



Full STEM Ahead

The newsletter of the RAiSE Team Issue 6 April 2018

Check out the [Full STEM Ahead](#) site

Support and inspiration at a click of your mouse!

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Save the Date

[Fossil Hunters: Unearthing the Mystery of Life on Land](#)—23 Feb-22 Apr 2018 at Dumfries Museum

[Space: Fact or Fiction](#)—30 Mar-19 May 2018 at Annan Museum

[Dumfries & Galloway Science Festival Week](#)—16-21 Apr

[Big Bang Festival](#) —20 Apr at Easterbrook Hall, Dumfries

[Science Festival](#)—21 Apr at Easterbrook Hall, Dumfries

[National Digital Learning Week](#)—14-18 May 2018

[Dumfries & Galloway STEM Conference](#)—26 April at Dumfries & Galloway College

[Outdoor Classroom Day](#)—17 May

What's New Online

This month we have added links to the following pages to the Full STEM Ahead website:

Animation: [Pivot Animator](#)

Electricity: [littleBits](#)

Outdoor Learning: [John Muir Award](#)

Maths: [Doodle Maths](#)

Gender Balance: [Improving Gender Balance Scotland - An Action Guide for Primary Schools](#)

Other Useful Sites, Documents and Apps: [Teach Computing Science - a guide for Early Years and Primary Practitioners](#);

Coding: [Setting Up Teacher and Pupil Accounts for Code](#)

Craft, Design, Engineering & Graphics: [Royal Academy of Engineering](#); [Getting Started In Tinkercad](#); [Instructables](#)

Textiles: [Material World](#)

Science: [Science for a Successful Scotland](#)

CPD Coming Soon

The RAiSE Team will be offering a range of twilight training sessions in terms 4. Bookable now through CPD Directory:

17 Apr - Getting started with the BBC Micro:bit @ Annadale & Eskdale venue tbc

18 Apr - Getting started with the BBC Micro:bit @ Stewartry venue tbc

23 Apr - Getting started with the BBC Micro:bit @ Wigtownshire venue tbc

30 Apr - Getting started with the BBC Micro:bit @ Cargen Towers, Dumfries

Want to attend but the time or location doesn't suit? Want support with a different aspect of STEM? Get in touch with any member of the RAiSE Team who will be happy to discuss bespoke training for your and your colleagues.

Ice Cream Challenge

There's still time for your class to sign up to this year's Ice Cream Challenge.

Covering outcomes from Science, H&WB as well as Technology, pupils will discover how to make ice cream without any expensive equipment—just ice, salt and a couple of plastic bags. It's a lot of fun and the results can be pretty delicious too!

For more information contact Keith Walker (gw08walkerkeith@ea.dumgal.sch.uk).

As Featured on Yammer

Join our Yammer group, [D&G Full STEM Ahead](#), and find out more about:

- Young Engineers and Science Clubs Celebration of Learning event
- Outdoor Classroom Day resources
- Year of Engineering resources
- Outdoor Learning in Nature funding opportunity
- Books for budding engineers
- Polar Explorer programme
- Links to SSERC bulletins
- Engineering with Kapla

Plus links to great resources and ideas not featured here. Don't miss out—ask to join today!



[Subscribe to the Blog @ Full STEM Ahead](#)

D&G Science Festival

The RAiSE team will be having a stand at this year's Dumfries & Galloway Science Festival at the Easterbrook Hall, Dumfries on Saturday 21 April.

We have a couple of fun activities planned with a sunny holiday theme (well we hope it will be sunny by then!). First up is an experiment to investigate the effectiveness of sun creams and then we will be transporting visitors to their favourite holiday destination thanks to green screen technology.

The event runs from 12 noon to 5 pm and there will be lots to see and do. We hope you'll come and visit us.

Book Of The Month

Hello Ruby - Adventures in Coding by Linda Liukas, published by Feiwel & Friends, ISBN: 978-1250065001

"The world's most whimsical way to learn about computers, programming and technology"

Ruby is a mischievous 6 year old with a 'huge imagination'. In this book we meet Ruby and her father who is often away from home working and travelling. In his absence he leaves her a challenge - to find 5 gems - and through the story we discover how Ruby uses her imagination to locate the hidden gems. But it is much more than an engaging story book for young children (and possibly older ones!). It also contains an Activity Book full of exercises linked to the story that introduce children to the key concepts and skills of computing science and computational thinking.

Written for parents to work on together with their child, it's also ideal for use in the classroom at early and first level. Indeed it has been recommended by some countries as part of their computing science curriculum, and their lessons plans are free to download on the associated website, www.helloruby.com. The website also contains a range of additional activities to support Adventures in Coding and the second book in the series, Journey Inside the Computer; as well as printables to support the activities in the book.

Author, Linda Liukas, is an inspiration. Digital Champion of Finland, she left her job with Codecademy to work on *Hello Ruby* - which she funded using Kickstarter. She is the founder of Rails Girls which teaches programming to young women everywhere. She also believes that code will be the 21st century literacy, and that we all need to learn the ABCs of programming. Find out more about her and why she was inspired to write *Hello Ruby* in this [TEDTalk](#).

I'd say this book is definitely worth getting if you are teaching infants and are looking for ways to deliver the Computing Science Es&Os at Early and First level. The illustrations are bright and fun, and while it encourages children to *think* like a computer you don't actually need to use a computer - so you don't spend half of your precious computer slot trying to get logged in. At just under £10 on Amazon for a hardback book, it's great value.

If you do just one thing this month ...

... take a look at the resources available from the Royal Society of Chemistry. Our favourites are:

[Resources aligned to CfE](#) - they have identified the Ex&Os that are relevant to Chemistry at Early to Second level, and linked them to the most appropriate resources from [Learn Chemistry](#) for you to use with your class.

[Top Trumps: Elements](#) - a fun way to learn about the elements with eye-catching images and fun facts. Packs cost £6 each but they provide a free [Top Trumps Primary Support Pack](#) and [Top Trumps Secondary Support Pack](#).

[Science Ideas Web Resources](#) - ideas for teaching science (not just chemistry) through popular IDL topics, such as The Vikings, World War II, Ancient Egypt, The Victorians, Space, and more. Each topic has a different web for Early, First and Second level.

[Mission Starlight](#) - Sanquhar Academy have joined 500 schools across the world to take part in this year's RSC global experiment - and you could too. Suitable for primary and secondary pupils, there are 4 investigations to find out what are the best materials to protect astronauts from damaging UV light. Once complete, you can upload the results of your investigations. Great if you are doing a space topic, or, with summer approaching, to make pupils more aware of the risks of UV light.

There's a lot more to explore, including CPD opportunities for you, so visit the site today.

"Too often we give children answers to remember, rather than problems to solve."

Roger Lewin, Anthropologist



Ruby is helping Brownhall P1/2s learn about computers

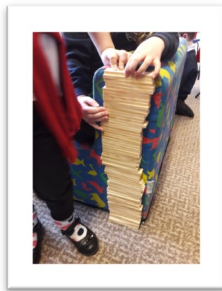
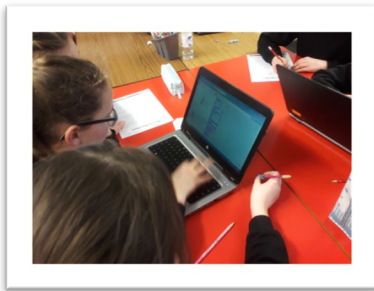
School Showcase

The infant class at Brownhall Primary School enjoyed their success at a coding workshop with Mrs. Moyes last term. Pupils worked collaboratively, and had great fun solving problems at code.org.

Also, our book of the month, "Hello Ruby – Adventures in Coding", and "Hello Ruby – Journey inside the Computer" (texts written by Linda Liukas) are being used to enhance computational thinking in Primary 1/2 at Brownhall Primary School. We are recreating Ruby's journey and meeting all her friends from the story along the way. The pupils have been making their own computers and writing helpful algorithms for Ruby. The highlight has been a classroom visit from the real Ruby!!

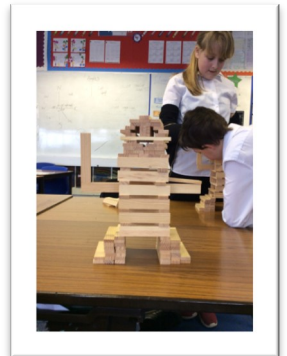
Carolyn Scott and the P4/5s at Heathhall Primary, came up with a clever way to cover a number of benchmarks, including 'selects and use applications and software to capture, create and modify text, images, sound and video (TCH2-01a)' by using Paint.

Carolyn says: 'The children researched the battle and we looked at a famous painting done after the battle using Jacobite prisoners for authenticity! They then drew straws to find out if they were going to be a Jacobite or a Redcoat soldier. They had already found out what sort of things each side used and the weapons they would have used. They posed in their battle positions for a photograph. Next they had to use the "Paint" programme to draw over their photograph to transform themselves into a character from the battle. After two sessions they were ready to save into the shared folder so they could be printed out in colour ready for our display!'



Gary Anderson at Penningham Primary, has been doing all sorts of interesting STEM activities with his classes. P7s have been making mazes with Scratch. P1 have been measuring and bridge building with Kapla blocks. While P1 to P4 pupils also made bridges, this time with lollipop sticks and glue.

Penningham isn't the only school to have discovered the potential of Kapla. Greg Clark at Lochside Primary challenged his P6/7A class to make a Kaplaman as part of their problem solving. They did a great job!



Craig Dolderson's P3/4 class at Gretna Primary have been exploring how computer technologies have changed using a compact Mac. They loved the auto-eject 3.5" floppy drive...but were less impressed with the slow boot time and 9" monochrome display! They have also been investigating what was inside a PowerMac G4 to help them understand the key components of a computer.



And, still at Gretna, Shellene Martin's P6 class made catapults, tested them, evaluated and tested again. They also learned about potential and kinetic energy. What a great way to spend a Friday afternoon!



Finally, we have a couple of fantastic videos that have been shared with us.

Natalie Lillie at Carrutherston Primary has been introducing her class to Lego WeDo and shared a video of their reactions on our Yammer feed. Search for 'WeDo' at the top of the page.

And Lisa Brown at Calside Primary challenged her class to create a model of a Chinese landmark. Take a look at what one of her pupils came up with: <https://youtu.be/YiZeTXT6H3s>

Are you running an afterschool club, have entered a competition or just have some excellent STEM curricular work? Have it showcased in the monthly Full STEM Ahead Round Up.

We know that celebrating success across the region is key in raising attainment and showcasing good STEM practice. If you have a piece of work or activity you would like us to share with fellow learners and practitioners across Dumfries and Galloway, then send a photograph and short description (no more than 150 words) to gw08moyescarol@ea.dumgal.sch.uk and look out for yourself in next month's issue!

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US

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