Scoring system.
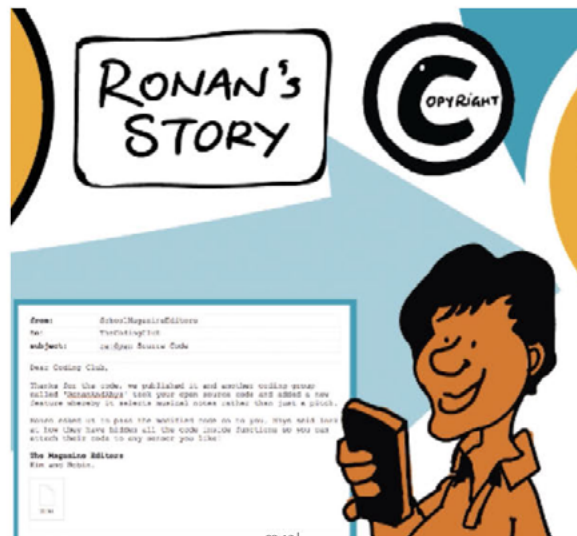
Figure 8: Sorting and selecting the best idea.

Figure 9: Incoming email!!!

from:	SchoolEzineEditors
to:	TheCodingClub
subject:	re:Open Source Code

Dear Coding Club,

Thanks for the code, we published it and another coding group led by 'Rhys' took your open source code and added a new feature whereby it selects musical notes rather than just a pitch.

Rhys has shared the modified code. He said look at how they have hidden all the code inside functions so you can attach their code to any sensor you like!
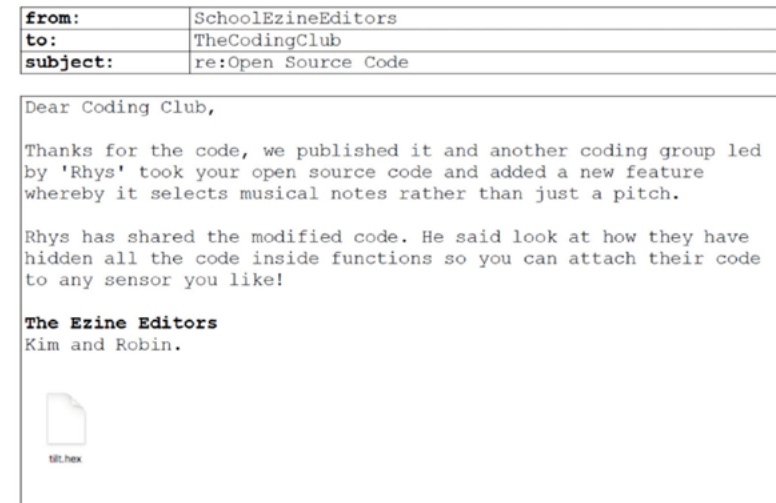
The Ezine Editors
Kim and Robin.

tilt.hex

Figure 10: Ronan receives an email from Rhys.

Figure 11: A library of useful functions from Rhys.
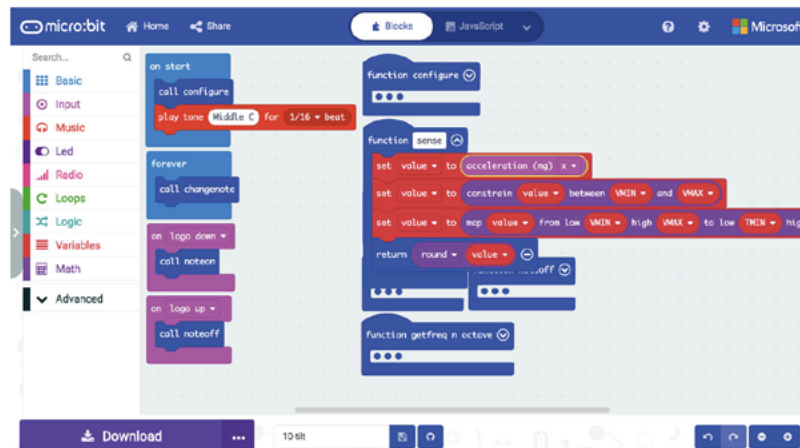
Figure 12: The 'configure' function has all the constants.

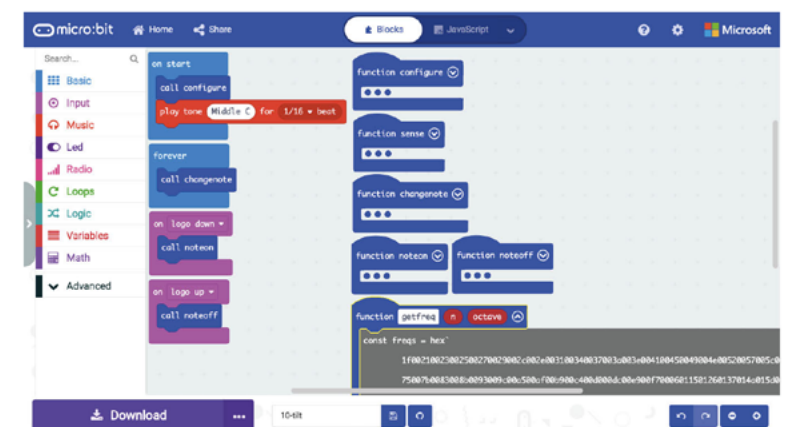Figure 13. The 'sense' function is just like from the Light Glove.

Figure 14. The 'get freq' has javascript inside it!!

Don't forget, the .hex file that Rhys sent us is downloadable from our website too – try it out, adapt it, share it back, be an open source hero!
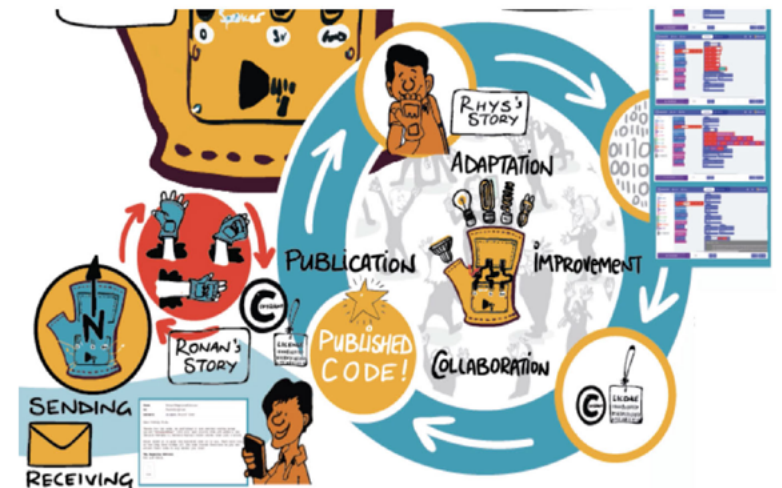

Figure 15. The circular cycle of Open Source Collaboration

Figure 16. Oh no! It's the end of the course!
* Does anyone know where Steph's mug is? She has lost it!

OpenUK

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GitHub   PIMORONI   MiMU   micro:bit

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* Original story and voiceover scripts designed by David Whale. Some team editing always takes place as part of the editorial process. Everyone contributes.

Additional Information

1. THE BRIEF
- ❑ Using the MiniMU Glove
- ❑ A creative idea
- ❑ Work collaboratively as a team

2. BUILD A TEAM WITH A PURPOSE!
- ❑ Look at the project brief
- ❑ Assign team roles
- ❑ Start with a word-list
- ❑ Use categories (music, wellbeing, communications, games)

3. ROLES
- ❑ Timekeeper – keeps track of time
- ❑ Wordsmith – shouts out the words
- ❑ Project Manager – keeps the team focused on the brief
- ❑ Scribe – writes down the ideas

4. IDEATION
- ❑ Timekeeper starts the clock
- ❑ Wordsmith shouts out words
- ❑ Team discusses, new ideas are generated
- ❑ Scribe writes down new ideas
- ❑ One idea per post-it note
- ❑ Project Manager keeps team on track
- ❑ Time up!

5. EVALUATION
- ❑ Assign scores
- ❑ Add up scores
- ❑ Sort post-it notes, in order of scores

6. SELECTION
- ❑ Choose the idea with the highest overall score
- ❑ Build a prototype
- ❑ If it turns out a bit hard, try next highest scoring idea

Worked example of scoring an idea