Early career support for teachers of computing: meeting the teacher standards
The National Centre for Computing Education (NCCE) is funded by the Department for Education to improve the provision of computing education in England.

Run by a consortium made up of STEM Learning, the Raspberry Pi Foundation and BCS, The Chartered Institute for IT, our vision is to achieve a world-leading computing education for every child in England.

The teacher standards define the minimum level of practice expected of teachers from the point of being awarded qualified teacher status. This reference document aims to help you, as an early career teacher, to plan support to help you meet and evidence, the teacher standards.

This early career support can be used by initial teacher trainees and teachers throughout their NQT and RQT years.
Set high expectations which inspire, motivate and challenge pupils

A teacher must:

- establish a safe and stimulating environment for pupils, rooted in mutual respect
- set goals that stretch and challenge pupils of all backgrounds, abilities and dispositions
- demonstrate consistently the positive attitudes, values and behaviour which are expected of pupils

How we can help:

The Computer Science Accelerator CPD programme helps you calibrate your teaching to the right level, helping all students reach their potential in GCSE computer science.

The Teach Computing Curriculum includes learning graphs that help you plan teaching for mastery. These courses, for primary and secondary teachers of computing, cover curriculum expectations and planning for progression for all pupils at all key stages.

Primary CPD:
- Outstanding primary computing for all

Secondary CPD:
- GCSE computer science - developing outstanding teaching
- KS4 computing for all
- Impact of technology
- Creating an inclusive classroom

You may also be interested in:

- STEM Learning:
  - Managing behaviour for learning (online course)
- Raspberry Pi:
  - Coolest Projects
  - Astro Pi
  - Bebras
  
These challenging projects will stretch the capabilities of your most able pupils.
2 How pupils learn

Promote good progress and outcomes by pupils

A teacher must:

- a) be accountable for pupils’ attainment, progress and course outcomes
- b) be aware of pupils’ capabilities and their prior knowledge, and plan teaching to build on these
- c) guide pupils to reflect on the progress they have made and their emerging needs
- d) demonstrate knowledge and understanding of how pupils learn and how this impacts on teaching
- e) encourage pupils to take a responsible and conscientious attitude to their own work and study

How we can help:

Subject knowledge assessments are a collection of free, quality-assured subject knowledge assessments for secondary computing. They support pre- and post-teaching testing, to evidence progress.

The Teach Computing Curriculum is carefully sequenced across all years, giving you confidence in pupils’ prior knowledge and experiences.

The NCCE’s pedagogy outputs provide easy-to-implement guidance on subject-specific pedagogy. Quick-read guidance and podcasts help you to access expert teaching practice quickly.

Primary CPD:
- Programming pedagogy in primary schools: developing computing teaching
- Teaching and leading KS1 computing
- Teaching and leading KS2 computing

Secondary CPD:
- Assessment and progression in KS3 computing
- Scratch to Python: moving from block- to text-based programming
- Introduction to cybersecurity for teachers
- Programming pedagogy in secondary schools: inspiring computing teaching

You may also be interested in:

STEM Learning:
- Assessment for learning (online course)
- Planning for learning - formative assessment (online course)
- Implementing formative assessment (online course)

Early career support for teachers of computing: meeting the teacher standards

Subject and curriculum
Classroom practice
Adaptive teaching
Assessment
Managing behaviour
Professional behaviours
A teacher must:

a) have a secure knowledge of the relevant subject(s) and curriculum areas, foster and maintain pupils’ interest in the subject, and address misunderstandings

b) demonstrate a critical understanding of developments in the subject and curriculum areas, and promote the value of scholarship

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**How we can help:**

Our range of primary and secondary CPD, accessed locally at your Computing Hub or online in remote synchronous or asynchronous, courses helps you to secure age-appropriate subject knowledge and teaching approaches. You’ll be more confident in contextualising the subject of computing, and linking it to future study and careers, under the guidance of highly experienced subject specialist teachers.

**Core / Computer Science Accelerator**

**Primary CPD:**

☑️ Teaching and leading KS1 computing

☑️ Teaching and leading KS2 computing

**Secondary CPD:**

☑️ Follow the CPD pathway for new teachers of GCSE computer science for free if you work in state-funded education and receive funding for supply cover for your school or college.

The **Teach Computing Curriculum** is carefully sequenced across all years, giving you confidence in pupils prior knowledge and experiences.

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**You may also be interested in:**

- STEM Learning:
  - STEM Clubs
  - Linking curriculum learning to STEM careers (online course)

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**Subject and curriculum**

Demonstrate good subject and curriculum knowledge

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**Early career support for teachers of computing:** meeting the teacher standards
Plan and teach well structured lessons

How we can help:

The Teach Computing Curriculum, for pupils aged 5 to 16, provides a range of engaging contexts for instruction and project-based learning. They are structured to provide solid progression in single lessons, and sequenced to support long-term learning objectives.

School engagement programme – our subject matter experts are on hand to help you and your new department plan effective lessons and curriculum implementation, free of charge. They can mentor teachers in best practice in computing education, and guide them through the NCCE offer.

CAS Communities of Practice are informal networking and professional development events, during which you’ll find out what works from practising teachers willing to share their expertise.

Subject knowledge assessments provide assessment data to inform adapted teaching approaches – quality-first teaching with awareness of pupil strengths and weaknesses reduces the need for corrective interventions later. Our paired assessment can be used to baseline test, then to assess progress following teaching.

Our pedagogy guidance provides the skills to plan and deliver effective lessons across computing.

Primary CPD:

- ✔ Introduction to primary computing

Secondary CPD:

- ✔ Representing algorithms
- ✔ Computer systems
- ✔ Impact of technology
- ✔ Improving computing classroom practice through action research

A teacher must:

a) impart knowledge and develop understanding through effective use of lesson time

b) promote a love of learning and children's intellectual curiosity

c) set homework and plan other out-of-class activities to consolidate and extend the knowledge and understanding pupils have acquired

d) reflect systematically on the effectiveness of lessons and approaches to teaching

e) contribute to the design and provision of an engaging curriculum within the relevant subject area(s)
Adaptive teaching

Adapt teaching to respond to the strengths and needs of all pupils

How we can help:

Throughout our CPD you’ll discuss how to adapt teaching approaches for different learner needs. You’ll learn about the common misconceptions and patchy knowledge that can hinder learning, and develop strategies to help pupils make optimal progress.

Primary teachers will also consider developmental stages and how they relate to computational thinking and subject knowledge.

Primary CPD:
- Primary programming and algorithms
- Outstanding primary computing for all

Secondary CPD:
Courses are free to graduates of the CS Accelerator programme working in state-funded secondary education.
- KS4 computing for all
- Assessment and progression in KS3 computing

We provide online professional development, developed by experts in the field:
Creating an inclusive classroom: approaches to supporting learners with SEND in computing

Our subject knowledge assessment provides secondary teachers with detailed assessment data, allowing you to plan more effective lessons that account for the needs of individuals and groups.
A teacher must:

a) know and understand how to assess the relevant subject and curriculum areas, including statutory assessment requirements
b) make use of formative and summative assessment to secure pupils’ progress
c) use relevant data to monitor progress, set targets and plan subsequent lessons
d) give pupils regular feedback, both orally and through accurate marking, and encourage pupils to respond to the feedback

How we can help:

The Teach Computing Curriculum contains assessment questions in every unit, supporting formative assessment for all ages.

Our subject knowledge assessments provide secondary teachers with powerful, automated assessment tools based on quality assured question sets. You’ll gain a rich assessment data set with no additional workload.

We also offer CPD to support Assessment of primary computing and Assessment and progression in KS3 computing.

Our CPD Improving computing classroom practice through action research helps you evaluate the impact of your assessment practices in your classroom.

STEM Learning:

- Introducing assessment for learning (online course)
- Planning for learning - formative assessment (online course)
- Implementing formative assessment (online course)

You may also be interested in:

- Assessment: Make accurate and productive use of assessment
- How pupils learn
- Classroom practice
- Adaptive teaching
- Subject and curriculum
- Assessment
- Managing behaviour
- Professional behaviours
Managing behaviour

Manage behaviour effectively to ensure a good & safe learning environment

A teacher must:

a) have clear rules and routines for behaviour in classrooms, and take responsibility for promoting good and courteous behaviour both in classrooms and around the school, in accordance with the school's behaviour policy
b) have high expectations of behaviour, and establish a framework for discipline with a range of strategies, using praise, sanctions and rewards consistently and fairly
c) manage classes effectively, using approaches which are appropriate to pupils' needs in order to involve and motivate them
d) maintain good relationships with pupils, exercise appropriate authority, and act decisively when necessary

How we can help:

CAS Communities of Practice are the ideal place to learn classroom crafts from experienced peers.

Secondary CPD:
Courses are free to graduates of the CS Accelerator programme working in state-funded secondary education.

STEM Learning:
Managing behaviour for learning
(online course)

You may also be interested in:

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Professional behaviours

Fulfil wider professional responsibilities

A teacher must:

a) make a positive contribution to the wider life and ethos of the school

b) develop effective professional relationships with colleagues, knowing how and when to draw on advice and specialist support

c) deploy support staff effectively

d) take responsibility for improving teaching through appropriate professional development, responding to advice and feedback from colleagues

e) communicate effectively with parents with regard to pupils' achievements and well-being

How we can help:

**Code Clubs** are fully supported extra-curricular activities, bringing enjoyment and challenge to the wider subject of computing and helping you develop stronger relationships with learners outside of formal lessons, contributing to the life of the school.

Our CPD pathways and programmes are designed to guide teachers with all levels of experience and knowledge through appropriate PD routes, whether you're new to computer science, or want to focus on **programming and algorithms**, or **systems and networks**. The CPD is free to teachers in state-funded education, with subsidies for supply cover, paid to your school or college.

It leads to recognised accreditation from BCS, The Chartered Institute for IT and the Royal Academy of Engineers. If you feel confident in all areas of the GCSE computer science curriculum, there's lots on offer to stretch and extend your expertise.

**STEM Ambassadors** promote work readiness and awareness of careers options – many of our volunteers work in tech-related roles and can bring expertise to your classroom.

STEM Learning:

**STEM Clubs**

**Linking curriculum learning to STEM careers** (online course)

**Raspberry Pi**:

**CoderDojo**

**AstroPi**

Both will allow you to challenge your pupils and build positive relationships.

You may also be interested in:

Early career support for teachers of computing: meeting the teacher standards
Find out more about our early career support at
\texttt{teachcomputing.org/early-career-teachers}

\textbf{Any questions?}

If you have any questions, please send them to \texttt{info@teachcomputing.org}
and we will be in touch to help!

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