

# Primary Conference

for Science, Technology, Engineering and Maths

8<sup>th</sup> - 12<sup>th</sup> November 2021

## Inspire and Engage

### Only £100 per school

*A saving of over £170 based on individual course fees.*

An integrated offer from a variety of organisations:  
STEM Learning partners, The National Centre for  
Computing Education, The Maths Hub and the Royal  
Academy of Engineering:

- Keynote speaker Paul Chambers; Combining Primary Physics with critical research-led pedagogy
- An introduction to programming
- Practical strategies for teaching science to learners with SEND
- Outdoor Learning – please note this course is face to face at a choice of 3 venues in Yorkshire and Lancashire / Cumbria
- Linking science with maths
- Using Maths Mastery teaching to progress following lockdown
- Primary Engineering
- Working scientifically
- Linking science with English
- Assessment in science
- Science and the new EYFS framework

For further details and to book please go to:

<https://bit.ly/primary-conference>



**KEYNOTE  
SPEAKER**



**Paul Chambers**

Combining Primary Physics  
with critical research-led  
pedagogy

## KEYNOTE SPEAKER

### Paul Chambers

Paul Chambers has 20 years of committed service to the development of physics and science education and teaching in Scotland.

He's been responsible for training physics teachers at Jordanhill School and subsequently the University of Strathclyde since 1999.



Throughout this time he has engaged with research, not least in relation to misconceptions in physics, to help his students – Scotland's future teachers – to develop into critical research-led teachers.

Chambers has aimed to develop future teachers not only as teachers of their subject but as educators.

Not satisfied to accept the current way of doing things, his personal scholarship has led him to develop methods of explaining energy and electricity to young people, and he has used these in his university teaching to develop the workforce.

His work to develop teaching in physics at primary school level is particularly significant. He trains primary teaching students in order to give them the confidence to deliver stronger lessons in situ, but also brings schools to the university to expand the reach of this exercise.

His international work has also extended to Malawi, where he wrote a report on widening access to science for girls on behalf of the British Council.

Chambers has written over 20 textbooks across physics and general science ensuring that his expertise is disseminated with the widest reach and he has been a consultant for BBC Bitesize.

He is currently developing new models for teaching of higher concepts including practical work for particle accelerators.



For further details and to book please go to:  
[www.northernlightstsa.org/primary-conference](http://www.northernlightstsa.org/primary-conference)

# PRIMARY STEM CONFERENCE | Timetable

Time	Mon 8 <sup>th</sup> November ONLINE	Tue 9 <sup>th</sup> November FACE-TO-FACE/ ONLINE	Wed 10 <sup>th</sup> November ONLINE	Thu 11 <sup>th</sup> November ONLINE	Friday Times	Fri 12 <sup>th</sup> November ONLINE
<b>Session 1</b> 2.30-3.30pm	<i>Keynote Speaker Paul Chambers - Combining Primary Physics with critical research-led pedagogy</i>	<b>FACE-TO-FACE</b> <i>Outdoor Learning</i>	<i>Linking Science with Maths</i>	<i>Working scientifically (under constraints)</i>	<b>1.00-2.00pm</b>	<i>Assessment in Science</i>
<b>Session 2</b> 3.30-4.30pm	<i>Unplugged Learning, an introduction to programming</i>		<i>Using Math Mastery teaching to progress following lockdown</i>			
<b>Session 3</b> 4.30-5.30pm	<i>Practical strategies for teaching science to learners with special needs in science lessons</i>	<b>ONLINE</b> <i>The Next Generation starts here: Linking teaching to careers.</i>	<i>Primary Engineering</i>	<i>Linking Science with English</i>	<b>3.30-4.30pm</b>	



# PRIMARY Conference Session Details

Monday 8<sup>th</sup> November

ONLINE

## SESSION 1: 2.30-3.30PM

### Keynote: Combining Primary Physics with critical research-led pedagogy

**Details:** 'Paul Chambers received the Marie Curie-Sklodowska Prize for his long service to the shaping of physics and science education in Scotland through training teachers to engage in critical research-led pedagogy and practical teaching.'

[- 2020 Marie Curie-Sklodowska Medal and Prize | Institute of Physics \(iop.org\)](#)

Paul will look at how Scotland supports primary science in initial teacher education and more widely with the SSERC primary science programme. (SSERC is the Scottish equivalent of CLEAPPs, and he is an accredited provider of primary science CPD through them.)

In the session, he will exemplify how to combine teaching with research by showing how to teach electrostatic attraction and repulsion with simple materials; and how he and his colleagues have used these and other simple experiments to make a play-based science scheme of work which also builds teacher confidence in that area.

This also leads to use of correct terminology and simplified explanations which stop misconceptions.

## SESSION 2: 3.30-4.30PM

### National Centre for Computing Education, NCCE - Unplugged Learning, an introduction to programming

**Details:** Helen will talk about getting over that first hurdle - what is computing and what are teachers expected to be teaching? Programming always tends to be an area that many feel very wary of, so she will introduce teachers to 'unplugged' learning, as she feels this helps to break down that 'brick wall' that can quickly build up when we do not feel confident

## SESSION 3: 4.30-5.30PM

### Practical strategies for teaching science to learners with special needs in science lessons

**Details:** This workshop is intended to give teachers and teaching assistants strategies they can put into action straight away to help learners with SEND in their lessons. Rob Butler picks some of the most transformative strategies from 20 years of teaching learners with special needs.

Tuesday 9<sup>th</sup> November

FACE-TO-FACE / ONLINE

## SESSION 1 & 2: 2.30-4.30PM

### Outdoor Learning (2 hours at a choice of 3 venues in Yorkshire and Lancashire/Cumbria)

This face-to-face learning session is suitable for Science Subject Leaders and anyone who teaches science. The session will cover the following:

- Explore the characteristics of effective outdoor learning,
- Gain a brief overview of Forest School,
- Discuss health and safety in the outdoor setting,
- Make links between Working Scientifically curriculum objectives and Outdoor Learning,
- Explore how Subject Knowledge curriculum objectives can be taught in the outdoor setting,
- Consider assessment in the outdoor setting

## SESSION 3: 4.30-5.30PM

### STEM Ambassadors: The Next Generation starts here: Linking teaching to careers.

What do your pupils want to do when they grow up? Do they realise that they will need everything you are teaching them now?

In this session we will be exploring how you can help your pupils start to understand the amazing range of careers available to them, and how to link your teaching to those opportunities so that pupils can see the relevance and importance of the science and maths they are learning.

We'll see how you can meet enthusiastic, local STEM Ambassadors who can support your school with high quality talks, workshops and more and how you can make sure that these interactions make the most impact.

**SESSION 1: 2.30-3.30PM****Linking Science and Maths:**

This remote learning session is suitable for primary teachers and subject leaders. It will provide examples and resources on how science topics can support maths teaching across the primary curriculum.

**SESSION 2: 3.30-4.30PM****Yorkshire & Humber Maths Hub – Using Math Mastery teaching to progress following lockdown:**

This virtual workshop will be delivered by a Primary Mastery Specialist and is suitable for subject leaders and teachers. It will help teachers to get ready to progress and catch up through teaching for mastery following the Covid pandemic.

**SESSION 3: 4.30-5.30PM****Royal Academy Of Engineering - Primary Engineering:**

The session is an introduction to the Royal Academy Of Engineering Connecting Teachers Programme.

- a. Introduction to programme
- b. Student Digital Badges
- c. Best bits - a look back at the best RAEng challenges from the past twelve months.
- d. Sneak peek at the next resource pack and how to get hold of it.

**SESSION 1 & 2: 2.30-4.30PM****Working scientifically (under constraints) (2 hours)**

This remote session is suitable for Science Subject Leaders and anyone who teaches science.

It will develop your understanding of the five types of enquiry, explore how to raise the profile of the five types of enquiry in schools and explore resources and strategies that can help to develop pupil independence, questioning, and Working Scientifically skills, especially under Covid restrictions.

**SESSION 3: 4.30-5.30PM****Linking Science and English**

This remote learning session will explore meaningful links between science and Literacy. It is suitable for primary teachers and subject leaders. It will provide examples and resources on how science topics can support the teaching of Speaking and Listening, Reading, and Writing across the primary curriculum.

**SESSION 1 & 2: 1.00-3.00PM****Assessment (2 hours)**

This remote learning session will take a look at a range of formative and summative assessment strategies and how these could be applied across the primary age range. We will also reflect on what assessment data teachers should be gathering and why.

**SESSION 3: 3.30-4.30PM****EYFS (1 hour)**

This remote learning session will look at the place of science within the new EYFS framework and share a range of activities to support young learners in developing their scientific skills, knowledge, and vocabulary.