

# Cambridge Outlook

THE MAGAZINE FOR CAMBRIDGE SCHOOLS WORLDWIDE

Issue 31, May 2019

## Inside



### Expert interview

Athene Donald offers advice on supporting female STEM students



### New protocol

Protecting children against child abuse



### Case study

One Indonesian student shares her experience of speaking at a United Nations conference



## In Focus

# STEM learning

Engaging students in science, technology, engineering and maths to equip them for our future world



Cambridge Assessment  
International Education



# Cambridge Schools Conference

## Evaluating impact: how effective is our school and classroom practice?

Our next conference is in Cambridge, UK  
on Saturday 14 to Sunday 15 September 2019

Book your place now at [cambridgeinternational.org/conference](https://cambridgeinternational.org/conference)

“I left the conference with a plethora of ideas that I will be implementing in the 2018–19 school year, and newly acquired knowledge for my professional growth.”

Conference delegate, 2018



# Welcome

ISSUE 31, MAY 2019



STEM offers a special set of tools for understanding the world that are critical in creating a sustainable future for humanity," asserts our Education Director Dr Tristian

Stobie (page 6). This is why we are concentrating on these important subjects in our 'In focus' section this issue. We look at how to help all students learn to love mathematics, at efforts to encourage more women to study STEM at university and at how schools around the world are bringing STEM subjects to life.

Seeking different perspectives has been key to my first months as Chief Executive of Cambridge International (page 17). Speaking to school leaders and teachers, I've discovered a strong focus on the future and the education services we need to provide to help our students thrive. To this end, we offer a wealth of resources and support for you and your learners – find out the latest on page 22.

Enjoy the issue – thank you to all the schools that have contributed to it. If you have any questions for us, please email [outlook@cambridgeinternational.org](mailto:outlook@cambridgeinternational.org)



**Christine Özden**

Chief Executive,  
Cambridge Assessment  
International Education

## In memoriam



This issue is dedicated to the memory of Cambridge International's Communications Manager Graeme Curry. Graeme, who died in February of this year, was a key member of the team behind *Cambridge Outlook*.

We will miss his intelligence, his quick-wittedness, his humour and his editorial excellence.

## About us

Cambridge Assessment International Education prepares school students for life, helping them develop an informed curiosity and a lasting passion for learning. We are part of the University of Cambridge.

Any feedback on this issue? Anything you would like to read about in the next issue? Contact us at:

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## Fantastic response to science competition

Students from Cambridge schools around the globe have been enhancing their scientific knowledge in a fun and engaging way, thanks to our Cambridge Upper Secondary Science Competition.

We've had a great response to the competition, with more than 250 schools taking part. There have been some truly fascinating entries, with a wide range of science-related subjects covered. The

results of the competition, featuring regional and overall winners, will be announced at the end of May 2019. Look out for more details in the next edition of *Cambridge Outlook*.

Next year's competition will open for entries later this year, giving students plenty of time to think about new projects. Visit [www.cambridgeinternational.org/science-competition](https://www.cambridgeinternational.org/science-competition)

## New subjects available at Cambridge Primary and Lower Secondary



From September 2019 schools will be able to offer four new subjects at Cambridge Primary and Lower Secondary, giving learners more opportunities to develop their skills and creativity.

The new subjects – art & design, digital literacy, music and physical education – will complement our existing English as a first or second language, Cambridge Global Perspectives™, ICT, maths and science curriculum frameworks. Schools can offer as many subjects as they wish and adapt them to suit their learners' needs. See page 22 for more details.

ISTOCK

## Cambridge conference for schools in Pakistan

'Ready for learning, ready for the world' was the theme of our sixth Pakistan Schools Conference, held in Karachi on 19 March 2019. More than 220 educators from 150 Cambridge schools took part, exploring ways to create an environment that promotes the wellbeing of students and teachers alongside successful learning.





# Global insight

Stories from the world of international education

## The White House declares international education a priority

Following a direct address to international educators at the IIE Summit held in New York in February this year, the US Bureau of Educational and Cultural Affairs has confirmed that additional resources are being secured to promote both outbound and inbound study abroad.

"Seeing more international students enrol into US colleges and universities is the number one priority for our bureau," Marie Royce, US Assistant Secretary of State, announced at the meeting, which was called by The White House and attended by universities, higher education groups and companies.<sup>1</sup>

## The opportunities and challenges of artificial intelligence in education

UNESCO's annual Mobile Learning Week 2019 focused on artificial intelligence and sustainable development. Held at the UNESCO Headquarters in Paris from 4 to 8 March 2019, the event brought together education and technology experts from around the world. This year, 1500 participants from 130 countries were in attendance. The event invites the educational community, governments and other stakeholders to discuss the role that artificial intelligence (AI) plays in sustainable development. Key issues included how to ensure inclusive and equitable use of AI in education, how AI can enhance education and learning, how to promote the skills needed for jobs and life in the AI era, and how to manage safeguarding and auditable use of education data. The five-day event included workshops and demonstrations as well as speakers from a range of fields. A Working Paper entitled *Artificial Intelligence in Education: Challenges and Opportunities for*

*Sustainable Development* was presented by UNESCO and ProFuturo. It brought to light many of the questions educators are facing as teaching and learning solutions using artificial intelligence are being tested globally. Preparing teachers for AI-powered education is a large focus as the paper looks at the new digital skills teachers will need in order to use AI in a meaningful way, and how AI developers must also learn how teachers work in order to create solutions that are sustainable in real life.<sup>2</sup>

## Cambridge Assessment English wins prestigious alliance award

Cambridge International's sister organisation, Cambridge Assessment English, has won the corporate social responsibility award at the Alliance Excellence Awards 2019 in Fort Lauderdale, Florida, for its online course Volunteering with Refugees. This successful course has helped more than 8000 people so far get the skills they need to teach English to refugees.

## Portuguese language inspires Cambridge students in Brazil

One of the challenges for international schools is how to connect students from so many different countries to the local culture and language.

St Nicholas International School in São Paulo in Brazil has found a way by holding an annual literary exhibition which celebrates the language of their host country – Portuguese.

Now in its eighth year, 'Made in Brasil' encourages students, teachers, parents and staff to write poems and short stories in Portuguese, some of which are published in an anthology. In 2018, around 100 texts were chosen for publication out of more than 300 entries. The school expects a similar number of entries for this year's project.



The money collected from last year's sales of 'Made in Brasil' books was used to purchase books for students and teachers at the Centro Comunitário in Paraisópolis, an institution supported by the school as part

of its community work.

Anderson Costa, Head of the Portuguese Department, said: "'Made in Brasil' is a celebration of the high literary potential of St Nicholas. Our students are very proud of the opportunity they have had to be able to share their texts with everyone."

## Look ahead to Cambridge Schools Conferences in 2019/20

The 2019/20 Cambridge Schools Conference series gets underway in September. We'll hold three conferences exploring the theme 'Evaluating impact: how effective is our school and classroom practice?'

### Save the dates:

- Cambridge, UK: 14–15 September 2019
- Bali, Indonesia: 4–5 December 2019
- Orlando, USA: June 2020 (date to be confirmed)

Find out more and register your interest at [www.cambridgeinternational.org/conference](http://www.cambridgeinternational.org/conference)



# IN FOCUS



## Success through STEM

*Dr Tristian Stobie, Cambridge International's Education Director*, introduces this issue's 'In focus', which explores science, technology, engineering and maths in education

**A**s well as providing rich opportunities for study in higher education and an enormous variety of career options, STEM offers a special set of tools for understanding the world that are critical in creating a sustainable future for humanity and our planet. For these reasons, it is vital that STEM forms a significant part of a broad and balanced curriculum in our schools.

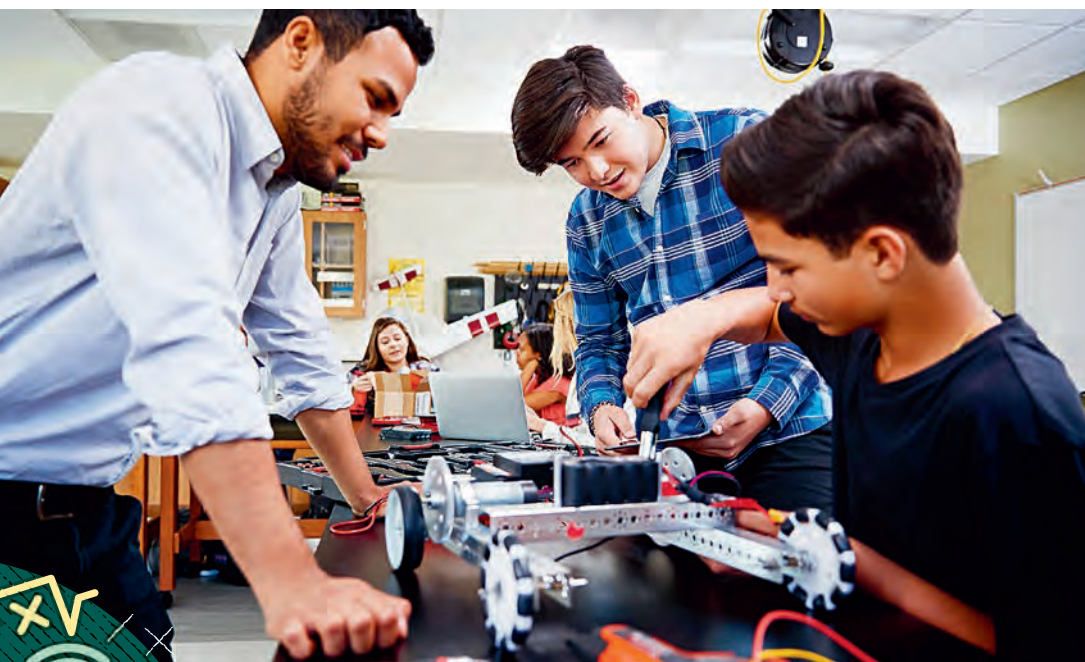
The importance of STEM education is the reason why we chose it as the theme of this issue's 'In focus' section. The following articles raise a number of key ideas about how schools can optimise learning through STEM.

The first idea is that mathematics, technology and the sciences are for everyone, not just specialists. They present ways of thinking and problem solving that everyone needs to understand. Scientific and mathematical literacy equips students with the ability to scrutinise claims with rigour and to distinguish sense from nonsense in the mass of information they encounter. Students need to understand something about the science behind

STEM is highly creative and collaborative. It enables students to work in teams to solve common problems







“STEM literacy equips students with the ability to scrutinise claims with rigour”

phenomena such as climate change, and the mathematics behind claims made by political parties and by other organisations that is often used to mislead.

The second idea is that STEM is highly creative and collaborative. Universities are increasingly interested in students who can work in teams on common problems where collective intelligence is more than the sum of each individual. This is becoming normal in the world of work and a condition for employment in all of the most successful companies. It is pleasing to see schools encouraging or requiring students to work collaboratively on science projects in the case studies on pages 14–16, and it was for this reason that we introduced the Cambridge Upper Secondary Science Competition last year. Being a good academic student with good grades remains a necessary condition, but it is no longer sufficient for a successful life in STEM.

A third implicit idea is that each STEM subject has its own disciplinary structure that students need to learn in order to master basic skills, embedding them in long-term memory before moving on to more advanced areas. STEM emphasises interdisciplinary connections, but these connections must be based on a firm disciplinary understanding.

Another vital theme is the importance of habits of mind and learner attributes in becoming a mathematician or scientist.

Grit, not giving up, seeing failure as a learning opportunity, a sense of wonder and an inquiring mind are essential ingredients for success and enjoyment. On pages 12–13, experts from MIT and the Indian Institute of Technology discuss the crucial role teachers play in cultivating students’ hunger for STEM.

Many countries and cultures still struggle with gender bias. Schools are in a special position to counter it, giving careful consideration to what are usually unintended consequences of policies or practices. This requires making gender equality and access a topic of conversation and action, not just hoping it will go away. On page 8, Dame Athene Donald describes how her position as a Master of a Cambridge College gives her a platform to stand up and talk about gender issues in science, and encourage more girls to apply for STEM degrees.

Thank you to everyone who has contributed to this issue and to all the schools and students who entered our first-ever Cambridge Upper Secondary Science Competition. We hope you enjoyed it! We’ll publish the results in our next issue. 📖

## In this section

8 Dame Athene Donald explores ways to encourage more women into STEM

10 Taking a fresh look at mathematics teaching

12 Two experts on STEM at university and beyond

14 Schools in India, the Bahamas and the USA describe their approaches to STEM teaching

# A QUESTION of gender

*Dame Athene Donald, Master of Churchill College and Professor of Experimental Physics at the University of Cambridge, examines the landscape for women in STEM*

## What do you find exciting about physics?

I've always been intrigued by everyday physics. To take a trivial example, understanding how a rainbow forms. It helps me make sense of things that are all around me. That is what I do in my research and that is what I love.

## What has been your greatest personal achievement from a research perspective?

Quite early on, I became a physicist working at the interface with biology. Some of my colleagues back in the 1990s thought it just wasn't physics, but now it is seen as hugely important. I would like to think I have played a part in making that kind of interdisciplinary working respectable before it became particularly fashionable.

## Which projects have you most enjoyed?

I really enjoyed a collaboration about starch that I had with a plant biochemist at the UK's John Innes Centre, based in Norfolk. It happened to be a woman I was working with. We spent a long time trying to learn the scientific language of each other's specialism but when we did, it was fun to bring these different ideas together and to be able to synthesise our different approaches.



"I recently heard about a 10-year-old girl whose teachers told her she did maths like a boy. What does that mean?"

## What kinds of barriers can girls face at school when it comes to STEM subjects?

The evidence is that we are less objective than we think we are and cultural attitudes start really early. One study from the US showed that girls as young as six and seven start thinking that boys are smarter than them and, because physics is associated with being smart, you can see how that feeds into girls' lowered expectations. Biology just doesn't have that overtone.

To take another example, I recently heard about a 10-year-old girl whose teachers told her she did maths like a boy. What does that mean? Why is it thought to be an acceptable thing to say?

I also watched a documentary where a primary teacher was filmed in class – he called the girls 'sweet peas' and picked out different kinds of puzzles for boys to do. He was a lovely man and was absolutely appalled when he was shown it.

An analysis by the UK's Office for Standards in Education, Children's Services and Skills (Ofsted) showed that, for work experience, it's much more likely boys would be sent to a local garage and girls to the local hairdresser. Those things that might seem natural have to be unthought. We must consciously try to overcome them.



### Can you give examples of the types of bias some working female scientists have faced?

We know that often, ideas that were originated by women are actually only remembered when they come from men. Papers with a woman's name in the first or last author place tend to get fewer citations than if it's a male. Physicist Lise Meitner, chemist Rosalind Franklin and astrophysicist Jocelyn Bell Burnell are obvious examples of women who might have been expected to get a Nobel Prize and didn't.

### What advice do you have for school leaders?

There is no doubt that school culture – the science teachers, head teacher and peer group – has an impact. We have moved away from that crude split from my days of schooling when the boys did woodwork and the girls did domestic science, but some of the thinking that led to that is likely still to be present and it is important to make sure you genuinely treat all children the same. It helps if a girl has family members who can tell them about women and STEM and reassure them, but many children in less advantaged schools may not have that cultural capital to help them. Head teachers can really make a difference in setting expectations.

If, as a woman, you are determined enough to want to study engineering, the chances are you are really good because you have already had to overcome so many barriers. So, if we can get women applying to us, they are likely to be really strong candidates. What's positive is that, once at university, the number of women who stay in the

## Dame Athene Donald



Athene went to an all-girls' school and had no brothers. Her physics teacher was delighted that she wanted

to do physics at university and so for a long time she was "completely oblivious to gender issues". She secured a place at the University of Cambridge and was awarded a BA in Natural Sciences, Theoretical Physics and a PhD in Physics. She then spent four years as a postdoctoral research associate at Cornell University in the US before returning to Cambridge, where she has been ever since.

Her research field can best be described as soft matter and biological physics, which involves studying the microscopic structure of everyday stuff from plants to

plastics. An early experiment looked at the structure of extruded starch foams of the type commonly known as Wotsits™.

After working as a Lecturer then a Reader, in 1998 Athene became the first woman in Cambridge to be a Professor in any of the physical sciences. She says: "It became very obvious to me that there were certain ways about being a senior academic in which I was not treated the same as my male colleagues."

Athene's first real opportunity to discuss gender issues with the centre of the University came in 2006 when she was appointed Director of the Women in Science, Engineering and Technology Initiative. In 2010, she became Gender Equality Champion for the University. In 2014, she became the first woman to hold the role of Master of Churchill College.

system has increased and the number of female physics professors has gone up substantially.

### How are you trying to encourage applications to Churchill College and support women once there?

By statute, 70 per cent of our College's students are admitted to do STEM subjects. Only about 23 per cent of Physics A Level students in the UK are female. This is a global trend – in developed nations worldwide, the figure is much lower. So, for physical sciences and engineering, we are going to struggle to get to 50–50. But even taking that small pool of women into account, the numbers applying have been really low. We are looking at improving how we portray things on our website. Women report they are deterred from studying here because our statistics show we have very few women. So, we've made videos of women talking about what a welcoming and inclusive environment it is here.

Some people say that just having a female Master makes the College more attractive and I am aware that a lot of younger women find it reassuring that I'm prepared to stand up and talk about the issues. They feel my voice speaks for them. That visibility and a sense that I can help empower the next generation is important to me. ■



# I ♥ maths



ISTOCK, SHUTTERSTOCK



**Doctor Alison Borthwick** has worked in education for 25 years. She explains how her dislike of maths at school inspired her to become an international mathematics education consultant

“When I was at primary school, we used a maths scheme where you had to correctly answer all the questions on cards of a particular colour before you could move on to the next colour,” says Alison. “I always wanted to get to the pink box but I never did. This impacted on my attitude when I went to secondary school – I became negative towards mathematics because I felt I couldn’t do it.”

Alison vowed she would never do maths again and went to university to study philosophy. But when she decided to do a teaching degree, maths was back on the timetable.

“At first I thought getting my Year 3 primary class to use a ruler was most essential,” she says.

A lightbulb moment came when Alison moved to a new school where one of the conditions of the job offer was that she also filled the post of maths subject leader.

“The school sent me on a two-day professional development course. The trainers showed me that mathematics is not about answers or rules – it’s about reasoning, thinking, being persistent, showing resilience, having an inquiring mind and a positive attitude. I thought, ‘I can do all of that.’

“I was also part of a pilot for the University of Cambridge’s NRICH project, which is now a global website providing free online maths

resources. Those two things opened my eyes to maths and from then on, I became an ambassador for it. I still find maths hard but I have a really positive growth mindset towards it.”

In 2008, Alison completed a doctorate where she had focused on children’s perceptions of and attitudes towards maths: “My methodology was to ask them to draw a picture of their lesson and I was able to correlate negative attitudes towards maths with doing less well. The drawings showed that many children felt isolated in maths lessons.”

## Enthusiasm is key

Alison believes that being a positive role model is one of the strongest attributes teachers can have – to compensate for the negativity children encounter about maths in the media or at home: “I’ve worked in more than 20 different countries through Cambridge International and the universal thing I have noticed is that people are happy to say, ‘I’m not very good at maths’. It’s almost a badge of honour. I want teachers to spread glitter and sparkle around maths and say, ‘I love maths. We love maths.’



“I want teachers to spread glitter and sparkle around maths”

Below: Pupils’ attitudes towards maths  
Right: Alison in action at the Cambridge Schools Conference in Dubai





“School leaders should bring together their teachers – whether they are teachers with specific maths expertise or primary teachers who teach everything – to have informal and formal professional development training to engage them in maths and to make sure everyone is being really positive about it. Get parents on board too so they know not to say they don’t like it or can’t do it.”

### Maths is everywhere

Teachers need to show how maths appears in all subjects. “If I ask teachers when they do maths, I want them to say ‘everywhere, every minute of the day’ – not that they teach it between 9am and 10am. I want them to show students that maths pervades in science, art and physical education; when they go shopping; and for any career, including lawyers, actors and doctors,” says Alison. She is passionate about links with other STEM subjects: “M might be the last letter in STEM, but maths is the golden thread running through it because how can you do science, technology or engineering without maths?”

### Need to develop skills

Alison says we also need a skills-based approach: “Maths is not just about solving a quadratic equation. It’s about thinking and reasoning, being able to pose questions, learning from mistakes, having different strategies, working backwards and spotting different patterns. The better we are at acquiring these skills that go across all subjects, the better we’ll be at maths. If we can bring all of this together, that would be a really positive step. So, let’s make the M in STEM magnificent!”

## Doctor Alison Borthwick

Alison has a wealth of UK and international experience in mathematics teaching and learning consultancy. As part of her work for Cambridge

International, she has delivered training, reviewed curricula and been involved in conferences. She is the author of three books. [www.alisonborthwick.co.uk](http://www.alisonborthwick.co.uk)



## Mathematical Salad



**Lucy Rycroft-Smith, Researcher and Editor at Cambridge Mathematics**, is part of the team behind the blog Mathematical Salad – a valuable resource for teachers

“Cambridge Mathematics is a University of Cambridge project between the Faculty of Mathematics, the Faculty of Education, Cambridge Assessment and Cambridge University Press, with the ambitious aim of creating a digital, evidence-based map of school mathematics to help revolutionise the work of teachers, resource writers and curriculum designers worldwide.

“As we write our Framework, immersing ourselves in the latest and greatest research on mathematics education, we are amassing a useful database of helpful teaching approaches in different areas. One of the quickest and easiest ways to communicate these to teachers is via our blog.

“What makes a great teaching blog? I like to compare it to a fruit or vegetable smoothie. It needs to be easy to find, easy to consume and easy to digest, without losing the goodness of the ingredients. We often add a touch of something unexpected, too. For example, my recent blog called ‘Cumulative frequency: a dancer’s tale’ explored the teaching model of Lindy Hop, a dance I’ve been learning for seven years, where I examined the idea that you can learn the same thing with a differently angled focus to

your attention and it can feel revolutionary. In another blog called ‘Seeing Spots’, Tabitha Gould looks at the issue of subitising (recognising the number of items in a set without counting them) through the game Mexican Train.

“Some blogs are focused on one particularly lovely task. ‘Double Triangle Trouble’ by our geometry expert Rachael Horsman gives teachers an example of a ‘little gem’ to go away and think about’ for children from 5 to 18.

“Other blogs give teachers professional development opportunities – our statistics guru Darren Macey has written a series on teaching and understanding different statistical concepts through beginner-level programming in the language R.

“Teaching maths is just one of six categories of our blog selection in Mathematical Salad. We hope, like a freshly blended smoothie, there is something for everyone – and all of it is good for you.”



Read Mathematical Salad at [www.cambridgemaths.org/](http://www.cambridgemaths.org/) blogs and sign up for news of the latest updates at [www.cambridgemaths.org/newsletter](http://www.cambridgemaths.org/newsletter)

# Cultivating a hunger for science and technology

Two experts share their insights into the world of STEM at university and beyond



**STUART SCHMILL**  
Dean of Admissions  
and Student Financial Services,  
Massachusetts Institute  
of Technology (MIT)

“The core to STEM subjects is the ability to analyse and solve problems and that has remained consistent since I was an undergraduate in mechanical engineering here 30-plus years ago,” Stuart explains. “But there are some notable trends.”

## The power of computing

“Computer Science is now our largest major. Technology can unleash both incredible power and incredible disruption – we want to make sure that when that happens, it benefits society and doesn’t cause harm, so we think a lot about ethics. We want to be groundbreaking in the study and advancement of artificial intelligence (AI) and machine learning, and to ensure those fields are useful across other disciplines, including the humanities, arts and social sciences. To reflect that, we’re launching an institute-wide college of computing and we’ve created more joint majors with other disciplines.

## Real-world practicality

“If you want new processes and technologies to be a net plus for society, you have to have an understanding of the economic, cultural, political and social impacts your developments are going to have. So, more than ever, we’re sending students into communities around the world.

“Every industry on the planet is going to require some kind of technical expertise and

speciality. Certainly, a number of our students become engineers, research scientists, professors and doctors. But we also need talented people to go into all kinds of disciplines to try to reverse the effects of climate change, for instance.

## An array of careers

“Our education gives students the skills, experience and background to pursue whatever they want. We’ve seen our students become lawyers, chefs, TV personalities, actors and musicians. Quite a number of them set up companies, such as Salman Khan, who started the Khan Academy, providing free open education. Every MIT student goes through their first year without a major – so students don’t have to decide early on. And once they are here, there are no restrictions – it’s not harder to get into one major than another.

## Inspiring students

“Students we see who follow the Cambridge curriculum are not only talented but very enthusiastic. We get a lot of applicants with good grades so we also look at what they do beyond the classroom, whether that’s research, building a robot or writing software. That might be at a school club or on their own. We want students to show persistence and engagement with the work they have done, whatever that activity. It’s hard to overstate how important individual teachers are in mentoring students and sparking their interest.

“We also look at whether we think students are going to be good citizens – will they be good roommates and helpful to their classmates?”

MIT’s aim is to produce graduates who help ensure that technology benefits society



“We need talented people to go into all kinds of disciplines to try to reverse the effects of climate change, for instance”





### PROF PRADIPTA BANERJI

Professor of Structural Engineering, Indian Institute of Technology (IIT) Bombay

“A tilt towards STEM happens early in life,” explains Pradipta, who is

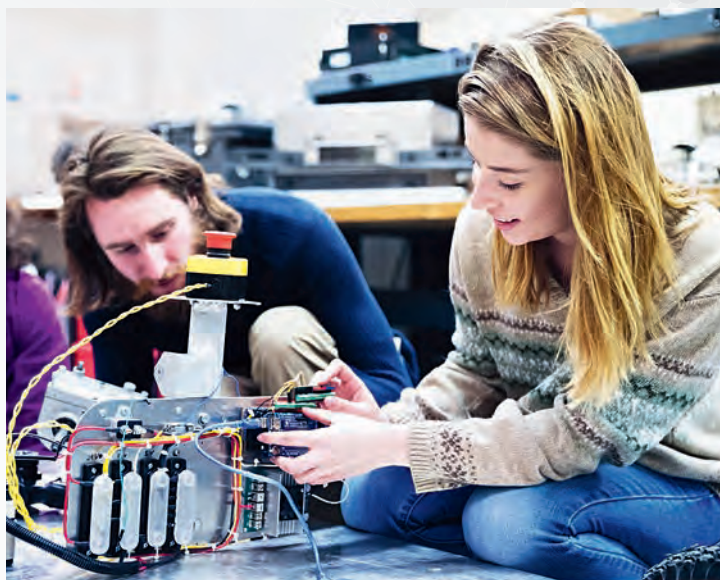
from a family of civil engineers and architects. “There is a restlessness to understand things that are beyond your ability to comprehend. Parents and schools need to be able to identify and understand such propensity and then do whatever is in their power to encourage it.

“What interests me most about civil engineering is that you can see the outputs of it everywhere around you. You’re working on solving problems in the field and can see first-hand how effective and economical a good design of a structure is, and how bad design is immediately penalised.

### Groundbreaking research

“All my research has been guided by this curiosity about real-world structures. My biggest contribution to knowledge has been in the structural health monitoring of bridges. Techniques that I developed for assessing the current condition and future state of real bridges under actual vehicle loads are now used worldwide.

“My doctoral work focused on developing simple methods of analysing the response of complex buildings to earthquake forces. Later, I developed a very cheap earthquake response control device – a specifically designed water tank



“Parents and schools need to do whatever is in their power to encourage students”

An interest in STEM begins at a young age

– that can be used in developing countries to avoid buildings collapsing during earthquakes.

### Evolution of engineering

“Since I was a Civil Engineering undergraduate in the late 1970s and early 1980s, it has seen a sea of change. Now, all analysis methods taught are for digital applications, while computer-aided design and drawing is standard practice and Building Information Modelling has made practical project handling fast and accurate.

### Alumni in the world

“While most of our graduates continue in the core areas of engineering and sciences – in companies, research institutions and academic institutions – alumni are present across the spectrum of jobs that exist. Our students have gone on to enter consultancy, banking, software, management, social entrepreneurship, social activism, politics, civil services and new-age companies working on futuristic technology.

### Curiosity is key

“STEM requires more curiosity-driven projects to be embedded in the curriculum. Underpinning every engineering student is an inherent liking for maths and a curiosity to try and understand how anything in the physical world works. The emphasis of Cambridge International A Levels on project learning to show practical uses gives schools an opportunity to excite students about STEM subjects. This can lead to the development of engineers who are the vanguard of future technological development.” ■





# Science *in* action

We asked three schools in different parts of the world what they're doing to improve their students' understanding of STEM-related subjects



**HVB GLOBAL ACADEMY  
INDIA**

The Innovation Hub at HVB Global Academy contextualises classroom learning with practical concerns by serving as a sanctuary where ideas can develop. It has the physical resources and infrastructure to turn ideas into fully functional models.

In addition, students have an integrated STEM curriculum across all grades and are introduced to devices such as resistors, sensors and motors early in their school years. This approach equips students with deep-thinking skills to undertake research-intensive projects at the Innovation Hub.

"Local and pressing challenges – such as food scarcity, pollution, climate change, health and nutrition, and employment – feed into the complexity and interdisciplinary nature of projects, challenging students and teachers to synthesise concepts beyond the rigid confines of disciplines," explains Kishan Sinha, who is head of the Innovation



Hub. "The Innovation Hub is a pivotal inspiration for our students along the Cambridge Pathway."

For example, a hydroponics project by Grade 10 and Cambridge International AS Level students researched the negative impact of climate change on food production in India. It concluded that techniques such as hydroponics and aquaponics are viable alternatives to traditional farming while addressing challenges from large-scale crop damage in the event of adverse climate conditions that our food production system is prone to.

When investigating and designing their plan of action, students and teachers found it necessary to ask the following questions: How does a seed work? How is it possible for a small seed to generate a plant? Could seeds be viewed as small factories? What role does soil play in plant growth? Is it possible to grow plants without soil?

"Next, we plan to develop our hydroponics system into an aquaponics system by introducing fish in the system, and later into an aeroponics system to cut down on water usage," explains Kishan. "The projects thus become progressively challenging on technical as well as conceptual fronts for both students and teachers. We hope to throw a Salad Party in school by year-end using only vegetables and fruits grown at school using these methods."

Cambridge International A Level student Ansh Jain said: "I received endless help and support from my teachers. They believed in me and helped me make my dream projects. There couldn't be a better foundation for my future work."



"I received endless help and support. There couldn't be a better foundation for my future work"

Top left: students research food production in their hydroponics project. Below: pre-primary children learn to grow plants. Left: a robotic arm made by one of the students







## WINDSOR SCHOOL BAHAMAS

Students at Windsor School, Bahamas completed a rigorous, three-week STEM project, where they researched density, air pressure, and how different yet everyday situations rely on the particles that make up the air. Susan Heap, Teacher of Science, talks us through the project.

### The importance of particles

“Students looked at how we’re able to detect different smells through diffusion and the practical applications this has, from detecting smoke from a fire to reminiscing about great memories evoked by a favourite delicious meal.

“They also examined density and how it’s used to explain why something floats or how submarines are able to rise and dive, and how the density of air has everyday applications such as inflating tyres on cars and bikes, playing musical instruments and predicting weather patterns.

### Applying theory to practice

“The students experimented with diffusion in liquids, such as dissolving the colour from Skittles™ sweets in water. They were able to examine and discuss how hazardous materials such as chemicals or oil spills can become diffused in liquids, and then look at ways of preventing, containing or cleaning up such disasters.

“They then looked at air diffusion – which they discovered takes place at a much faster rate than diffusion in liquids – and other scientific concepts, which they put into practice using their newly acquired knowledge.

### Bringing science to life

“Throughout all aspects of the projects, my main emphasis was on discussion and understanding



The STEM projects at Windsor School use everyday objects such as sweets to show students how diffusion works

that the students could practically apply the concepts.

“I love watching them laugh, communicate together, and develop an enjoyment of science and a love for learning. It’s great to see the ‘light bulb’ switch on in the middle of a project. Students have their own passion and it’s nurtured when they can apply the theory that they’ve learnt.”

### Student approval

Emma, a Year 8 student at the school, endorsed Susan’s comments. She said:

“It’s not like we’re doing maths today and science tomorrow – it’s coming together at the same time, and we can see this in our projects.

“I’m a visual learner. I can see how it happened and then I can figure out why. It’s better than just reading about it or watching videos.”





### ATLANTIC COMMUNITY HIGH SCHOOL USA

Last November, Atlantic Community High School's Cambridge International A Level Chemistry students undertook projects in which they were tasked with solving a water quality issue. Chemistry teacher Melinda Ogden talks us through the process.

#### Quality research

"Students undertook projects relating to one of the following: runoff (the draining of water, or substances in it, from the surface of an area of land or structure) from either agricultural land or a parking lot, extracting usable materials from wastewater and removal of prescription drugs from wastewater.

"In groups of three or four they then worked for a month defining their goal, envisioning a solution, building a prototype, testing their prototype and presenting to the class for feedback. The final task was to present their project to the community.

"Topics they covered included extracting oil and lead ions from parking lot runoff, extracting ibuprofen from wastewater, extracting ions from wastewater to form a fertiliser, extracting nitrates from agricultural runoff to prevent algal blooms (the build-up of algae in freshwater or marine water systems) and extracting pollutants from retention ponds by using a floating pump system.

"In every case, students used simulated water – none of it was actually from runoff or wastewater.

Students presented their projects to the class for feedback and then to the community



"Students realised there are issues they can solve, and that those solutions are not beyond their reach"

#### Invested interest

"The students were very engaged with their projects. Here in South Florida there is universal awareness about the critical importance of water quality, and being able to choose the subtopic to work on meant the students had a genuine interest. Many of the students live near the water and so are personally affected by algal blooms.

"Every group ran into issues with their prototypes and were so engaged with their work that they iterated their designs repeatedly until they were successful.

"The students took away some ideas about engineering, iterative design, chemistry and perseverance, and realised there are issues in the world that they can solve, and that those solutions are not beyond their reach.

#### Environmental responsibility

"The projects also seemed to impact students' sense of environmental responsibility, such as one individual who was inspired to research how to clean up gum in public spaces so that it would not cause pollution or harm to animals.

"Students had to present their projects to an authentic audience, so they really focused on their message and learnt how to best communicate their goal, process and outcomes.

"This was their first time doing a project like this and they did an amazing job."

#### Results

Here shows the change in the amount of oil in the trial with 50 mL of oil.



#### Simulation

- All parking lot runoff does not make it to the drains
- System that could help lead more runoff to the drainage system
- Small trenches lining green areas leading to drainage systems





# Looking to the future

Cambridge International's *Chief Executive Officer Christine Özden*, who took up her role in January, tells us what she has learnt about the organisation and where it is headed

**W**hat I did most of when I joined Cambridge International – and what I continue to do – is take the time to listen to people in different teams across the organisation, and process their feedback. I resist any temptation to form conclusions, make assumptions or make decisions too early.

My overriding first impression was how committed everyone is to education and what we are trying to achieve as Cambridge International. Everyone wants to do the best for the students, teachers and schools.

I already understood Cambridge International's heritage, tradition and track record. But what I've found alongside all of that is a very strong focus on the future – what it means for learners, teachers and educators around the world, and what types of education services Cambridge International needs to provide.

My first international visit was to India's Outstanding Cambridge Learner Awards ceremony in Mumbai. It was a privilege to be there to recognise students' achievements and the teachers who had received their Cambridge Professional Development Qualifications. Teacher development is such an important part of what we do. It was also fantastic to talk to parents and students about what it meant to them to achieve a Cambridge qualification and the opportunities it helped them realise. Supporting families and communities was one of my main reasons for wanting to be part of Cambridge International.

Every day is different for me, but the common theme is engagement and interaction with colleagues about a diverse range of subjects. Conversations can be about anything – from how we continue to support and add



Cambridge International upholds its heritage and tradition while maintaining a strong focus on the future

value to our long-standing ministry of education customers to developing a new service to meet demand from schools, or what we can do operationally to better meet the needs of exams officers.

In March I visited Cape Town, South Africa, to attend my first Cambridge Schools Conference. Its theme was 'Creating the conditions for success', and it explored how to achieve a positive environment where learners and teachers thrive and deliver to their fullest potential. We looked at the importance of taking a holistic approach to curriculum, learning, teaching and assessment – reflecting on student wellbeing and social-emotional factors, as well as practical solutions to overcoming learning barriers.

Our conferences offer access to thoughtful – and thought-provoking – speakers, and I believe the quality of discussion and insight illustrates the unique level of support available for Cambridge schools. This kind of event provides informal networking opportunities and the chance to talk with so many school leaders and teachers. Getting a view of Cambridge International from different perspectives really helps me and my colleagues focus on how we can meet the future needs of the Cambridge community. 🍌





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# Student on a MISSION

**Adinda Saraswati of ACS Jakarta, Indonesia,** shows how she balances studying for Cambridge IGCSEs with her passion for writing and an interest in current affairs



**L**ast December, 16-year-old Adinda Saraswati was invited to speak at the United Nations Climate Change Conference in Katowice, Poland.

Her presentation focused on Indonesian millennials' concerns about climate change. "It's something young people in the country are worried about," she says. "I told the conference that although millennials are obsessed with gadgets and social media, we do observe our surroundings and don't rely on others for information."

Adinda was selected for the event by the Indonesian Ministry of Environment and Forestry. "I had previously been active on social media and some of my posts went viral," she says.

The conference was attended by government and business leaders as well as other millennials. Adinda describes it as a "proud and unforgettable experience".

"I would love the opportunity to attend another UN conference, and I'd also like to get involved with UNICEF," she adds.

The conference was not the first time that Adinda had spoken in public. Last year, she self-published a book, *Things That Live Within*, and was interviewed by national television at the launch event in front of all the guests.

"I started writing when I graduated to junior high school," she says. "It was a way of expressing my hidden emotions, and it then

“

My school gave me tremendous backing during the publishing of my book and the principals attended the launch to show their support”

developed into stories based on my thoughts and feelings.”

Her book tells the story of a girl who travels to another universe to find her lost cousins in the middle of a 100-year war. The girl must choose between good and evil while trying to survive the war raging between the two sides.

"My school gave me tremendous backing during the publishing of my book and the principals attended the launch to show their support,"

says Adinda. She is now writing her second book with her father, who is also a writer:

"Unlike my first novel, I'm writing short stories in Indonesian that relate to real life."

Adinda is studying eight Cambridge IGCSE subjects: mathematics, physics, English as a first language, Bahasa Indonesia, business studies, history, geography and travel & tourism.

"My favourite subject is history. It teaches me how to answer structured questions and helped me write from different perspectives – skills I can apply to other subjects. My studies help keep me disciplined and ensure everything I do is done to a high standard."

Looking ahead, she says: "My ambition is to work in international television news as a reporter or anchor. I'm also interested in working in the field of renewable energy. But currently, my main focus is on my studies." ■



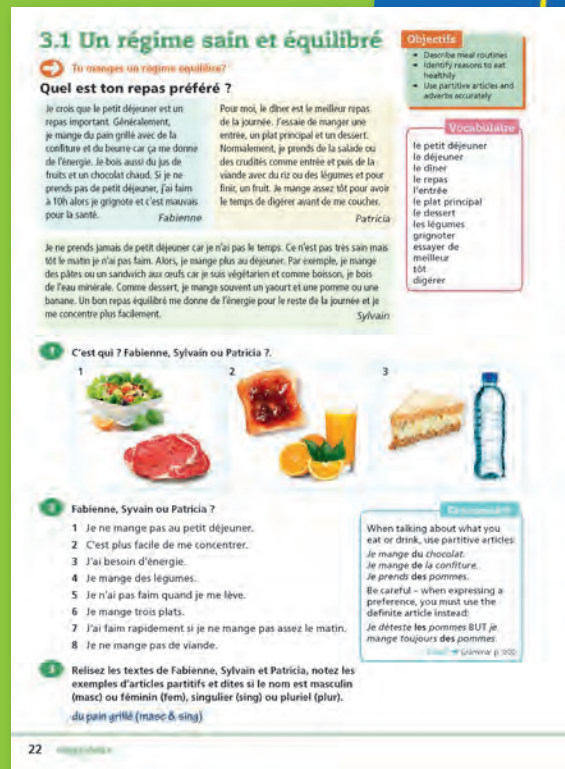
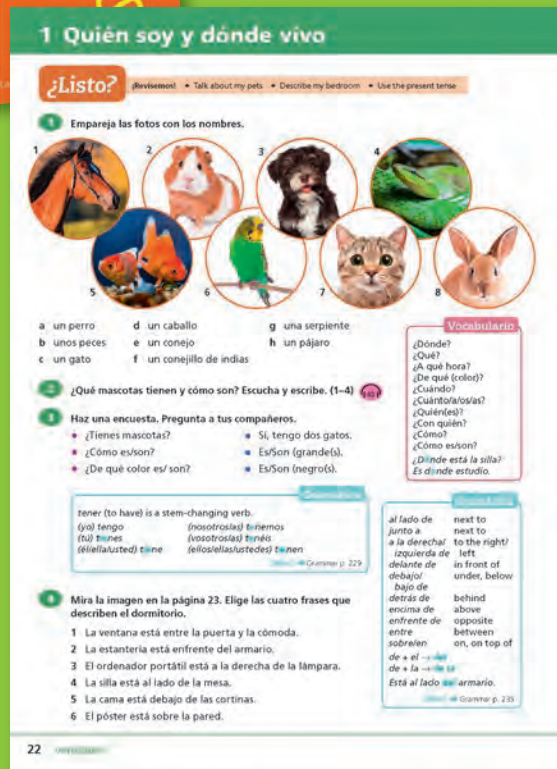
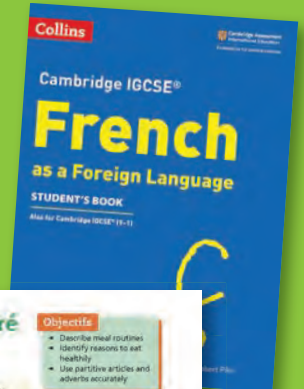
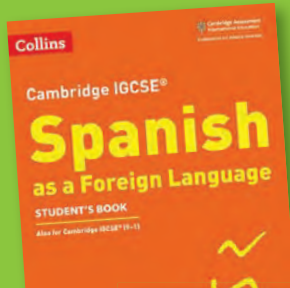
“

I would love the opportunity to attend another UN conference, and I'd also like to get involved with UNICEF”



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# Protecting *our* children

**Paul Ellis, Head of Teaching & Learning at Cambridge International**, looks at how the international education community can work together to help safe-guard children and vulnerable young people

**T**he World Health Organization's latest available data<sup>1</sup> – from 2017 – state that nearly a quarter of children suffered from physical abuse in the past year, more than a third from emotional abuse and one in six from physical neglect. Nearly 1 in 5 girls and 1 in 12 boys had suffered from sexual abuse. With many cases going unreported, the true figures could be much higher.

In the case of the international education sector, as the Council of International Schools (CIS) suggests, the ease of mobility between schools 'can make international education communities prime targets for child abusers'.



ISTOCK

## New protocol for the international school community

In 2014, following a high-profile case of child exploitation and abuse by one individual over a period of 40 years, that involved ten schools in nine countries, the Educational Collaborative for International Schools (ECIS) convened a small group of interested parties to form a taskforce to tackle the safe-guarding issue. Thus the International Taskforce on Child Protection (ITFCP) was born.

The ITFCP has written a new protocol for managing allegations of child abuse by educators and other adults in international communities.

It sets out four main challenges for schools:

- 1. Recruitment** – it is not always easy to obtain honest references on new staff.
- 2. Defining and discussing abuse** – it can be hard to

obtain a shared understanding and even to talk about the issue in some cultures.

**3. Responding under pressure** – many schools do not have rehearsed procedures.

**4. Fear of reporting to authorities** – often because of legal and reputational consequences.

## What schools can do to protect children

All schools need an action plan for dealing with allegations of child abuse. The protocol provides a framework to help schools think about what they need to do before, during and after an allegation to keep children safe:



### PREPARE

- Design, implement and review your policies and procedures
- Educate and train your staff
- Build relationships with external agencies
- Carry out mapping exercises ready for when an allegation comes to light
- Perform regular drills – you are far more likely to encounter a child protection incident than need to escape a fire.



### RESPOND

- Safeguard victims and prevent further harm to others
- Follow established risk assessment procedures
- Launch a clear communication strategy for relevant audiences
- Ensure records are properly kept
- Support the alleged perpetrator appropriately.



### FOLLOW UP

- Learn from incidents and reduce future risk
- Follow guidelines for the redress for victims
- Inform the school community. 📢

## Resources and training

The International Taskforce on Child Protection (ITFCP) has joined forces with the International Centre for Missing and Exploited Children to offer an education portal with resources on how to prevent and respond to child abuse. Find it at [www.icmec.org/education-portal](http://www.icmec.org/education-portal)

Cambridge International is now working with ECIS, the Educational Collaborative for International Schools, to offer online workshops about child protection. Visit [www.cambridgeinternational.org/training-providers](http://www.cambridgeinternational.org/training-providers)

## Find out more

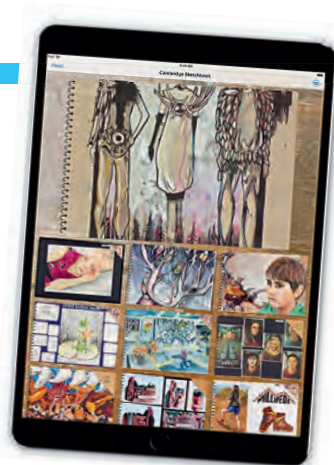
For more information, visit <https://www.icmec.org/education-portal/>



1. [https://www.who.int/violence\\_injury\\_prevention/violence/child/Child\\_maltreatment\\_infographic\\_EN.pdf?ua=1](https://www.who.int/violence_injury_prevention/violence/child/Child_maltreatment_infographic_EN.pdf?ua=1)

# Support for schools

The latest resources and developments  
to support you and your learners



## New app to support Cambridge IGCSE Art & Design

The newly launched Cambridge IGCSE Sketchbook app is a free searchable worldwide database of candidate artwork to help teachers show the standard of work required and the range of techniques students can explore. Teachers can use the app to show how projects can be approached across the curriculum areas.

You can filter the images by assessment objectives, material, technique and level. Each image has a pop-up comment explaining why we picked that image for the app – it might be because of the interesting layouts, great use of annotation or a useful example of materials experimentation.

The app works on iPads and iPhones. Search for 'Cambridge Sketchbook' in the iOS App Store.



## Broadening our Cambridge Primary and Lower Secondary programmes

We're pleased to announce that we will be adding four new subjects to our Cambridge Primary and Lower Secondary programmes in September 2019:

- art & design
- music
- digital literacy
- physical education

Together with the subjects that are already available – English as a first or second language, ICT, maths, science and Cambridge Global Perspectives™ – the new subjects provide more opportunities to develop creativity, expression and personal wellbeing and, as with the existing subjects, are designed to be culturally sensitive.

By extending the programmes, we're able to offer schools a wide foundation of subjects that help prepare students to progress along the Cambridge Pathway, or to other education systems.

Schools can offer as many subjects as they wish and use them alongside a school or national curriculum to suit their local needs and context.

### Resources and training

Curriculum frameworks, teacher guides and schemes of work, appropriate for teaching and learning in local and international schools, will be available from September 2019. There will also be online training available from February 2020 to support teachers delivering these subjects.

The new subjects will be available to registered Cambridge schools that offer Cambridge Primary or Lower Secondary.

Find out more at [www.cambridgeinternational.org/new](http://www.cambridgeinternational.org/new)

## Resource Plus now available in more subjects

Resource Plus gives you access to high-quality videos, ready-made lesson plans and teaching materials to help you deliver engaging lessons and explain challenging topics and skills to your learners.

We've recently added five more syllabuses to our Resource Plus range:

### Cambridge IGCSE

- Business Studies
- Combined Science
- Co-ordinated Sciences
- English – First Language

### Cambridge International AS & A Level

- Mathematics



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Find out how to order Resource Plus and see a free trial at [www.cambridgeinternational.org/resourceplus](http://www.cambridgeinternational.org/resourceplus)



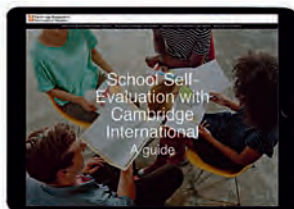
## Managing science practicals



Practical work is an important element of many Cambridge science qualifications and the exams require careful management. That's why we've produced a guidance document for exams officers and teachers on how to use and store confidential instructions, chemicals and materials, and ways to manage the number of candidates and seating arrangements. You can download the document on our website. Simply search for 'managing science practicals' or find it under 'syllabus support' on individual Cambridge International AS & A Level science syllabus pages at [www.cambridgeinternational.org](http://www.cambridgeinternational.org)



## New online guide to our School Self-Evaluation service



We offer a School Self-Evaluation service to help schools review their progress and make informed decisions about areas they need to improve. If you'd

like to find out more, take a look at our new online guide. It explains what the service is and how it works, and includes a video case study with Generation Schools in South Africa. Visit [www.cambridgeinternational.org/school-improvement](http://www.cambridgeinternational.org/school-improvement)

## What's new in the Communications toolkit

Find new posters to promote the Cambridge learner attributes, as well as resources in a wide range of languages to help you talk to parents about the Cambridge Pathway, at [www.cambridgeinternational.org/toolkit](http://www.cambridgeinternational.org/toolkit)



## Endorsed resources

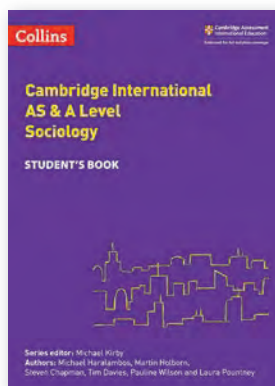
We work with publishers to endorse resources to support your teaching. Our subject experts thoroughly evaluate each of these titles to make sure that they are highly appropriate for Cambridge programmes.

### ICT STARTERS

**RESOURCE:** Five coursebooks and a digital teacher's resource  
**PUBLISHED BY:** Cambridge University Press

Covering ages 5–14, this series helps students develop essential ICT skills, from Microsoft Office™ basics to creating animations and websites. With more practical activities than ever before, and a strong emphasis on e-safety, both students and teachers will feel supported in the classroom with this fresh approach to ICT.

**Visit:** [www.cambridge.org/education/ICT-Starters](http://www.cambridge.org/education/ICT-Starters)  
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### COLLINS CAMBRIDGE INTERNATIONAL AS & A LEVEL SOCIOLOGY

**RESOURCE:** Student's Book  
**PUBLISHED BY:** Collins

This course provides an in-depth and truly international coverage of the Cambridge syllabus. The Student's Book encompasses a range of different societies and contemporary issues, helping students to apply sociological ideas to the world today.

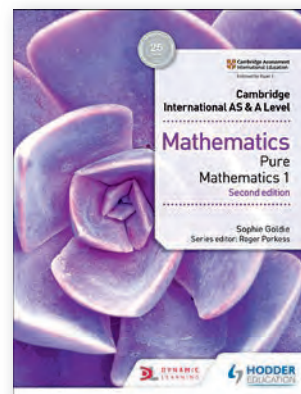
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### CAMBRIDGE INTERNATIONAL AS & A LEVEL MATHEMATICS AND FURTHER MATHEMATICS

**RESOURCE:** Student Books, Student eTextbooks and Whiteboard eTextbooks  
**PUBLISHED BY:** Hodder Education

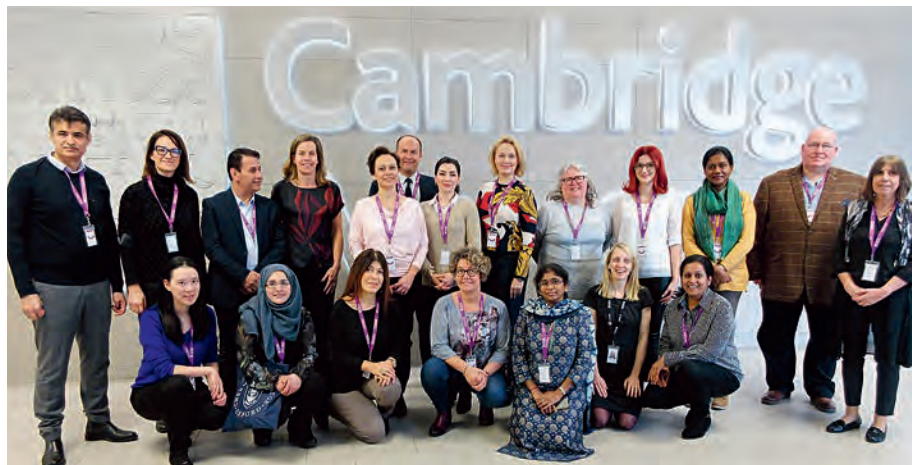
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# Supporting leaders

How a Cambridge workshop helps school leaders develop their skills



## Key themes of the 'Developing your Leadership' workshop

- Vision and strategy
- Effective teaching and learning at a whole-school level
- Monitoring and quality assurance
- Effective professional development
- Change management
- Curriculum planning

Find out more at  
[www.cambridgeinternational.org/professionaldevelopment](http://www.cambridgeinternational.org/professionaldevelopment)

**S**chool leaders and teachers from all over the world came to Cambridge in February 2019 for a four-day workshop aimed at improving their leadership skills and helping them to develop a long-term vision for their schools.

Among the 19 delegates were recently appointed school principals, teachers who hope to go on to become principals in the near future and heads of department.

Experienced trainers Lin White and Steve Burnage delivered a programme designed to help participants return to their schools with proposals to improve their offering to learners and fellow teachers.

Sarah Talbot, Education Officer, Cambridge International, helped organise the 'Developing your Leadership with Cambridge' workshop, which forms part of Cambridge International's Enrichment Professional Development programme.

"We have a teaching strand of enrichment courses and a leadership strand," Sarah explains. "Our leadership strand is made up of two workshops: 'Developing your Leadership', which is four days, and 'Understanding Impact for Senior Leaders', which is two days.

"Developing your Leadership' is about being faced with new challenges. As a school leader, you're suddenly



"As a new leader you come away with a plan of action you can implement in your school"

looking at a much broader picture. You're looking at the whole school environment, which is something your initial teacher training wouldn't have covered.

"You're looking at policies, at a vision for the school, at impact. You'll be thinking about what's actually going on in your school and the professional development you can offer your teachers. This workshop is an introduction to help leaders approach those challenges."

The workshop has been held on seven previous occasions in six different countries, and the Cambridge event proved to be another success.

While the delegates gained a lot from listening to the trainers' advice, they also shared experiences and knowledge among themselves.

"The delegates work as a team to develop an action plan," says Sarah. "That's the theme throughout the four days. So as a new leader, you come away with a plan of action you can implement in your school. It's a four-day developmental process, which is lovely.

"We design our enrichment to be practical. Our model of workshop is very hands-on. We have the best consultants writing our courses and the enrichment team has a systematic programme of reviewing and refreshing where necessary."

With a broad range of topics covered, delegates had a lot of information to take in. But the collaborative nature of the workshops enables plenty of discussion, not just during the workshop but for weeks and months later.

"The atmosphere is very supportive," explains Sarah. "There's a real sense of community. There are WhatsApp groups that still run after the workshops where people share their ideas and experiences. That's what we want from all our training – that real community feel." ■

**Find training:** We offer a large programme of online and face-to-face professional development. Our syllabus-specific workshops cover a wide range of subjects at all levels, and our Enrichment Workshops support the development of teachers and leaders. For details on upcoming training or to book a course, visit our training calendar at [www.cambridgeinternational.org/events](http://www.cambridgeinternational.org/events)





## Workshop wisdom

Here, two school leaders discuss their experiences and learnings from the 'Developing your Leadership with Cambridge' workshop. They are among the 19 delegates who took part in the workshop in February 2019



**Nura Dira** is a new school leader having taken on the role of Head of Academics at Queen Anne Cambridge International School, Iraq

### *Nura says:*

"I found the workshop really helpful. I am in my first academic year as a leader so I was hoping that this course would enable me to gradually pick up new skills that I could use at my school, and build my confidence. We covered so much during the workshop and as a result, I feel I can build a stronger relationship with my teachers. One of the main things I learnt is that the mission, vision and values of the school are

so important. A set of values will act like guidance – rules we can all follow and abide by. We learnt that everyone should be involved in implementing the school's values – including parents and students – and everyone should have a say in what those values are.

We talked a lot about a school development plan and I think we can use this to help my school improve in the future. I will

Above and below:  
Workshops are a great opportunity for delegates to work together and share ideas



"I now feel I can build a stronger relationship with my teachers"

hopefully return a stronger leader, and that will have a positive impact on the school in general.

The workshop also gave us a good understanding of what Cambridge leadership is about. The Cambridge approach is friendlier and more focused on students."



**Mubeen Ashraf** is the newly appointed Director of Studies at Cherwell College, Oxford, UK, which offers Cambridge qualifications for 11- to 18-year-olds

### *Mubeen says:*

"I am a newly appointed Director of Studies and intended to gain a better understanding of Cambridge leadership at the workshop.

We offer the Cambridge programme at my college, providing bespoke education for students from the age of 11 to 18. I wanted to have a general overview of leadership within schools.

I was pleasantly surprised that there were attendees from lots of different countries. It provided the opportunity to speak to leaders from schools around the world and discuss their different levels of expertise. I also enjoyed the group-based work because this is a model we use within the college.

The workshop has provided a broader range of ideas and consolidated ideas at the college, which we can continue to implement with confidence.

I'd recommend the course because it's a doorway into leadership and introduces the main concepts and ideas you need to consider.

The workshop gives delegates a discussion forum, allowing senior leaders time for reflection and sharing of ideas."



"It's a doorway into leadership and a great opportunity for sharing ideas"





# DEDICATED TEACHER AWARDS



## Thank you to our teachers

Teachers play an important part in shaping futures, and our Dedicated Teacher Awards recognise the hard work and commitment that teachers put in every day. Thank you to everyone who nominated this year, we have been inspired and moved by your stories. Well done to all of our nominees for your dedication to learning and teaching.

## Congratulations to our winners



**Ahmed  
Saya**  
Pakistan



**Candice  
Green**  
Australia



**Abhinandan  
Bhattacharya**  
India



**Sharon  
Kong Foong**  
Malaysia



**Jimrey  
Dapin**  
Philippines



**Anthony  
Chelliah**  
Sri Lanka



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**Better Learning**



# A view from... MALAYSIA



**Chris Terry** (left), Head of Secondary at Straits International School, Malaysia, talks to **Eve Sewell**, Cambridge International's Marketing Communications Manager for Southeast Asia & Pacific



Being able to see progression from Cambridge Primary through to Secondary is of key importance to the school

## **Eve Sewell: How many students are there at Straits International School?**

**Chris Terry:** We have 588 students across our two campuses in Penang and Rawang. We do Cambridge Primary, Lower Secondary and IGCSE. We also do Checkpoint tests in Years 6 and 9.

## **ES: Which Cambridge IGCSE subjects does the school offer?**

**CT:** English Literature and Language, English as a Second Language, Mathematics, Additional

Mathematics, Music, Art, Drama, Physical Education, Cambridge Global Perspectives™, Business, History, Geography, Bahasa Malaysia, Foreign Language Mandarin, Second Language Mandarin, First Language Mandarin, Biology, Chemistry, Physics, Combined Science, Co-ordinated Sciences, ICT and Computer Science.

## **ES: Why do you feel that the Cambridge curriculum is right for the school?**

**CT:** Cambridge International is a well-respected and rigorous exam board. We like that we

can see progression from Cambridge Primary through to Secondary using the curriculum and Cambridge Checkpoint tests.

## **ES: What extra-curricular programmes are there?**

**CT:** There are currently 23 students on the Duke of Edinburgh's International Award programme. We also participate in the World Scholars Cup (qualifying for the final last year at Yale), Model United Nations, international and Malaysian debating competitions, TED-Ed presentations and sports competitions. In the SAISO maths competitions, we got some of the highest scores in Penang, which is amazing when you consider we are a small community school. We feel it is vital that students get a holistic education that goes beyond the classroom and is based on healthy competition, while also celebrating everyone's efforts to challenge themselves.

## **ES: What can you tell me about the ethos and values of your school?**

**CT:** In keeping with its standing as one of the most modern and forward-thinking schools in Malaysia, Straits International School is proud of its dynamic and innovative approach to school life. It provides a safe and happy learning environment which promotes academic challenge, a sense of community responsibility and the development of well-balanced, caring pupils who are equipped for their future.

## **ES: What makes you most proud of your students?**

**CT:** Our students are very hard working. In our latest results we had 97 per cent A–C grades and 51 per cent A\*/A. They are not just outstanding academically, but also in sport, debating, charity work and the dramatic arts. We love celebrating success, and I am proud of our students' positive and proactive approach to education. ■

## **Chris Terry**

has been Head of Secondary at Straits International School for two years. He is a teacher, author and Specialist Advisor to Ofqual – the exams regulator in England. He has been an examiner for 13 years to all the major UK exam boards. He has taught in Saudi Arabia, Oman, Qatar and the UK. He has also delivered extensive teacher training internationally and in the UK. In his spare time, he is a creative director of a theatre company.

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