

Mathematics,  
Science and Geography

Residential Summer School

June 2015, Homerton College, Cambridge





CLARENCE HOUSE

I could not be more delighted to welcome you to another of my Institute's Residential Summer Schools. It has been so encouraging to read the wonderful testimony from the thousands of teachers who have preceded you on this endeavour over the past thirteen years and I very much hope that you, like them, will embrace the opportunity to step back from everyday pressures and to reflect upon the nature of your subjects and their importance.

Science and Mathematics are, of course, closely related subjects essential to our understanding of the world around us. Only by careful and sympathetic observation of the natural environment – the scientific principles and the numerical patterns – can we fully appreciate the laws that underpin it and, as a consequence, have a chance of maintaining the harmony which is crucial to the wellbeing of our own and future generations.

The theme of the Geography course is 'Futures', which seems to me to be of the utmost importance. For, despite the best efforts of those who have tried to encourage the necessary actions to protect the futures of our grandchildren, it is most likely today's children who will have to solve tomorrow's problems; such as finding the key to genuine sustainable development, resolving the immense challenges posed by a deadly combination of rapid population growth, resource depletion, biodiversity and ecosystem loss and negotiating the delicate geopolitics of the polar regions.

I trust that this Summer School, as with the ones that have gone before it, will offer absorbing lectures, stimulating debate and the reassuring company of like-minded professional colleagues. My hope is that it will also stimulate your thoughts about teaching your pupils in the fullest sense; not just helping them to get through their exams, but planting the seeds of wisdom and a love of your subject in their minds and hearts.

*Charles*

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## Welcome from the Course Director

I am delighted to welcome you to this Prince's Teaching Institute Residential Summer School. Every year since the first pilot in 2002, these courses have provided an opportunity for teachers to stand back and reflect on the nature of their subjects, on what is most important in the teaching of them, and how they can improve their teaching so as to inspire the next generation of schoolchildren. The teachers themselves tell us that such opportunities are rare in their professional lives and all the more welcome for that.

The PTI courses traditionally place an emphasis on academic content and we have, as usual, included in this year's programme a number of seminars, presentations and lectures by speakers eminent in their various fields to enable you to discuss subject issues in depth with academics and experts.

In the workshop sessions our aim is to offer you a chance to discuss your work with colleagues and to explore some of the more difficult aspects of subject delivery: what parts of our subjects should we be teaching and why, and what are the best ways of doing so? To ensure that these discussions do not remain just at the theoretical level but lead to effective action in the classroom, we shall be introducing you to the PTI Schools Programme which is designed to ensure that your departmental planning is centred on inspiration and enrichment.

At the end of every residential course we have presented our findings to a panel of educationalists from a variety of backgrounds. This provides an opportunity not only for them to hear what the teachers are thinking, but also for delegates from different disciplines to listen to each other and perhaps find the reassurance of common ground. We do hope that this session will generate an active debate about aspects of education in your subject that concern you, even indeed a consensus that we can then feed through to policymakers.

The most powerful effect of the PTI courses to date has been that teachers have gone back to their schools feeling it is within their power to change their classroom approach; to put scholarship and a delight in their subjects at the heart of their teaching. For example, one teacher writes, *"This course has given me back my belief in myself and reawakened my passion for my subject. It has also taught me that I am empowered and that I can"*.

I look forward to meeting you all in Cambridge this year. We have designed a course that I am sure you will find both stimulating and challenging, and I hope you will return to your classrooms inspired to share your experiences with your pupils and your colleagues.

A handwritten signature in black ink that reads "Bernice McCabe". The signature is written in a cursive, flowing style.

Bernice McCabe  
June 2015

“life-enhancing”

“inspirational”



## Course background

The Prince of Wales' long standing concern about the teaching of English Literature and History was the driving force behind the creation of his first Education Summer School in 2002. Its principal aim was to inspire, invigorate and empower teachers of those subjects. The evident success of the initiative led to the Summer School becoming an annual event. After five years, sufficient momentum had built up to justify expansion. The Prince's Teaching Institute came into being and with it the Schools Programme which encouraged more challenging departmental objectives. In succeeding years additional subject streams were created: Science in 2007, Geography a year later, Mathematics (2009), Modern Foreign Languages (2011), Creative Arts (2012) and Latin (2013).

## Knowledge and skills

Now in their 13th year, these short but intense courses have provided teachers from all over the country with (to use their words) “life-enhancing” and “inspirational” opportunities to discuss their subjects with professional colleagues, leading academics, and those concerned with directing national education policy. The discussions in previous Summer Schools and Autumn Residentials have focused on the educational importance of particular subjects, the aspects of them that could or should be taught at different levels and the best ways for teachers to meet the challenge of doing so effectively.

One of the abiding tensions in education is that between the teaching of knowledge and the teaching of skills. Employers tend to stress the importance of acquiring skills and competences, academics are more interested in the transmission of knowledge. There is of course a balance to be struck and the two should be complementary. The exact balancing point is likely to vary according to particular circumstances and conditions.

The PTI sees the importance of subject knowledge as fundamental. Skills cannot be taught in a vacuum and without knowledge there can be no understanding of the concepts which are the building blocks of mental development. Furthermore, we are part of a cultural continuum; each generation has to build upon what has been learnt, achieved and handed down by previous generations.

This view of education is reflected in the revised framework of the national curriculum. Its principal aim is stated thus: *“The national curriculum provides pupils with an introduction to the core knowledge that they need to be educated citizens. It introduces pupils to the best that has been thought and said, and helps engender an appreciation of human creativity and achievement.”*

## Science, Mathematics and Geography

Science encompasses a wealth of world-changing discoveries and insights, to which every child is entitled to be introduced. Teachers of Science must also be able to provide the detailed and up-to-date knowledge of the subject on which further scientific progress essentially depends. Scientific study requires too a knowledge of mathematics and there is concern among scientific bodies about the inability of even the most promising pupils to perform simple numerical calculations in handling Science questions.

Mathematics is of course an important and endlessly fascinating subject in its own right, with applications ranging from the everyday and practical to the highest levels of abstract thought. It also presents a wide range of challenge for the teacher, when some pupils struggle with simple computations and others seem to have an instinctive understanding of every new topic. Teachers have to find ways to excite the interest of all their pupils and give them the undoubted satisfaction to be derived from mastering an application or solving a problem, whatever the level.

While Science and Mathematics are both core subjects, Geography is not. Many will argue strongly that it should be. Its subject matter encompasses the whole earth and those who live on it; nothing is more important than that we should acquire a critical understanding of the causes and implications of such global phenomena as climate change, the growth and movement of populations and the development of resources. The very future of the planet depends on it.

For all these subjects, whether it is a matter of attracting more pupils to study them at a higher level, or giving them a better understanding of the concepts involved, good teaching is the key: teaching that stimulates the interest, excites and inspires. Delegates attending this Summer School will all have their own ideas about how to achieve this, and the PTI is happy to provide the opportunity for them to learn from each other.

## Examination and assessment

Examination and assessment are essential elements in any formal process of education, and they should also encourage good learning. But there has been a widespread and strongly held belief amongst teachers who have attended previous PTI courses that there should be more incentive for teachers trying to develop in their pupils a full appreciation of the richness of their subject, and a closer correlation between the aspirational value of that subject and the way it is examined. Teachers should never feel they have to inhibit their teaching because of testing requirements, but there is little doubt that the combination of league tables and commercially competing exam boards has tended to encourage teaching to the test and the choice of subjects that are perceived as easier. While this may have been aimed at improving test results, it will have had a distorting effect on the education of some children, leaving them unprepared for higher education and employment.

Finding the right solution to this problem is a major challenge. The Chairman of the Parliamentary Education Select Committee has, quite properly, said that *"no sensible reform of assessment can take place without clarity as to what is to be taught"*. In other words, curricular reform has to be agreed before making decisions about how it is examined. That is an encouragement to our delegates here to consider the two things together.



## The aims of the PTI

The Prince's Teaching Institute believes that all pupils, whatever their background or ability, are entitled to be taught by passionate and knowledgeable teachers. We reconnect teachers with their specialist subject, engage them with leading academics and encourage more rigorous and challenging subject teaching in schools. We demonstrate how children can be inspired, and achieve higher standards, by teaching that goes beyond the constraints of exam syllabuses and by rich subject provision that incorporates extra-curricular activities. We also provide an additional pathway of communication between teachers, higher education and government agencies.

Our aims are to:

- Encourage and inspire teachers by demonstrating good use of academic rigour and challenge in the classroom
- Create an inspirational forum for teachers, enabling them to step away from the classroom and rediscover their love of their subject
- Promote the idea that subject knowledge, subject rigour and the enthusiasm for communicating them are essential requirements for effective teaching to children of all abilities
- Promote and provide subject-based continuing professional development for teachers
- Create stronger links between academic departments in schools and universities
- Promote and enable a more constructive dialogue between teachers and government educational agencies on issues relating to curriculum development, assessment and training
- Promote the establishment of a national body, independent of government, that will enhance effective subject teaching and uphold teachers' professional standards

The PTI was created in 2006, and works in partnership with the University of Cambridge. It grew out of The Prince of Wales Education Summer Schools which, every year since 2002, have provided opportunities for teachers to come together to debate, and where necessary challenge, teaching approaches to their subject.

## The aims of the course

To explore the nature and purposes of Geography, Mathematics and Science teaching, specifically by:

- Providing an inspirational forum for leading teachers to discuss the importance and central role of Geography, Mathematics and Natural Sciences in the school curriculum
- Promoting an understanding of the nature and scope of Geography, Mathematics and the Sciences, and of the combination of comprehension, technical and practical expertise and logical reasoning necessary for the successful pursuit of these disciplines
- Facilitating the sharing of good practice in teaching these subjects at secondary level, to make learning them a stimulating, challenging and engaging experience for pupils of all abilities
- Considering approaches that will stretch and challenge pupils and give them the confidence to apply the knowledge and skills required in our increasingly complex and demanding society
- Encouraging leading teachers to reflect on both curricular and extra-curricular Geography, Mathematics and Science provision in their schools, planning for focused developments to improve engagement and raise standards of achievement



## The objectives of the course

To re-inspire teachers to teach Mathematics, Science and Geography in a more rigorous, ambitious and creative way, and to influence their colleagues in doing the same.

## Geography

- To consider why we teach Geography: what the subject contributes to education in a wider sense and why it should be part of a 21st century curriculum for young people
- To discuss what is important in Geography teaching in Key Stages 3-5
- To discuss which elements of Geography we should teach in order to make the subject exciting, rigorous and engaging, and to consider what is the importance of fieldwork and outdoor learning in bringing this about
- To share ideas about how Geography should be taught, and which teaching strategies inspire, excite and are most effective

## Science

- To share best practice and engage in supportive, constructive discussion with colleagues about the work of their discipline
- To plan for developing some innovative curricular and extra-curricular activities with ideas that work, ready to take straight back to school
- To experience some exciting examples of current developments in the Sciences, through speaker presentations and a visit to research laboratories in Cambridge, which can be used to bring Science teaching to life
- To reflect on the key role of the wider 'STEM agenda' (Science, Technology, Engineering and Mathematics) in effective provision for the future
- To free the spirit of enquiry to build the confidence of teachers and students alike in the value of an ambitious Science programme in schools

## Mathematics

- To promote self-confidence in teachers to present curriculum ideas in a more flexible, creative and mathematically rigorous way
- To share and refine ideas for challenging, exciting and sustainable developments in the Mathematics programmes at their schools
- To consider applications of mathematics, such as climate prediction and cryptology; to look at the links between Mathematics and other subjects, for example Architecture
- To promote greater challenge for both teachers and students in the classroom, and give students a better understanding of mathematical reasoning

# Schedule

TIME	MATHEMATICS	SCIENCE	GEOGRAPHY
0900-1000	Registration		
1000-1025	<b>Course welcome</b> <b>Bernice McCabe, Course Director</b>		
1025-1125	<b>Keynote address</b> <i>Biostatistician behind bars: By design and on trial</i> <b>Professor Sheila Bird OBE</b>	<b>Keynote address</b> <i>Space – so what?</i> <b>Anu Ojha OBE</b>	<b>Keynote address</b> <i>Geographies of the Anthropocene</i> <b>Dr Benjamin Hennig</b>
1125-1145	Refreshment break		
1145-1245	<b>Pupil panel</b> <i>A passion for Mathematics, Science and Geography: Students' perspectives</i>		
1245-1345	Lunch		
1345-1515	<b>Teacher-led workshop</b> <i>Why do we teach Mathematics and what are the issues in Mathematics education?</i>	<b>Teacher-led workshop</b> <i>Why do we teach Science?</i>	1345-1445 <b>Teacher-led workshop</b> <i>Why does Geography matter? What are the issues in geographical education?</i>
1515-1530	Refreshment break		1445-1545 <b>Lecture</b> <i>Geography's impact in the wider world</i> <b>Dr Rita Gardner CBE</b>
1530-1630	<b>Lecture</b> <i>Mathematics attainment for all: Pedagogy and practice</i> <b>Professor Hilary Povey</b>	<b>Choice of lecture</b> <i>Atoms, brains and galaxies: An introduction to spectroscopy</i> <b>Dr Peter Wothers MBE</b> OR <i>The effect of diabetes on the nervous system</i> <b>Dr Natalie Gardiner</b>	1545-1600 Refreshment break  1600-1700 <b>Lecture</b> <i>The Perfect Storm: Development, population and climate change</i> <b>Professor Mark Maslin</b>
1630-1800	<b>Teacher-led workshop</b> <i>Sharing good practice</i>	<b>Teacher-led workshop</b> <i>Sharing good practice</i>	1700-1800 <b>Teacher-led workshop</b> <i>Sharing good practice</i>
1800-1915	Break		
1915	Drinks reception and dinner: After dinner speaker, Anu Ojha OBE		

TIME	MATHEMATICS	SCIENCE		GEOGRAPHY
0900-0915	Introduction to the PTI Schools Programme			
0915-1020	<b>Lecture</b> <i>The mechanisation of mathematics</i> <b>Dr Vinay Kathotia</b>	0915-1015 <b>Lecture</b> <i>What's so special about Science education? Myths and realities</i> <b>Yvonne Baker</b>		<b>Lecture</b> <i>Assessing tectonic hazards in Eastern Asia</i> <b>Professor David Petley</b>
1020-1120	<b>Choice of lecture</b> <i>Mathematical magic</i> <b>Dr Katie Steckles</b> OR <i>Enigma and the secret world of codes and code breaking</i> <b>Dr James Grime</b>	1015-1100 <b>Teacher-led workshop</b> <i>What are the current issues for secondary Science education?</i>		<b>Teacher-led workshop</b> <i>Developing subject provision in your department</i>
		1100-1120 <b>Plenary</b>		
1120-1140	Refreshment break			
1140-1300	<b>Teacher-led workshop</b> <i>Beyond the curriculum: Making Mathematics engaging for all - how can we overcome the difficulties that occur when teaching Mathematics?</i>	1140-1500 <b>Biological Sciences</b>  <b>Visit</b> Wellcome Trust Sanger Institute  <i>Introduction to Wellcome Genome Campus</i> <b>Francesca Gale</b>  <i>Tracking transmission and evolution of bacterial pathogens with high-throughput genomics</i> <b>Professor Julian Parkhill</b>  Guided tour of the Sanger Institute  (Lunch included)	1140-1240 <b>Physical Sciences</b>  <b>Presentation</b> <i>An introduction to the Whittle Laboratory</i> <b>James Taylor</b> and <b>Antonio D'Ammaro</b>	1140-1240 <b>Lecture</b> <i>Demanding polar geopolitics: scrutinising the Arctic and Antarctic</i> <b>Professor Klaus Dodds</b>
1300-1400	Lunch		1240-1310 Lunch	1240-1330 Lunch
1400-1630	1400-1500 <b>Choice of lecture</b> <i>The mathematics of influenza</i> <b>Dr Julia Gog</b> OR <i>7 things you need to know about prime numbers</i> <b>Dr Vicky Neale</b>		1310-1500 <b>Visit</b> Guided tour of the Whittle Laboratory <b>Dr Anna Young</b>	1330-1630 <b>Fieldwork in Cambridge</b> <i>Taking learning outside the classroom: Inspiring pupils using fieldwork</i>
	1500-1630 <b>Teacher-led workshop</b> <i>Sharing development objectives</i>	1500-1530 Refreshment break		
1630-1700	Refreshment break	1530-1700 <b>Teacher-led workshop</b> <i>Sharing development objectives</i>		Refreshment break
1700-1800	<b>Choice of lecture</b> <i>Mathematics for weather and climate prediction</i> <b>Dr Hilary Weller</b> OR <i>Geometry and proportion applied in architecture</i> <b>Jon Allen</b>	<b>Choice of lecture</b> <i>Two heads are better than one: Recent developments in imaging and technology applied to cancer care</i> <b>Dr Ellen Donovan</b> OR <i>On the chemical origins of life</i> <b>Dr Matthew Powner</b>		<b>Lecture</b> <i>Geography, fieldwork and the future</i> <b>Alan Kinder</b>
1800-1915	Break			
1915	Drinks reception and dinner: After dinner speaker, Dame Fiona Reynolds DBE			

# Schedule Wednesday 24th June 2015

TIME	MATHEMATICS	SCIENCE	GEOGRAPHY
0900-1100	<b>Workshop</b> <i>If you want to build higher,            dig deeper</i> <b>Charlie Gilderdale</b>	<b>Workshop</b> <i>Building curiosity            in Science lessons</i>	0900-1000 <b>Lecture</b> <i>The changing face of 'development':            Emerging trends, challenges and            opportunities</i> <b>Dr Emma Mawdsley</b>
			1000-1100 <b>Lecture and workshop</b> <i>China goes global</i> <b>Professor Giles Mohan</b>
1100-1130	Refreshment break		
1130-1230	<b>Workshop continues</b>	<b>Workshop continues</b>	<b>Teacher-led workshop</b> <i>Sharing thinking: how will we            address changing Geography in the            classroom?</i>
1230-1330	Lunch		
1330-1515	<b>Closing plenary</b> Plenary discussion with panel of educationalists: <b>Glenys Stacey, CEO, Ofqual</b> <b>Stephen Munday CBE, National College for Teaching and Leadership</b>		
1515	Departure		



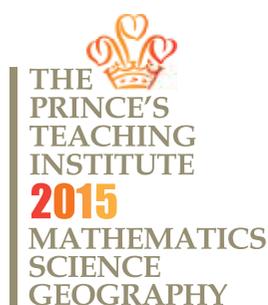
## Keeping in touch

### The PTI Schools Programme

As you have attended this Residential Summer School, your department is eligible to join The Prince's Teaching Institute Schools Programme. The Schools Programme is a membership scheme that gives you the opportunity to stay in touch with teachers you have met and allows you to continue to promote the spirit of the Summer School once back at school. Members share ideas and projects that enhance their department's subject provision, and meet every year to share experiences and devise further ideas.

Membership gives all staff in your department access to the resources of the Staffroom area of the PTI website, discounts on professional development courses and, after a year, the opportunity to use the PTI Mark on your school's stationery and website (right). Membership is obtained by discussing and agreeing your departmental objectives with your Summer School Teacher Leader, and requires the agreement of your school's head and chair of governors.

For further details please talk to any member of the PTI team at the Summer School, or email Alice Arkwright: [alice.arkwright@princes-ti.org.uk](mailto:alice.arkwright@princes-ti.org.uk).



### Professional development

The Prince's Teaching Institute provides one-day subject-based professional development courses. Combining academic lectures and teacher-led workshops, the courses are similar to a day of the Summer School, but are usually focused on a particular area of the curriculum. The days are devised and led by practising teachers, and the PTI office provides all logistical support, including inviting guest speakers.

Past speakers have included Dr David MacKay, Professor Iain Stewart MBE and Professor Marcus du Sautoy OBE.

Details of forthcoming events can be found at: [www.princes-ti.org.uk/events](http://www.princes-ti.org.uk/events).

We welcome offers to run these courses. If you are interested, please email Guy Norton: [guy.norton@princes-ti.org.uk](mailto:guy.norton@princes-ti.org.uk) or Danielle Mayoss: [danielle.mayoss@princes-ti.org.uk](mailto:danielle.mayoss@princes-ti.org.uk).

### Website

The public pages of [www.princes-ti.org.uk](http://www.princes-ti.org.uk) contain details of all of our activities and events. Membership of the Schools Programme allows you to access the Staffroom area of the website and its expanding library of resources. As well as the opportunity to listen again to many of the lectures from this Summer School, you will be able to hear podcasts of speakers from previous PTI events, and access a wealth of presentation materials and teaching resources. Should you join the PTI Schools Programme, all members of your department will gain access to these resources.

# SPEAKERS

## KEYNOTE SPEAKER **MATHEMATICS**

**Professor Sheila Bird OBE FRSE** is a Programme Leader at the MRC Biostatistics Unit at the University of Cambridge. Her research focuses mainly on transmissible diseases which impact on other jurisdictions. Examples are: BSE and vCJD (the human form of 'mad cow disease'); criminal justice and injecting drug users' morbidity (including from Hepatitis C virus) and mortality (including from overdose); and pandemic influenza. In 2011, Professor Bird was appointed OBE for her services to social statistics and, in 2012, was elected a Fellow of the Royal Society of Edinburgh.



## KEYNOTE SPEAKER **GEOGRAPHY**

**Dr Benjamin Hennig** is an academic geographer educated at the Universities of Cologne and Bonn and the Alfred Wegener Institute for Polar and Marine Research (Bremerhaven, Germany) where he conducted research on hyperspectral remote sensing applications in coastal ecosystems. He completed his PhD as part of the Worldmapper project at the University of Sheffield with research on visualising the social dimensions of our planet. He now works as a senior research fellow in the School of Geography and the Environment at the University of Oxford.



## KEYNOTE SPEAKER **SCIENCE** and AFTER DINNER SPEAKER

**Anu Ojha OBE** has been an Executive Director of the National Space Centre since 2008 and is Director of the UK's National Space Academy Programme. He leads the development of new international teaching programmes for the European Space Agency for students and teachers, at school and undergraduate level.



## AFTER DINNER SPEAKER

**Dame Fiona Reynolds DBE** became Master of Emmanuel College, Cambridge in 2012. She came to the College from the National Trust, of which she was Director-General from 2001-2012. During her time at the National Trust she made it warmer and more welcoming, bringing the houses to life and raising the profile of the Trust's work in the countryside. Before becoming DG of the Trust, she was Director of the Women's Unit in the Cabinet Office (1998-2000), Director of the Council for the Protection of Rural England (now Campaign to Protect Rural England, 1987-98) and Secretary to the Council for National Parks (now Campaign to Protect National Parks, 1980-87). Dame Fiona was appointed CBE for services to the environment and conservation in 1998 and DBE in 2008.



## PANEL



**Glenys Stacey** is an experienced regulator and chief executive. A solicitor by profession, she has seventeen years' CEO experience, having led the start up or turnaround of a number of public sector organisations responsible for legal and/or regulatory services. She joined Ofqual as its CEO and Chief Regulator designate in March 2011, and became its CEO and Chief Regulator by statute in April 2012. She holds an MBA and is just completing an MA in Educational Assessment.

Ofqual is leading the implementation of the government's planned reforms to qualifications in England. It advises government on how best to deliver government's policy aims for qualifications, and has specific statutory objectives to ensure standards. It is responsible for regulating those organisations that produce regulated qualifications (including GCSEs, AS and A Levels, Applied General and Technical Level qualifications) and for overseeing the awarding of key qualifications.

**Stephen Munday CBE** is the Executive Principal of Comberton Village College in Cambridgeshire and the Chief Executive of the Comberton Academy Trust.

Mr Munday works in several advisory capacities for the Department for Education (DfE), including the Teaching Schools' Council and the Eastern Region Headteachers' Board, and is a National Leader of Education with the National College for Teaching and Leadership (NCTL), and an Associate Head with the SSAT. He is a Fellow of the Royal Society of Arts and was awarded an Honorary Doctorate by Anglia Ruskin University for his services to education and the community. He joined Ofsted as an inspector in January 2013 at which time he was also awarded a CBE in recognition of his services to Education.



## Thank you to all our donors

The Prince's Teaching Institute would like to thank all our donors, in particular members of the 2012 Club and Patrons, listed below, as well as a number of anonymous donors, who have committed multi-year financial support to the charity.

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## The Curiosity Project

**Our Mathematics and Science Programmes are supported by Siemens as part of the Curiosity Project.**

The Curiosity Project is a three year engagement programme by Siemens, broadening existing investment to bring science, technology, engineering and mathematics (STEM) to life in the UK. By supporting organisations that reach out and nurture the innate curiosity in young people, Siemens hopes to influence five million children over the three year project. The project is underpinned by an extensive education programme providing free, stimulating and unique STEM-related resources that bring STEM education to life and help inspire the next generation of engineers!

## Curious?

You'll find everything you need to know at [siemens.co.uk/curiosity-project](https://www.siemens.co.uk/curiosity-project). Why not sign up to the Curiosity Project newsletter for the latest news on events, prize draws and resources? Further resources can be found on their education portal: [siemens.co.uk/education](https://www.siemens.co.uk/education).

Follow them: **@SiemensUKNews #curiosityproject**

Read their blog: **[blogs.siemens.com/curiosity-project](https://blogs.siemens.com/curiosity-project)**



## BERNICE MCCABE Course Director

A head for over 20 years, Bernice McCabe studied English at Bristol University and has an MBA.

She taught for 16 years in mixed comprehensives in Bristol and London, including 5 years as Head of English and 4 years as Deputy Head of The Heathland School, London Borough of Hounslow. Since 1990 she has been a headmistress: for 7 years of Chelmsford County High School, a maintained grammar school, and since 1997 of North London Collegiate School, a 4-18 independent school, which opened its first overseas campus on the island of Jeju in South Korea in September 2011.

She has served on national education committees in the maintained and independent sectors. From 2010–2014, she was a member of the National Curriculum Review Advisory Committee and in February 2013 she was appointed as an Expert Advisor for the London Schools Excellence Fund, set up by the Mayor of London to promote excellent teaching and help tackle underperformance in London maintained schools.

In 2002 she directed the first Prince of Wales Education Summer School. In 2006 the annual Summer Schools grew into The Prince's Teaching Institute which she now Co-Directs.



## ACKNOWLEDGEMENTS

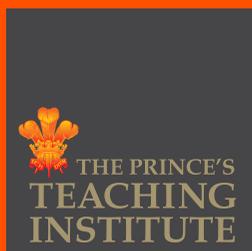
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Mathematics, Science and Geography  
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