

The Computer Science Accelerator Programme

A world-leading computing education
for every young person



National Centre for Computing Education

The National Centre for Computing Education (NCCE) is a virtual organisation, funded by the Department for Education, and has been established to ensure that every child in every school in England can have a world-leading computing education. We are passionate about achieving this vision.

We have brought together the best expertise in computing education to provide wide-ranging support and opportunities for teachers of computing at all stages of their careers. A one-stop shop for computing education, we offer: leadership; expertise; evidence-based interventions; high quality face-to-face and online CPD opportunities; free, quality-assured and curriculum-linked resources; and a nationwide network of Communities of Practice to enable teachers to collaborate with their peers.

The National Centre for Computing Education is run by a consortium, made up of STEM Learning, the Raspberry Pi Foundation and BCS, The Chartered Institute for IT.



The National Centre offers a once-in-a-generation opportunity to firmly establish computer science as a foundational subject discipline that will enable all our young people to be active participants in the complex digital world that surrounds them.

I am delighted to have a role in translating the big vision of the new computing curriculum into a vibrant reality in every classroom in the country.

NCCE, Chair, Simon Peyton Jones.

Welcome

Simon Peyton Jones of Microsoft Research has achieved worldwide recognition for his work on programming language among other things and will now lead the work of the National Centre for Computing Education as it improves the teaching of computing and drives up participation in computer science.

Professor Peyton Jones brings a wealth of experience and expertise to this role. This will be vital in making sure the Centre, which is backed by a consortium made up of some of the country's most accomplished tech organisations, is able to train teachers in the latest digital skills.

Why take part in our CPD?

We are committed to offering teachers the best possible professional development opportunities, and collate and evaluate feedback from participants to ensure that we maximise the impact of every aspect of each course we run.

As well as improving subject knowledge and skills, our CPD will help teachers to get more satisfaction from their jobs, gain a sense of accomplishment, and enable them to confidently progress in their careers. Teachers will return to the classroom full of ideas to inspire and motivate their students, ready to make a difference to their life chances.

Why is the Government investing in computer science education?

Computing education is vital to the daily lives of young people, equipping them with key skills. It contributes to their:

- **personal development and qualities:** increasing their sense of self-worth, resilience and agency through the positive experience of creating working solutions to real challenges
- **intellectual development:** teaching them to think computationally about problems, issues and opportunities and to apply this in broader contexts
- **wider understanding of the world:** where all aspects of human activity are being shaped by the application of computational thinking





Only **52%**
of schools are currently offering GCSE computer science

Our solution: The Computer Science Accelerator Programme

Computing education is vital to the economy:

- **The demand for computing skills and knowledge is growing.** Employers predict that the number of careers relying on computing skills will grow significantly.
- **Many young people currently at school could end up in jobs that do not yet exist.** Jobs in cybersecurity make up 15% of UK-based IT jobs currently. This is set to grow by 10% each year until 2020.¹
- **The more digitally skilled a UK job is,** the higher its annual salary. Jobs requiring digital skills command higher salaries, at £42,578 compared to £32,477 for those that do not. Digital tech workers are also more productive, on average, by £10,000 per worker.²
- **Issues of social mobility do not exist in the same way in the digital industry.** A young person from a less advantaged background will find a career path more open to them in IT than some in of the longer-established professions such as medicine, law or accountancy.³

But the challenge in the classroom is significant:

- **Most GCSE computer science is taught by a non-specialist:** 75% existing teachers do not have academic background in the subject (vs 25% science teachers)
- **Not enough schools offer GCSE computer science:** it is currently only available in 52% secondary schools⁴
- **Not enough students take computer science qualifications:** while numbers are growing, only 11% of Key Stage 4 students take GCSE computer science. Girls are outnumbered in GCSE classes by 4:1
- **Computing teachers often work alone in their schools:** operating without departmental colleagues to provide support and share ideas
- **Teachers' professional development isn't always a priority:** the misconception that CPD requires significant investments of time and money is a common barrier

The Computer Science Accelerator Programme will help you and your school to overcome these challenges.

The Computer Science Accelerator Programme is a supportive professional development programme for those teaching, or wanting to start to teach, GCSE computer science.

The programme offers:

- free, quality-assured and curriculum-linked resources to help teachers to plan, deliver and assess learning
- regionally delivered CPD and local CAS (Computing at school) Communities of Practice so you can network with other computing educators where you live and work
- expertly-designed content with a focus on developing knowledge of the entire GCSE curriculum and encouraging inclusive teaching practices
- links with industry partners to bring the computing curriculum to life
- support from Computer Science Champions, who will signpost you to the most appropriate help and the relevant next steps
- the subject content knowledge required to teach Key Stage 4 computer science, with topics including Python programming and cybersecurity
- flexible learning and personalised professional development delivered through a combination of face-to-face and online courses
- generous bursaries for schools and colleges to support participation in face-to-face CPD
- access to free online courses, enabling teachers to learn at a time and place that suits them

75%
of teachers do not have an academic background in computer science

Time and money are common barriers for professional development



¹ After the reboot: Computing Education in UK Schools: Royal Society Nov 2017 ² Moving on Up: an analysis of social mobility in IT, BCS April 2018
³ Tech Nation Report 2018 ⁴ The Roehampton Annual Computing Report 2018



£220
per day for your school, to help you attend CPD

Programme costs and bursaries

We recognise it can be difficult to get out of the classroom to attend CPD, so we offer bursaries to state-funded schools and colleges across England to help.

The bursaries have been designed to maximise the reach of our CPD and can contribute towards the costs associated with attending professional development, including course fees, travel and supply cover. They exist to support you through 40 hours of CPD to complete the Computer Science Accelerator Programme.

The Computer Science Accelerator Programme and its face-to-face CPD courses are free to secondary teachers of computing or computer

science, in English state-maintained schools without a post A level qualification in computer science or a related subject. Online CPD is free to all teachers.

If you are entitled to bursary support, your school will receive £220 per day (or £440 per 2 day course) up to a maximum of £880, payable after completion of each face-to-face CPD activity.

Your school will receive a further £600 once you have completed a minimum of two online and two face-to-face local courses and a short online subject knowledge test, payable on completion of the programme.

Certification and next steps

Once you have successfully completed the Computer Science Accelerator Programme, you will receive: the National Centre of Computing Education certificate in GCSE subject knowledge.

Completing the programme demonstrates that you have reached a nationally recognised benchmark of competence, recognised within the computing community. It will help you to progress in your career and will also encourage

school leaders to support you and others participating in National Centre for Computing Education CPD.

As a graduate of the programme, you are also automatically entitled to free CPD from the network, and the study you have undertaken with the programme will count towards your National Centre for Computing Education secondary teacher accreditation credits.

This Programme reflects the Government's determination to make sure pupils are computer literate and versed in the fundamentals of computer science and computer programming.

Department for Education, School Standards Minister, Nick Gibb.



Sign up
now!

It's easy.
Visit teachcomputing.org
to register and start your
journey today.

Any questions?

If you still have questions about any aspect of the Computer Science Accelerator Programme, please send them to: info@teachcomputing.org and we will be in touch to help!

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