bcs
The Chartered Institute for IT

Empowering Teachers: Inspiring Young Minds

Computing at School

Barefoot

Impact Report 2025

Introduction

It's been a privilege to witness the extraordinary growth and impact of Computing at School, made possible through our strategic partnership with BCS, The Chartered Institute for IT. Together, we've built a movement that champions computing educators and empowers them to shape the future.

At the heart of CAS is a vibrant community of volunteers—teachers, technologists, and advocates—whose passion and generosity continue to inspire. Their tireless work ensures that every child, in every classroom, has the opportunity to engage with computing in meaningful and exciting ways.

This report celebrates their achievements and reaffirms our shared commitment to supporting educators as they lead the way in preparing young people for a digital world.

Simon

Professor Simon Peyton Jones OBE, FBCS
Founder & Co-Chair
Computing at School

At BCS, we believe that every young person deserves the opportunity to thrive in a digital world. This year's Impact Report is a powerful testament to the work of Computing at School (CAS) and the wider BCS community in making that vision a reality.

From the classroom to the conference hall, from grassroots volunteers to national policy influencers, our collective efforts have reached over 90% of UK schools, supported more than 3.5 million pupils, and empowered thousands of teachers to deliver high-quality computing education. These achievements are not just numbers—they represent real change in real lives.

We've seen a 370% increase in Computing GCSE entries since 2014, and schools supported by CAS now enter 18% more candidates, with those learners achieving, on average, a grade 0.2 higher than their peers. That's the equivalent of a year's extra progress—an extraordinary impact.

This year, we've also responded to the growing presence of AI in education. Through new resources, training, and community support, we're helping teachers navigate this evolving landscape with confidence and care, ensuring that technology enhances learning while safeguarding students.

None of this would be possible without the dedication of our educators, volunteers, partners, and supporters. Your passion and commitment continue to drive progress and innovation in computing education.

As we look ahead, our mission remains clear: to ensure every teacher is confident, connected, and capable—and that every learner has the knowledge and skills to thrive in the digital age. Thank you for being part of this journey.

Together, we are shaping the future.

Julia

Julia Adamson MBE, FBCS
Executive Director, Education & Public Benefit
BCS, The Chartered Institute for IT

Who are we?

Through Computing at School (CAS), BCS, The Chartered Institute for IT is dedicated to revolutionising computing education. CAS is the subject association for computing, and a community of professional practice that forms a nationwide network of computing educators supported by BCS.

Since being founded in 2008, CAS has grown from a grassroots movement into a nationwide force that is committed to encouraging and equipping school staff to offer the best possible computing curriculum for all. Over this period the importance of computing has grown significantly, particularly with the advent of generative AI, which offers computing teachers both opportunities and challenges.

This report demonstrates the impact that BCS has already made through CAS, the work we do, the challenges we face, and our priorities as we move forwards in an increasingly digital world. We also hope that it will inspire you to be part of the change and play a crucial role in supporting all young people to become digitally literate.

Computing at School

Barefoot

Our journey to revolutionising computing education

From a grassroots movement to a revolutionary force, CAS has always been committed to giving every teacher the skills and confidence they need to deliver engaging, inclusive and effective computing lessons. Here's how we got to where we are:

2008 CAS founded as grassroots movement

2010 Early influence on curriculum discussions

2014 Computing becomes statutory in England

2014 Launch of Barefoot

2018 CAS becomes NCCE delivery partner

2023 370% increase in Computing GCSE entries since 2014

What have we achieved so far?

Through CAS, BCS has worked tirelessly to re-envision computing education. Our success has seen us instrumental in:

Influencing policy

Established computing education as an entitlement for every child, building the business case for government investment in continuing professional development (CPD) for teachers.

Supporting teachers

Provided over 141,000 teachers across all age groups with access to CPD and resources.

Building confidence

Improved the confidence of over 115,000 primary teachers through the innovative Barefoot programme.

Improving opportunities

Helped to drive a 370% increase in Computing GCSE entries since 2014.

90%

of all UK primary and secondary schools have accessed support from us

10,500

new members welcomed in the last 12 months

In recent years, our impact on computing education has only continued to grow. Our achievements have included:

Remaining relevant

In the last 12 months CAS has welcomed over 10,500 new members.

Growing learner participation

The schools that BCS support through CAS enter 18% more candidates for Computing GCSEs. That's an extra 7,000 young people each year who are better equipped for our digital world.

Improving outcomes

Young people in secondary schools that are supported by BCS through CAS achieve a Computing GCSE grade that is on average 0.2 higher than those at other schools. That's the equivalent of a year's extra progress.

Our impact in 2025

Through CAS, BCS has helped drive a

370%

increase in Computing GCSE entries since 2014

Schools BCS supports through CAS enter

18%

(7000) more candidates each year

Those candidates

achieve 0.2

of a grade higher on average than those at other schools. That's the equivalent of a year's extra progress*.

*Hattie, 2009.

3.5 million

pupils supported through the Barefoot programme

85%

of UK primary schools reached through the Barefoot programme

These programmes don't just build skills – they foster confidence, creativity, and a lifelong curiosity about technology. We're proud to support this vital work and celebrate the lasting impact it continues to have in classrooms across the UK.

Arm Education

Improved confidence

of over 115,000 primary teachers through the innovative Barefoot programme

186,742

members of our community globally

10,000+

specialist community group membership

What is our vision?

Every learner has the knowledge and skills to thrive in the digital age through access to a high-quality computing education.

Digital technology shapes every part of modern life. Every learner needs a high-quality computing education to leave school digitally literate, and those who wish to become future creators, developers and implementers of digital knowledge, products and services need secure foundations to achieve their goals.

We are working to make our vision a reality for every learner by supporting teachers through community-generated resources, a discussion forum and professional development events.

Since digital technology includes the use of AI, we've also introduced CPD and resources to support teachers of all subjects in ensuring their students are digitally empowered by this constantly evolving tool.

What is our mission?

To ensure every teacher has the skills and confidence to deliver engaging, inclusive and effective computing lessons.

Teachers make a difference. We know that teacher quality is one of the most powerful influences on student outcomes*, however, with computing education currently facing a critical shortage of specialists, the challenges are clear.

- Computing teacher numbers in England fell from **11,748 in 2010** to **8,435 in 2023****.
- Only **30%** of computing teacher recruitment targets were met in 2022–2023***.
- **44%** of computing teachers in secondary schools are non-specialists†.
- In Scotland, **12%** of pupils have no qualified computing teacher. This number rises to almost **50%** in rural areas††.

Given this challenging landscape for computing education, achieving our mission is absolutely essential. We will work relentlessly to ensure that teachers are confident, connected, and capable so every student has access to meaningful, modern computing education.

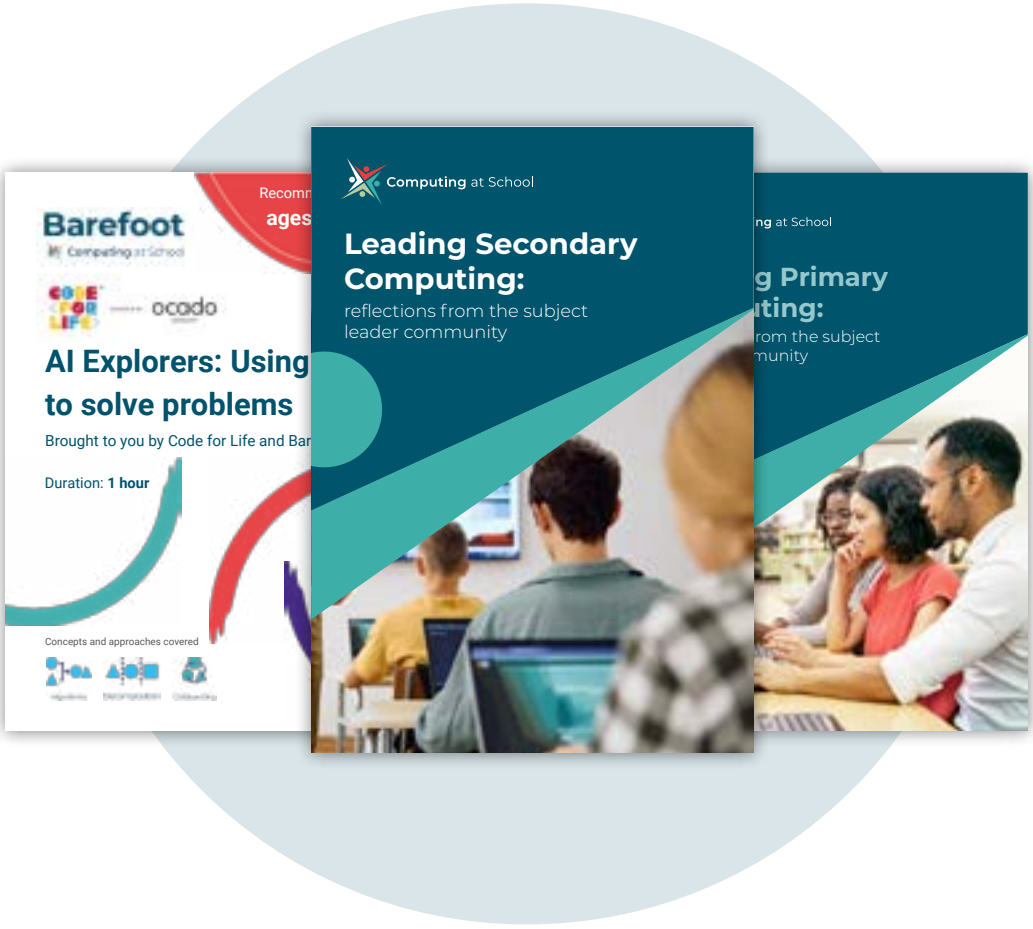
*Hattie, 2009. **Kemp, Peter E.J., Wong, Billy, Hamer, Jessica, Copsey-Blake, Meghan. (2024). SCARI Computing Report - teacher workforce. King's College London. Available at: kcl.ac.uk/scaricomputing. *** UK Government Initial Teacher Training Census, 2022. † National Audit Office, 2016. ††Reform Scotland, 2024.

What do we do?

To achieve our mission, we help computing teachers develop their professional knowledge and expertise, make connections, and share resources and insights through our programmes. We deliver this support in two main ways: building the CAS community and providing the resources teachers need.

Building our community

Through CAS we connect thousands of computing teachers through peer-led professional learning communities, events and conferences, workshops, and training. We are now also connecting thousands of teachers who aren't necessarily computing teachers to support them around using AI – both as a teacher and with students.



Providing the resources teachers need

Through our progammes, we provide teaching resources and support teachers to share lesson plans, advice, and best practices – and our reach has been phenomenal:

- Since 2012, 186,742 members of our community globally have engaged with our offer – and 141,318 of these are in UK schools.
- 22,432 UK primary and secondary schools have accessed our support – that's 90% of all UK primary and secondary schools.

Over the following pages, you can read about our programmes of work in more detail and discover the enormous impact they have made in helping learners to thrive in the digital age.

90%

of all UK primary and secondary schools have accessed our support

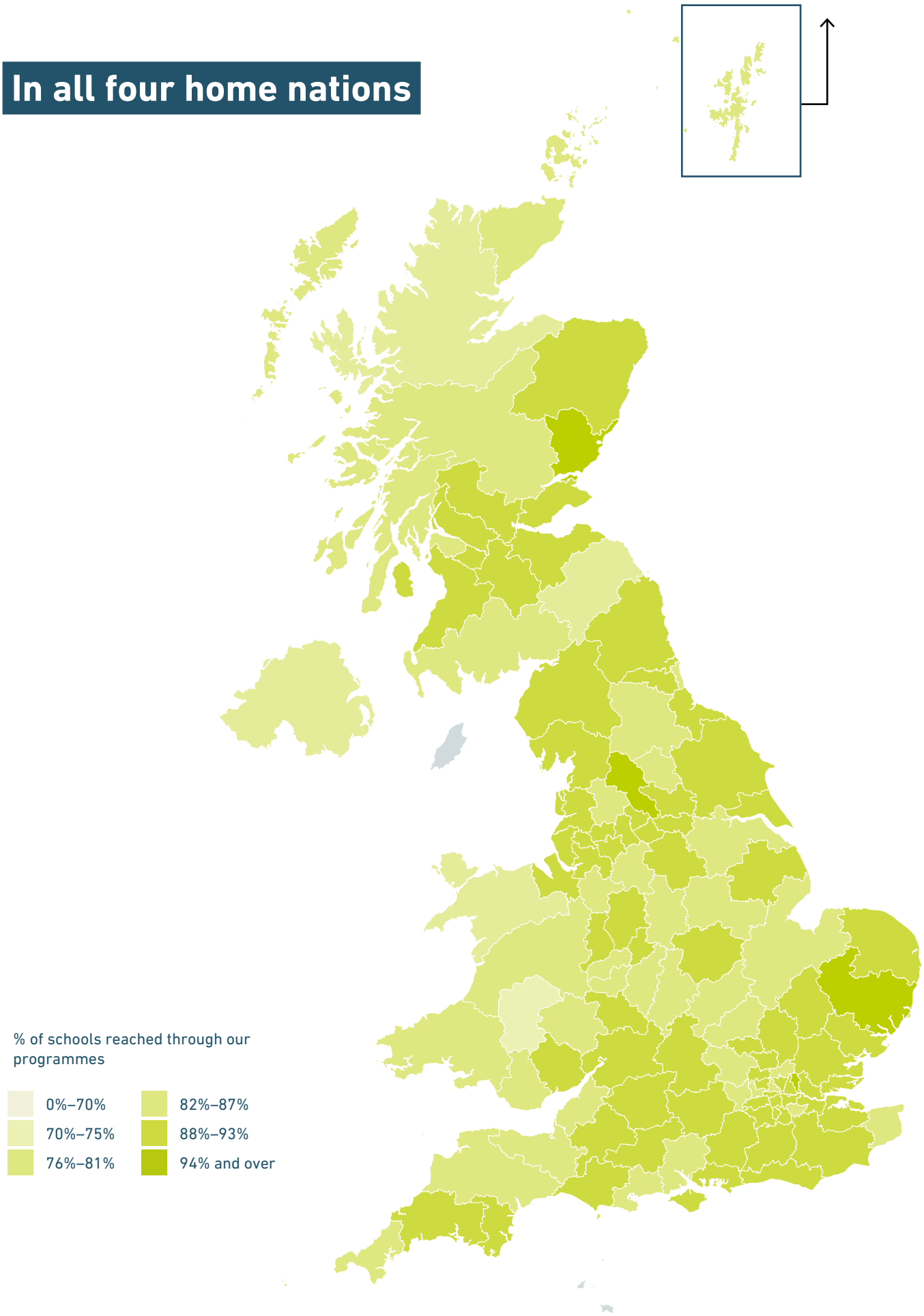
Since 2012

186,742

members of our community globally have engaged with our offer

What do we do?

In all four home nations



The difference we make for teachers

"It's been so valuable to learn from experienced colleagues, share ideas and resources and have a network of thoughtful and supportive professionals who have guided and shaped my career. CAS is where I go to discover and discuss anything related to the teaching and learning of computing: qualifications, resources, research, workload, tips, recommendations and opportunities."

Secondary School Head of Computing

"Everything! The training offered, the advice given, the resources provided, the contacts I've made!"

Teacher

"I advise all new recruits to access it. Totally invaluable resource."

Teacher

"The forums and meetings have helped me better understand how to tackle the subject and think about pedagogy to better understand the mechanics of what I've seen in observed classes. It has also provided some real inspiration about what it is possible to achieve for students. I've found the resources and community invaluable so far and I hope that I can contribute back in the future."

Trainee Computing Teacher

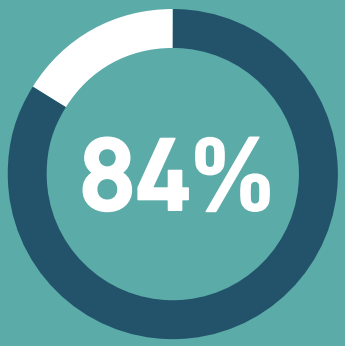
We shape early computing experiences with Barefoot

Children's experiences at primary school shape their early attitudes towards computing, so it's crucial that teachers are able to deliver high-quality computing lessons – even if they have little or no background in the subject. That's where our Barefoot programme comes in.

This trailblazing programme provides free, up-to-date, curriculum-aligned resources, live lessons, and teacher workshops that are focussed on building computational thinking skills in children aged from 3 to 11. Barefoot draws on the expertise of volunteers, supports non-specialist teachers to gain confidence and competence, and it is continually updated.

> *"I use lots of the lesson resources across the primary age range and children really engage with them. The concepts are very clearly explained within the lessons but also, for teachers, the information on the website is excellent. Thank you for making these resources available – they make a big difference."*
>
> Computing Coordinator, Primary School

> *"Through leading Barefoot sessions, I honed my presentation skills, which paved the way for my journey as a full-time consultant. I'm incredibly grateful for this opportunity."*
>
> Barefoot Volunteer



of teachers who accessed our resources said they understood computational thinking, compared to just 57% of all teachers*.

What's the impact?

115,000 teachers from 85% of UK primary schools have supported 3.5 million pupils through using Barefoot.

Since its inception, Barefoot has developed primary teachers' confidence with computational thinking. For example, 84% of teachers who accessed the programme's resources said they understood computational thinking, compared to 57% of all teachers*. On top of this, Barefoot volunteers have also reported benefits for their professional development.

> *"It was pitched perfectly so as to be relevant and appropriate for EYFS, KS1 and KS2, and will form an exceptionally useful foundation for our school to rebuild our computing curriculum."*
>
> Deputy Head Teacher

> *"Barefoot has supported teacher CPD and computational thinking understanding for both children and staff. There is a range of wonderful resources, all free and easy to adapt."*
>
> Primary Teacher

3.5m
pupils supported

115,000
teachers engaged

85%
of UK primary schools reached

*Ipsos Mori, 2016.

What do we do?

We support innovation through our specialist community groups

While we work hard to support teachers who are new to computing, we also support computing educators who are innovating. We have 12 online specialist groups within CAS. Some focus on a particular topic such as physical computing, which has been supported by the Arm School Program, while others focus on AI or a particular phase of education. Each group runs regular online community events exploring 'hot topics' around the theme of the group.

What's the impact?

CAS specialist community groups now have membership of over 10,000 and there have been over 4,400 bookings onto online community events to date. Those attending the events have awarded them a rating of 4.6 out of 5 on average.

10,000+

specialist community group membership

Our specialist CAS community groups

Topic focused

AI

Include

Interactive 3D and Gaming

Physical Computing

Research

Resource Review Panel

Phase based

Primary

Secondary

A-Level

Vocational Qualifications

Trainee & ECT

Higher Education

What do we do?

We support schools to use AI safely and effectively

AI is of growing interest in schools, and it's clear that it's here to stay. We know that it's critical that schools engage with AI proactively to ensure it benefits staff and students alike, yet our recent survey of 5,298 secondary school teachers from 2,600 schools in the UK identified that limited progress is being made. It also revealed that there are real concerns over the lack of practical support for its safe and effective use.

The key findings from our survey* included:

- **67%** of those responding got their introduction to AI via ChatGPT.
- **41%** of those responding said their school did not have an agreed approach to AI.
- Teachers told us that they **lacked confidence** around AI, and they didn't have access to guidance, training or support in how to use it in their day-to-day jobs.
- The most common uses of AI by teachers were for **creating quizzes and test materials**, although some used it to help them write communications to parents and reports.
- There are still very **clear barriers** to more widespread uptake of AI by secondary school teachers, ranging from the lack of an AI policy in school to the lack of formal training, as well as the negativity surrounding chatbots such as ChatGPT.

As a result of the survey's findings, we drew together an expert range of material around AI policies, AI tools for teachers, as well as teaching resources for those who teach 10 to 18-year-olds, with different resources for each age group.

What's the impact?

Our AI content, materials and resources available through CAS have been fundamental in helping teachers to navigate a quick shift in the use of technology. As a result, CAS has played an integral role in supporting whole-school policies around the deployment of AI and, most importantly, in keeping children safe.

of those responding got their introduction to AI via ChatGPT

of those responding said their school did not have an agreed approach to AI

*BCS research on Secondary School Teachers and AI - https://www.bcs.org/media/11kcvxvn/bcs-ai-paper-december-2024.pdf

What do we do?

We inspire and educate through the annual CAS Conference

Every year we bring together a fantastic line-up of expert speakers to share ideas and the latest innovations in computing education at the CAS Conference. The event also gives delegates plenty of opportunities for networking with their peers.

In 2025, teachers enjoyed over 40 workshops that featured topics ranging from using stories to introduce computational thinking to the youngest learners, to developing esports and effectively integrating AI. Baasit Siddiqui delivered an inspiring and motivational session, while BBC Wonderblocks previewed new Barefoot resources being developed to work alongside the BBC programmes.

> *"The CAS conference is always an inspiring day which leaves your head buzzing with loads of new ideas to think about and try out in your classroom."*
>
> 2025 CAS Conference Delegate

> *"The conversations were the highlight - from discussing creativity in programming, debugging strategies, reminiscing over my old uni days, to that moment when someone said 'this is what I needed'."*
>
> 2025 CAS Conference Delegate

40+
workshops

of delegates rated the CAS Conference 4 stars or more

What's the impact?

Feedback shows that teachers are inspired by the conference. Not only do they say that it's a place where they can gather new ideas and build personal networks to share best practice, but they also state that after leaving the event they return to the classroom with a renewed enthusiasm for teaching computing.

> *"I had a brilliant time today at the CAS Conference 2025, especially during a Physical Computing workshop where we got hands-on with BBC micro:bits and Raspberry Pi Picos, bringing code to life in the real world!"*
>
> 2025 CAS Conference Delegate

The power of collaboration

BCS is only able to drive the revolution in computing education thanks to the generous financial support of our partners. We're proud to work with a wide range of organisations who are equally passionate about enabling all young people to become digitally literate.

The Computing at School programme is a proud recipient of an Epic MegaGrant. The support has enabled BCS to significantly further its mission through CAS.

Epic Games and CAS have worked together to give UK educators hands-on experience with emerging technologies in Interactive 3D and Gaming. With support from the Epic Education team, Through CAS, BCS is helping teachers build the knowledge and confidence to prepare students for careers in this dynamic field using industry-standard tools.

"At Arm, we believe in empowering every young person to shape the future through computing. The work of Computing at School and Barefoot has been instrumental in making high-quality computer science education accessible, relevant, and inspiring for teachers and learners alike. These programmes don't just build skills – they foster confidence, creativity, and a lifelong curiosity about technology. We're proud to support this vital work and celebrate the lasting impact it continues to have in classrooms across the UK."

Arm Education

"Computing at School's resources, thematic communities, and collaborative events continue to be an invaluable layer of support for computing teachers, connecting them with practical ideas, shared expertise, and networks that build confidence in the classroom. This grassroots strength perfectly complements the national CPD and curriculum support offered by the NCCE, and together, we will continue to collaborate to improve computing provision and support into the future."

STEM Learning

"The aim of Ciena's digital inclusion programme was to reach out to as many school children as possible to give them access to and improvement their computer literacy. Through the work of the Barefoot programme in Northern Ireland we have done just that ... and so much more. In the three years of Ciena's support with the Barefoot programme, we have engaged with 110 new schools and re-engaged with 239 schools using in-person and online tools to deliver Barefoot programmes. This interaction will empower teachers to deliver digital literacy for every child which will hopefully inspire a love of computing. Ciena are honoured to be part of this programme."

Ciena

What are our priorities for the next three years?

We've made huge progress so far, but challenges still remain. The strategic priorities that BCS will focus on through CAS from 2025 to 2028 are:

1. Supporting teachers and schools to develop all young people's digital literacy.
2. Supporting teachers with the incoming curriculum for computing, with a focus on the new GCSE.
3. Expanding free, high-quality resources across all key stages.
4. Advocating for equity and inclusion in computing education policy.
5. Strengthening local communities.
6. Closing the teacher confidence gap - especially in underserved areas.
7. Measuring and sharing evidence of impact to inform future policy.

How can you support us?

We are only able to drive the revolution of computing education through these programmes thanks to the generous financial support of our partners. If you share our ambitions for an inclusive digital society and you are passionate about enabling all young people to become digitally literate, we'd love to hear from you.

We have exciting and ambitious plans to expand our impact even further, and with your support, here are just some of the things that we could achieve:

- Developing and propagating equitable and inclusive teaching practices for computing, to ensure a more engaging and relevant experience for all young people.
- Providing new CPD offerings and classroom resources focused on AI, digital literacy and physical computing, to ensure that teachers are prepared to tackle the shifting challenges of the digital world, and can share a range of progression pathways with their students from digital apprenticeships to Computing degrees.
- Delivering targeted support to teachers working in underserved areas to boost their confidence, build their skills, and foster active local communities of practice for reciprocal support.

Whether it's a small, targeted project, the sponsorship of a community, or a multi-year national reach programme grant, we would love the opportunity to work with you to ensure every learner has the knowledge and skills to thrive in the digital age through access to a high-quality computing education.

If you'd like to join us on our mission and help us make an even bigger impact in the field of computing education, please don't hesitate to contact us today at partnerships@bcs.uk.

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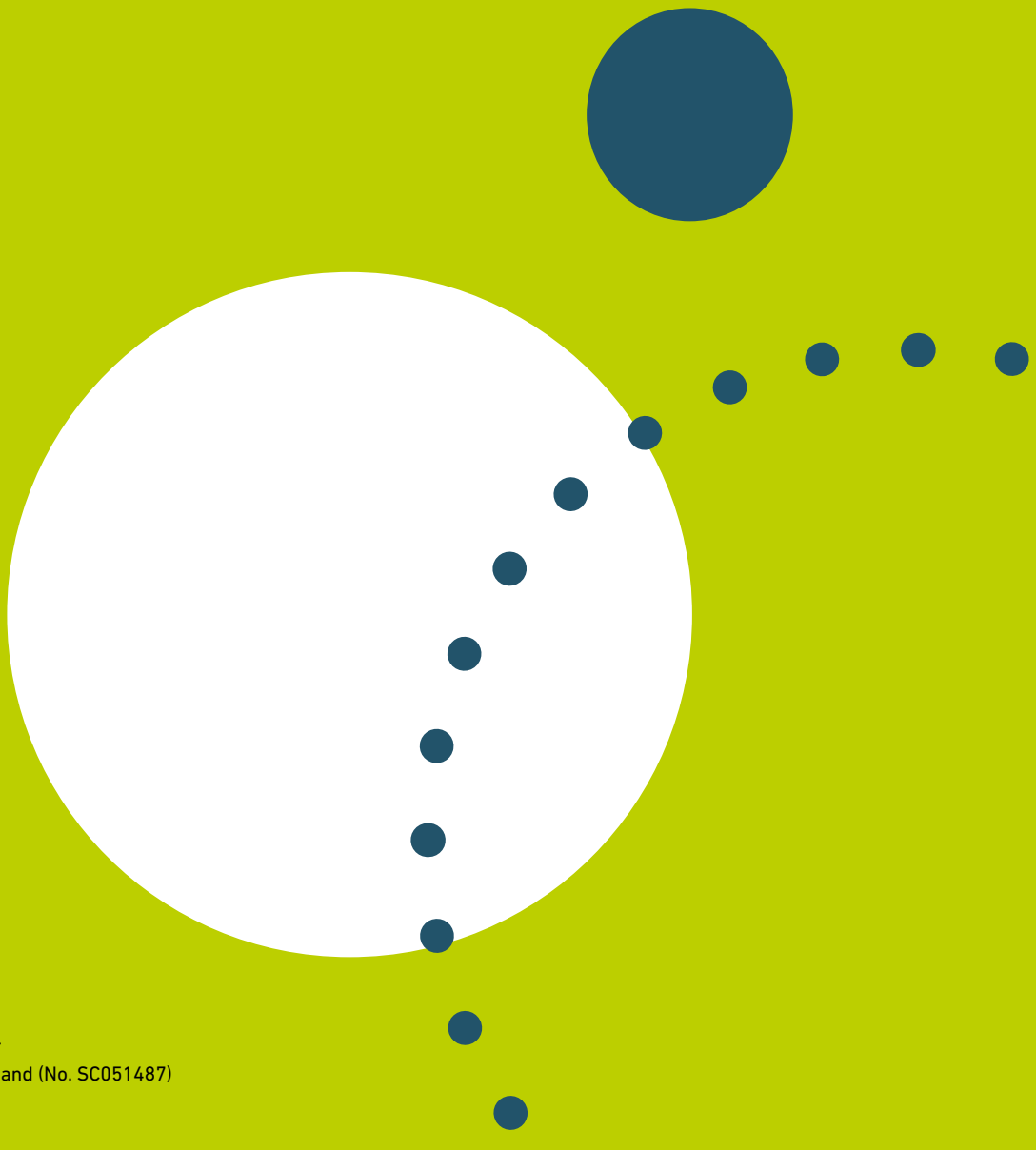

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