

# The wonders of STEM Ambassadors

Rachel Stacey – Staffordshire & Shropshire STEM Ambassador Hub

# STEM Ambassadors

STEM Ambassadors are volunteers from a wide range of science, technology, engineering and mathematics (STEM) related jobs and disciplines across the UK. They offer their time and enthusiasm to help bring STEM subjects to life and demonstrate the value of them in life and careers.

STEM Ambassadors are an important and exciting, free of charge resource for teachers and others engaging with young people inside and out of the classroom.

There are currently over **33,000** registered STEM Ambassadors in the UK, with approximately **3500** in the West Midlands, and around **800** in Staffordshire and Shropshire.

There are 19 STEM Ambassador Hubs supporting STEM Ambassadors, Employers and Schools across the UK.

[See STEM Ambassadors in action](#)



# What do STEM Ambassadors do?

- Support and inspire
- Provide tangible, local role models for young people
- Bring real world context to classroom learning
- Raise aspirations of young people
- Challenge stereotypes

# How?

- STEM Challenges and Digital Events (Local and National)
- Support STEM themed weeks taking part in virtual Q&As with teachers and students – space week, science week, digital skills week linked to Esafety,
- Supporting a STEM Club – short or long term
- Attending Hub led networking events (virtual and face to face)
- Participate in Virtual Careers Days and Stereotyping events
- Introduce a new topic and set a class challenge
- Make a STEM Ambassador OFFER to schools

# The impact of STEM Ambassadors



# Tim Chapman

## *Local STEM Ambassador*



STEM Learning operates the STEM Ambassador Hubs, the National STEM Learning Centre and Network, alongside other projects supporting STEM education [www.stem.org.uk](http://www.stem.org.uk)



# Tim Chapman



- Security Architect, Fujitsu Distinguished Engineer and STEM Ambassador
- Works in Fujitsu's Enterprise and Cyber Security Business delivering secure solutions to our customers
- Studied Business Information Technology at Staffordshire University
- Worked in IT for over 20 years and with Fujitsu for the last 16 years





TechUP  
women



**T-LEVELS**  
THE NEXT LEVEL QUALIFICATION

 **INSTITUTE FOR  
APPRENTICESHIPS**



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# Stewart Ward

## *Local STEM Ambassador*



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# STEM Ambassador Code Club Activities



Hi, I am Stewart Ward and  
I became a STEM Ambassador  
In order to inspire younger  
people to become interested  
in Information Technology,  
especially computer Programming.

The STEM Ambassador program has  
provided, free of charge, DBS checks  
and third party liability insurance to  
enable me to undertake the activities.







# Guidance and Encouragement

I have been a volunteer in a local school and a local library where myself and other volunteers have provided guidance and encouragement to children in the age range 7-13

We have used the materials provided by Code Club and also incorporated BBC Micro BIT and Raspberry PI into our activities.

# Teamwork

We encourage children to work in teams and share their ideas and skills with each other.

While running the Lichfield Library Club, We were offered a Saturday morning at a local community centre.

Here we undertook a more diverse range of activities with a wider age range.

We continued the library sessions on a weekday evening for younger members who were primarily using Scratch.







Scratch is very popular and it supports some complex programming ideas as well As being ideal for the complete beginner.



In 2018 and 2019, we took our Code Club on the road to the RAF Cosford Air Show.

Here we engaged with people of all ages and abilities. We also met with quite a few teachers who had not heard of the STEM Ambassador Program.

Thanks to Entrust, we had plenty of materials to give away to those that showed a keen interest in the program.







Support from my workplace, [TerraFix Ltd](#), also provided us with equipment, including a number of Raspberry Pi computers and BBC Micro BIT boards that we gave Away at the end of the day.





It was nice to see interest from all ages.  
This lady was thrilled to see a BBC B computer from the 1980's and went on to tell us that she had actually written an accounting package for it back in the 80's when she was a programmer.





While at RAF Cosford in 2019, we also had a number of Spacecraft Material kits on loan from Entrust.

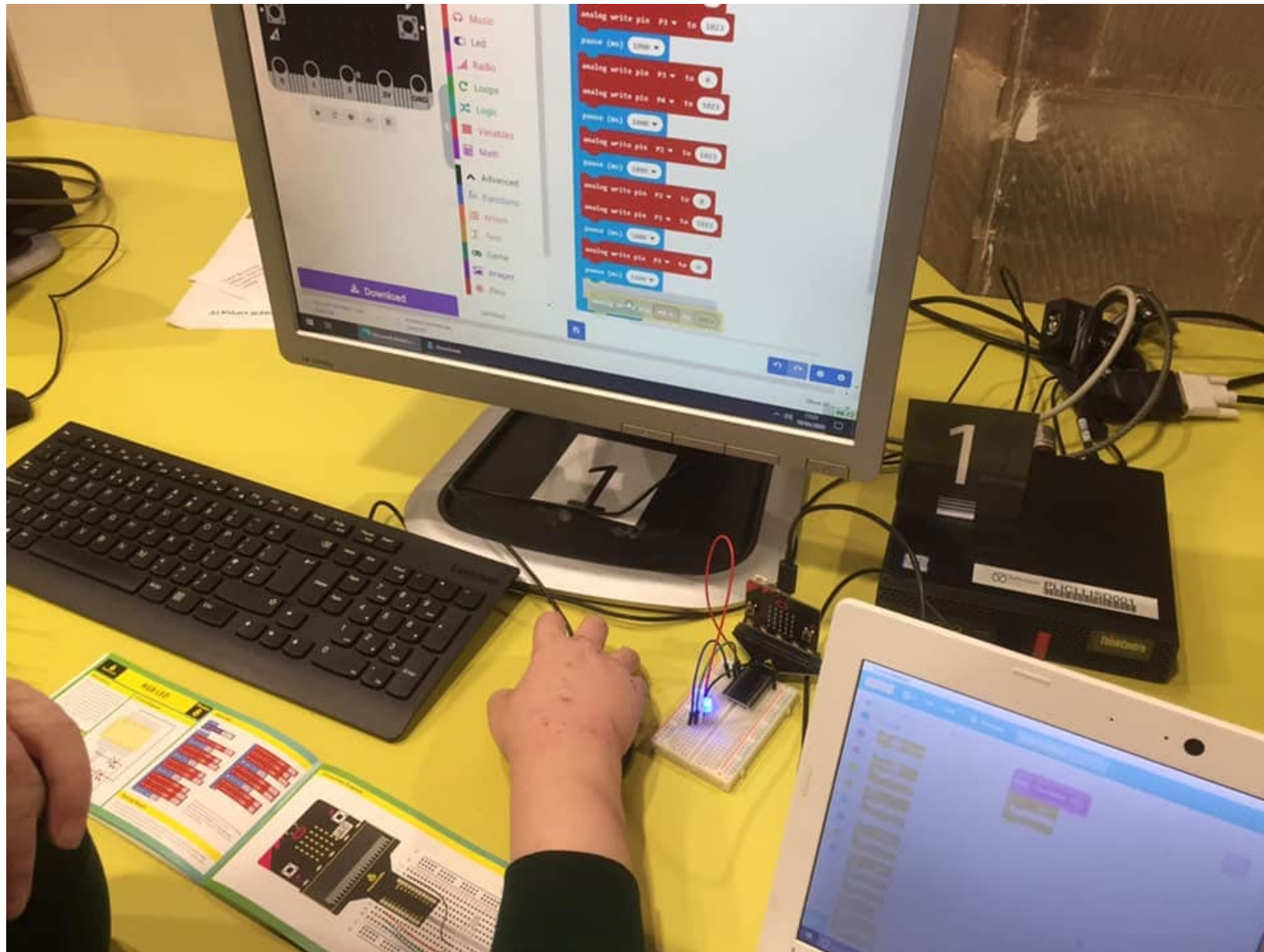
Although, not directly related to our coding activities, it did fit in With the space theme that year.

I believe Entrust have a number of other activity kits than can be Loaned to STEM Ambassadors.

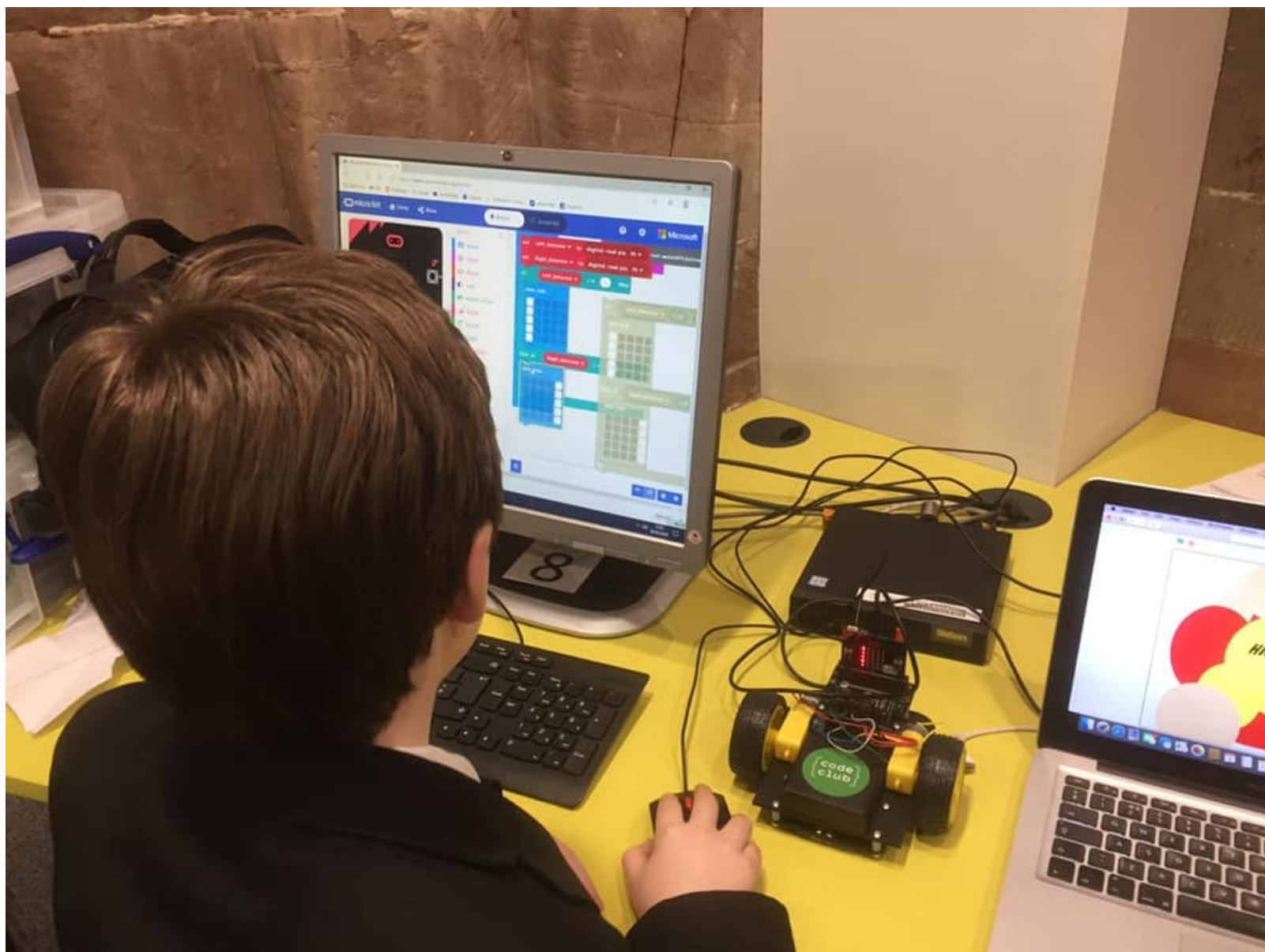


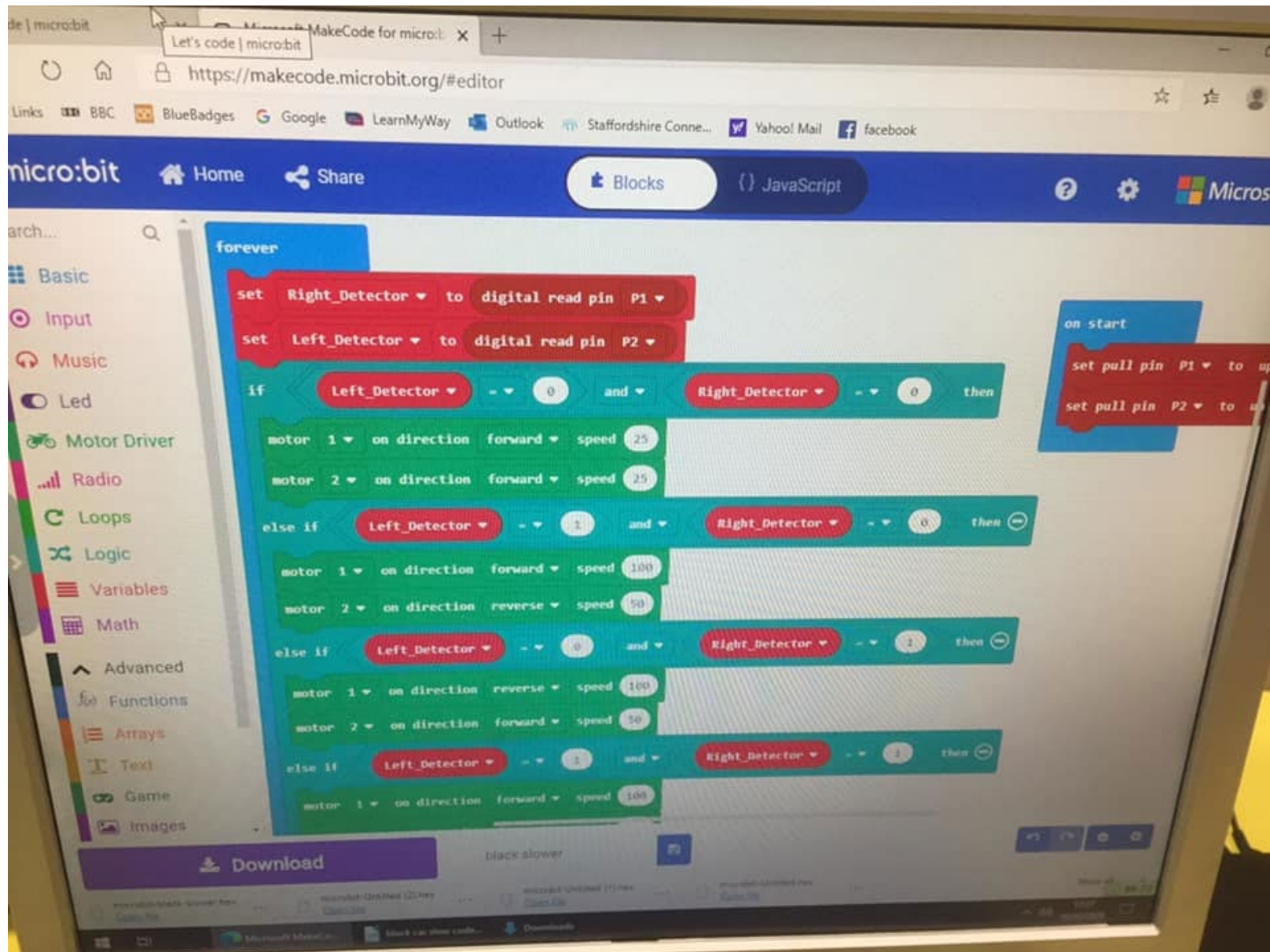


The use of the BBC Micro BIT and the Raspberry Pi computer has enabled us To introduce Real World Computing examples to young children.

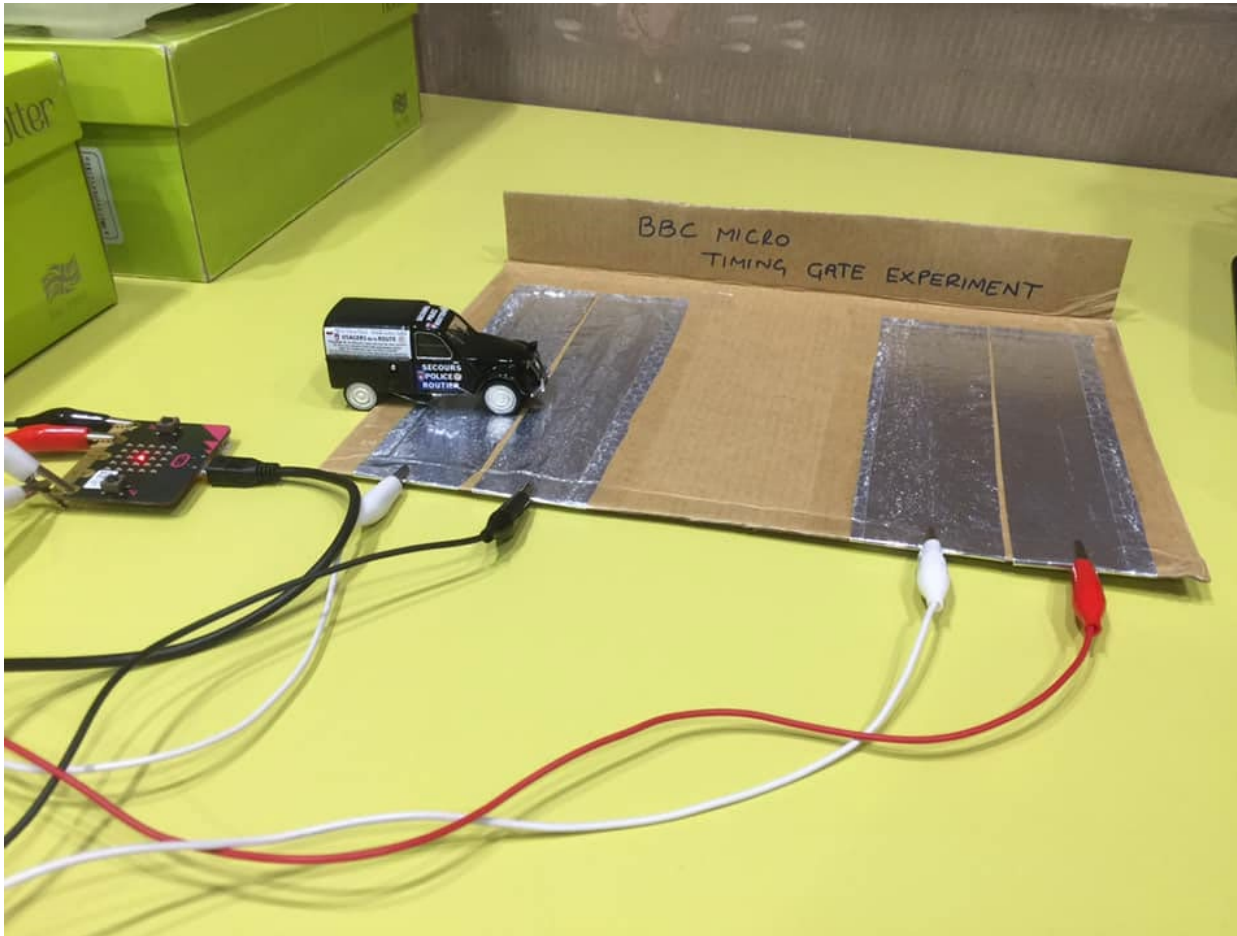












Our Timing Gate Experiment included lots of other valuable lessons including, electrical Safety and the math to calculate the speed of the car based on the distance and travel time.

Although we are using safe voltages here, it was important to brief the children on the potential dangers to themselves, and in this case the possibility of damage to the device by connecting the wires incorrectly.



# VEX IQ Robot

## Sponsored by Terrafix Ltd

Another piece of equipment provided by my employer. Very popular and great for demonstrating forward planning and design concepts.







A few years ago, we were lucky enough to receive a visit from Tim Wilson from the West Midlands Code Club.

Tim has been a great help supporting our activities.


Code Club provided us with lots of giveaways for our Cosford visits. Resulting in many more smiling faces!

# Covid 19 Challenges


2020 was a challenging year and we have taken some time to work on an online presence.

Lichfield Library and Curborough...+ Add a ButtonPromoteSearchMore

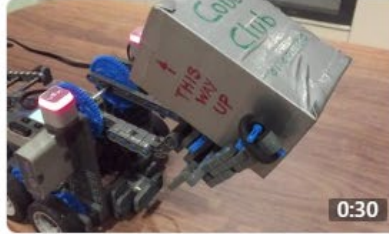
### All Videos




VEX IQ Robot Programming.  
a year ago · 36 views  
1




VEX IQ Robot Programming  
a year ago · 16 views  
1



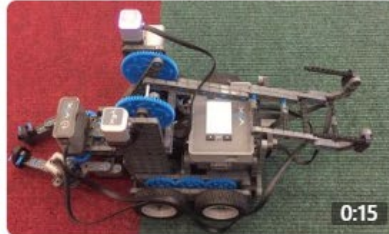
Code Club Robot programmed in Scratch.  
a year ago · 17 views




Code Club Activities  
a year ago · 22 views  
1




Scratch and the BBC MicroBit  
a year ago · 34 views  
3



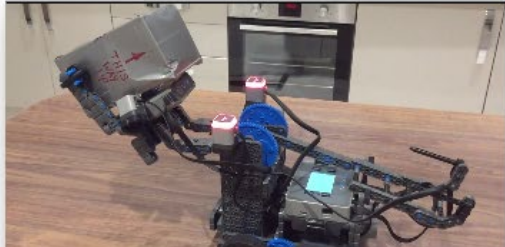
VEX IQ Robot Programming  
2 years ago · 19 views



Here is one of our coders games in

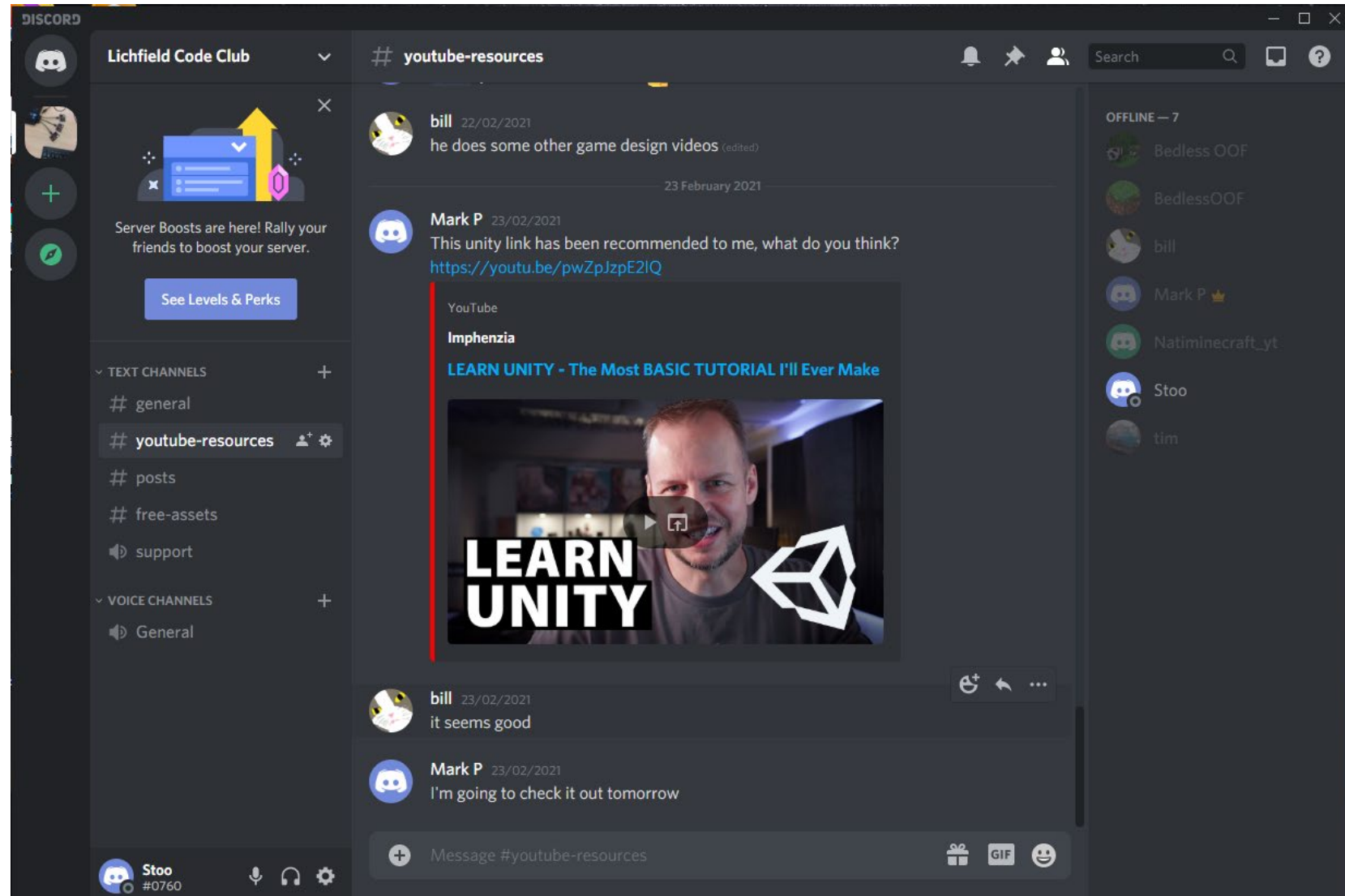


Here are some photos from our



# Remote Assistance

My fellow STEM Ambassador, Mark Pritchard has set up a Discord Server for the Club and a GIT Hub presence. Both of which are in use with a few of our young members.



# Git Hub – Software repository.

Git Hub provides a great Platform  
For collaborative projects and gives a  
great insight into the importance of  
Configuration Control and testing.

The screenshot shows the GitHub web interface for the repository `Lichfield-Code-Club / timing-game-by-bill-sebastian`. The top navigation bar includes the GitHub logo, a search bar, and links for Pull requests, Issues, Marketplace, and Explore. A green banner at the top of the repository page reads "Learn Git and GitHub without any code!" with a subtext "Using the Hello World guide, you'll start a branch, write comments, and open a pull request." and a "Read the guide" button. Below the banner, the repository name is displayed with icons for Watch (1), Star (0), and Fork (0). A horizontal menu contains links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The main content area shows a "Quick setup" section with options to "Set up in Desktop", "HTTPS", or "SSH" using the repository URL `https://github.com/Lichfield-Code-Club/timing-game-by-bill-sebastian.git`. It also includes a section for creating a new repository on the command line with a list of terminal commands.

Search or jump to... / Pull requests Issues Marketplace Explore

Learn Git and GitHub without any code!

Using the Hello World guide, you'll start a branch, write comments, and open a pull request.

Read the guide

Lichfield-Code-Club / timing-game-by-bill-sebastian

Watch 1 Star 0 Fork 0

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

Quick setup — if you've done this kind of thing before

Set up in Desktop or HTTPS SSH `https://github.com/Lichfield-Code-Club/timing-game-by-bill-sebastian.git`

Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

...or create a new repository on the command line

```
echo "# timing-game-by-bill-sebastian" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M master
git remote add origin https://github.com/Lichfield-Code-Club/timing-game-by-bill-sebastian.git
git push -u origin master
```





Thank you  
for listening and Happy Coding.





# **Gordon Taylor**

***Walton Priory Middle School,  
Stone***

# STEM Ambassadors

Gordon Taylor (STEM Technician)

Walton Priory Middle School, Stone, Staffordshire



# Walton Priory Middle School focusses on STEM Competitions

## School wins five national awards in a single year

CENTRAL | AWARDS | STEM | EDUCATION | Thursday 16 July 2020, 6:23pm



Students from Walton Priory Middle School collecting their prize fund.



The ERA  
Foundation

# ERA Foundation 2020 Engineering Teacher of the Year

“The ERA is delighted to announce that the **2020** David Clark Prize (Secondary) will go to Gordon Taylor (STEM Technician) from Walton Priory Middle School.

The **£8,000** prize recognises those that have gone beyond what is required in the teaching syllabus and have been able to demonstrate a strong track record of showcasing real-world engineering to students while inspiring them.





# Why do we do EXTRA Curricular STEM?

- ▶ STEM Club focus
- ▶ Independent learning
- ▶ Parental involvement
- ▶ Careers
- ▶ Local business support
- ▶ Certificates, trips, awards, cash!
- ▶ PUBLICITY!



# Winners





Our BEST  
STEM  
Ambassadors  
are...

SELF-  
CONTAINED



**Walton Priory** @WaltonPriory · Mar 21, 2019

Careers Day. Learning about Biopharmaceuticals and preventing pandemics!  
Thank you to Dr Saunders. [#Careers](#)



11







Our MOST  
USEFUL STEM  
Ambassadors...

Turn up every  
week!



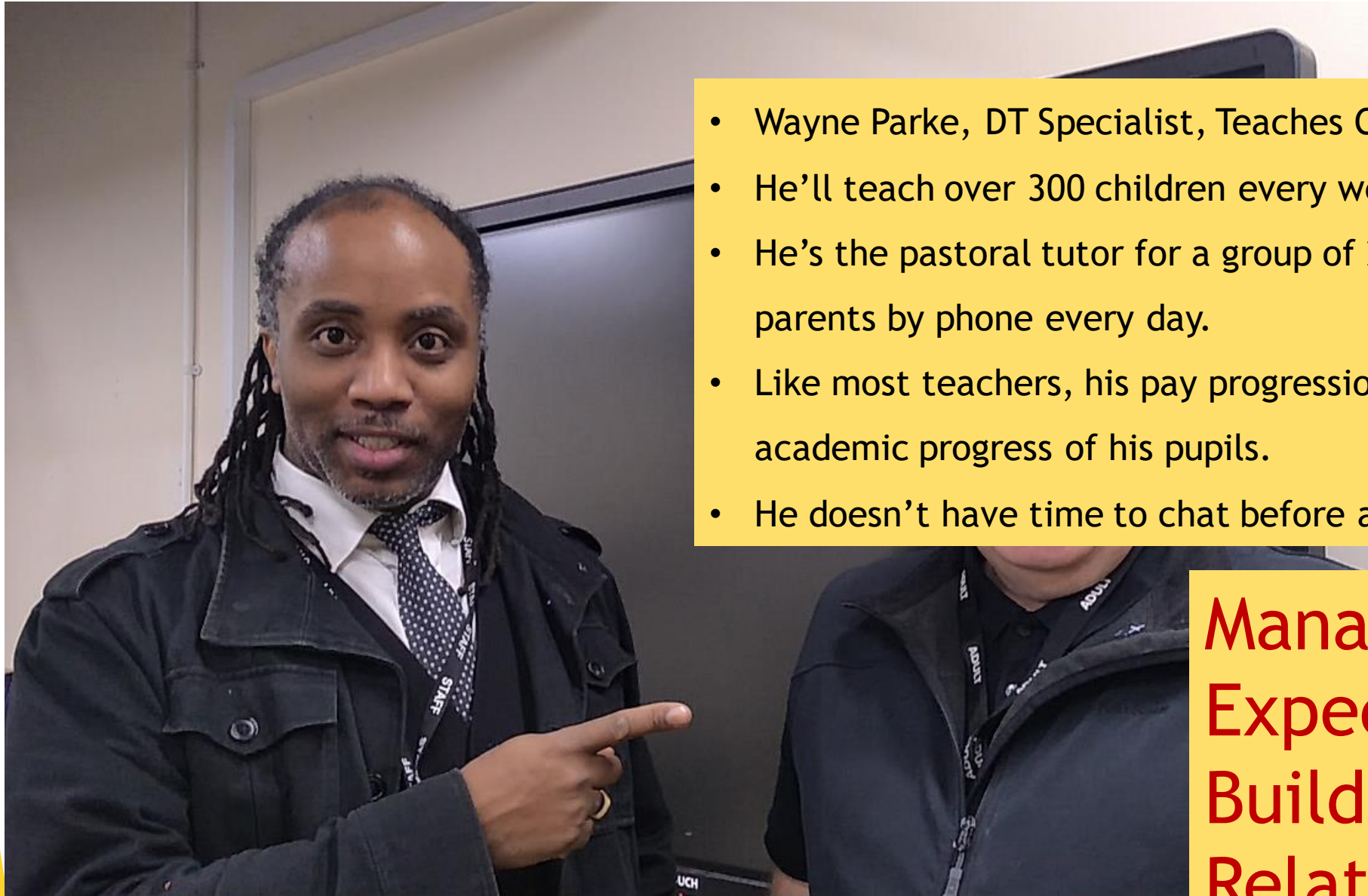


## Cautionary Tale



Managing  
Expectations,  
Building  
Relationships





- Wayne Parke, DT Specialist, Teaches Computing (also PE)
- He'll teach over 300 children every week.
- He's the pastoral tutor for a group of 26 and will talk to parents by phone every day.
- Like most teachers, his pay progression depends on the academic progress of his pupils.
- He doesn't have time to chat before a lesson or afterwards.

**Managing  
Expectations,  
Building  
Relationships**





Who can you work with?  
What's the gain?





# Summary



Email: [g.taylor@waltonpriory.staffs.sch.uk](mailto:g.taylor@waltonpriory.staffs.sch.uk)

Twitter: @WaltonPriory

Instagram: [waltonpriorymiddleschool](https://www.instagram.com/waltonpriorymiddleschool)



# Next Steps

We have made it simple to get involved. Your local STEM Ambassador Hub will support you with the process.

1. Register as an Ambassador at [www.stem.org.uk](http://www.stem.org.uk)
2. Complete an online induction
3. Complete an online DBS application
4. Add a photograph to your Ambassador profile
5. Become an approved Ambassador – you will receive an ID card
6. Find STEM volunteering opportunities via your employer or the STEM Ambassador website/ app and start volunteering.

## Contact details

Your local Hub is the **Staffordshire & Shropshire SAH**.

Programme Co-ordinator – Rachel Stacey

[stemambassadors@entrust-ed.co.uk](mailto:stemambassadors@entrust-ed.co.uk)

T. 0333 300 1900

## ID card



## Pin badge



## Digital Badges



## STEM Ambassadors Certificate of Achievement

This certificate is proudly presented to:

**[First Name] [Last Name]**

For giving

**over [number of hours] hours**

of volunteering time to support the STEM  
Ambassador programme

*Thank you for your amazing contribution to engage  
and inspire young people across the region*

Signed:   
**Claire Barker**  
Head of Service, Skills & Employability

Date: 07/01/2020



## Certificates



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