

IOP

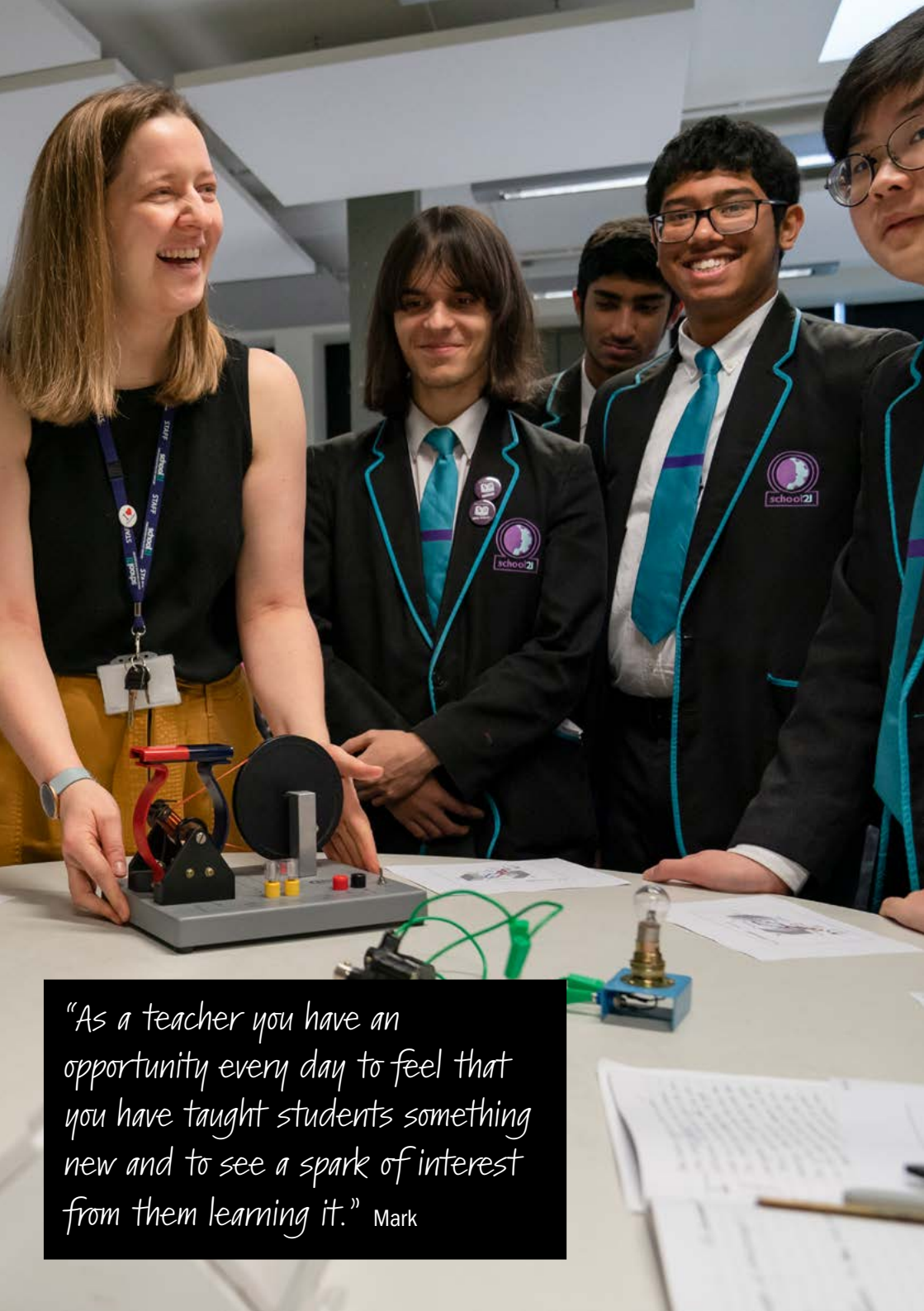
Teach Physics: A guide for engineers

The future of physics and engineering is in your hands



IOP Institute of Physics

iop.org/education



“As a teacher you have an opportunity every day to feel that you have taught students something new and to see a spark of interest from them learning it.” Mark

Introduction

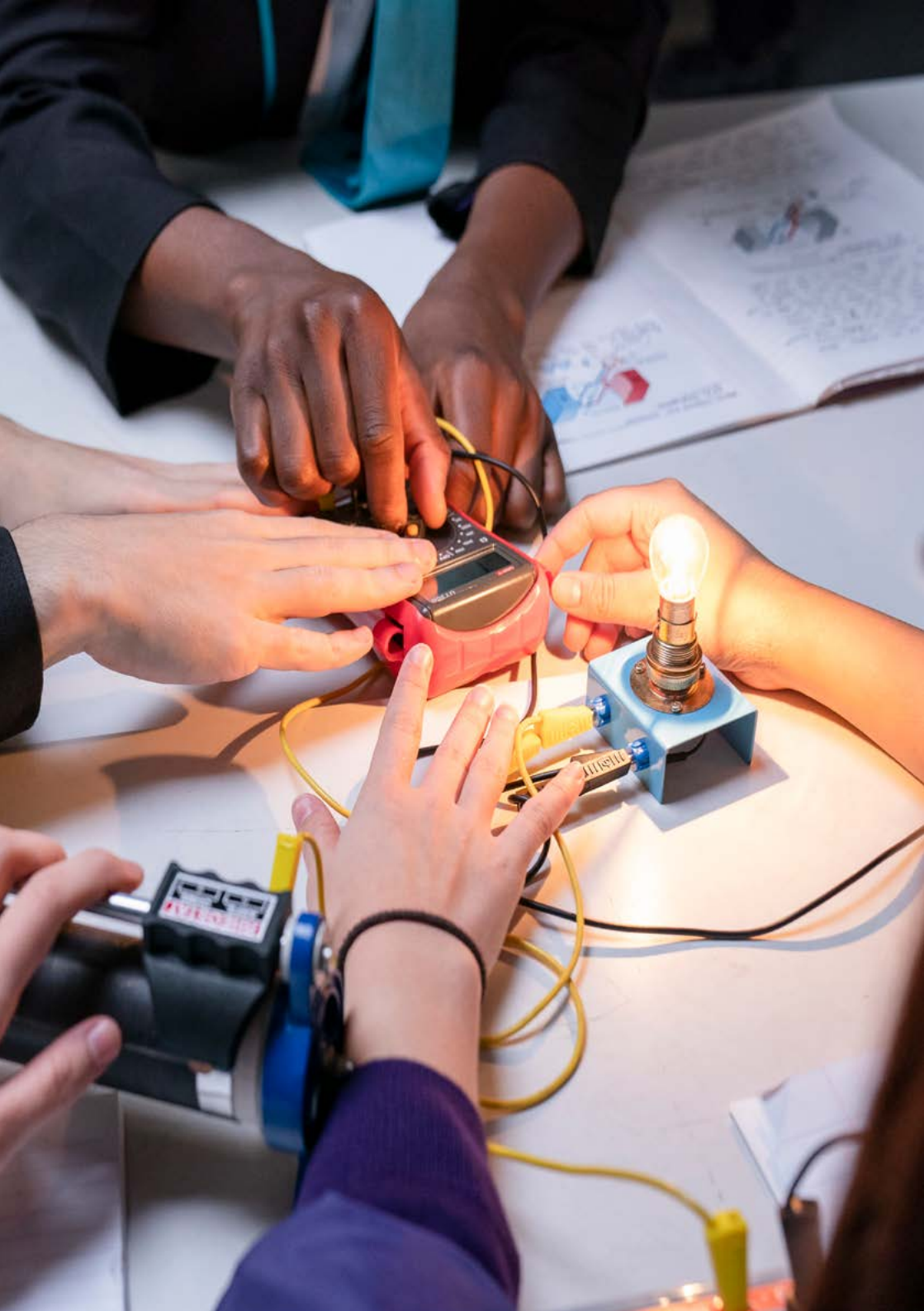
The UK needs 1.2 million new STEM professionals, including technicians, by 2024 (Engineering UK). Without them, businesses will not prosper and the UK will suffer. Yet, this can only be achieved if we tackle the immediate shortfall in physics teachers.

Specialist physics teachers have the power to develop the next Curie, Dyson or Newton. They play a vital role in the classroom – underpinning the global future of physics and engineering.

Encouraging more engineers to teach physics can only be a great thing. You will help reduce the shortage of physics teachers while offering pupils a practical perspective on physics.

Your experience in the engineering sector gives you the ideal background for the job. As well as your subject knowledge, your creativity and ability to solve problems will help you excel in the classroom.

We are sure that your physics teacher played a vital role in getting you where you are today. Now it's your chance to do the same for future generations.



Why teach?

As an engineer, you will enjoy finding solutions to problems

Every day in the classroom is challenging and different. You will rely on your creative skills to motivate and engage your students – and you will need to think on your feet to answer thought-provoking questions from the enquiring minds around you.

Teaching is a diverse, dynamic and hands-on career

Your knowledge of applied physics will come into its own. You have the ability to relate the theory behind your lessons to real-life situations – further capturing the imagination of your students, and educating them about the world around us.

Benefit to yourself and others

By sharing your passion for physics and demonstrating that it is one of the foundations of engineering, you will inspire future generations of physicists and engineers. In return, you will receive ongoing IOP support, a competitive salary, career progression opportunities and job satisfaction that's hard to beat.

"I believe that teaching physics not only helps with creating the engineers and scientists of the future but also gives all students a chance to appreciate the wonder and joy of understanding why things work as they do."

Alastair, IOP Scholar

Your career

While tax-free funding packages and competitive salaries are an attraction, your biggest personal reward will come from the satisfaction of sharing in your students' "light bulb" moments.

Competitive salary

As a newly qualified teacher in England you could earn between £30,000 and £36,745 depending on where you teach. If you progress into a leadership role you have the potential to earn up to £139,891.

Find out more at getintoteaching.education.gov.uk

Career progression

Once you are a qualified teacher, your career options remain varied. As a physics teacher you could move up to gain responsibility for the physics department, become a head of year, or focus on special needs or pastoral care.

There are also many opportunities beyond the classroom, from coaching a sports team to running a mechanics and engineering club.

From the moment you set foot in the classroom, you will be able to use your leadership and management skills, along with your communication and planning skills, which will be strengthened as your teaching progresses.

Challenge and satisfaction

It goes without saying that teaching can be challenging, but the benefits far outweigh the tough days. Few careers give you the opportunity to change young peoples' lives for the better in the way that a teacher can.

For times when you need a little extra support, the IOP is here to help. Visit our free teaching resources website IOPSpark for inspiration and teaching activities at spark.iop.org/ and attend our online events to boost your confidence in the classroom.



"The unique perspective of a graduate engineer can have a powerful influence over young people who are inspired by the application of science to the world around them."

Training programmes

Engineers teach physics

This new training programme has been developed with support from the physics and engineering community. It has been adapted to help you make the transition from engineering or material sciences to teaching physics. Find out more at [getintoteaching.education.gov.uk/subjects/engineers-teach-physics](https://www.getintoteaching.education.gov.uk/subjects/engineers-teach-physics)

Physics with Science

This training programme enables you to focus mainly on teaching physics, but also combines some biology and chemistry content.

Physics with Mathematics

The biology and chemistry content that would be included in a Physics with Science programme is reduced, and includes additional maths content.

Visit [gov.uk/find-postgraduate-teacher-training-courses](https://www.gov.uk/find-postgraduate-teacher-training-courses) and [getintoteaching.education.gov.uk/subjects/engineers-teach-physics](https://www.getintoteaching.education.gov.uk/subjects/engineers-teach-physics) to search for training programmes.

Funding options

As physics teachers are in high demand, the funding available to support you while you train is substantial.

You could be eligible for a government bursary of up to £28,000 tax-free. Find out more at [getintoteaching.education.gov.uk](https://www.getintoteaching.education.gov.uk)

Outstanding prospective teachers could apply for a prestigious IOP Teacher Training Scholarship.

To be an IOP scholar you will need to have solid knowledge of school-level physics and the potential to become an inspirational physics teacher.

For more information and to apply, visit [iop.org/scholarships](https://www.iop.org/scholarships)

Scholarship funding worth £30,000 is available.

International trainees can expect to pay between £12,000 and £24,000, plus living costs, to train (depending on your immigration status, you may get a reduction in fees and some financial support). International trainees may also be eligible for an International Relocation Payment (IRP) of £10,000 **International relocation payments - GOV.UK (www.gov.uk)**

Each scholarship provides £30,000 tax-free funding and a package of exclusive benefits including IOP membership, access to CPD events where you can network with your peers, as well as opportunities to engage with IOP staff and subject specific mentors.

Tuition fees

Fees for ITE programmes are approximately £9,250. However, if you are entitled to a bursary or scholarship, you could use this towards the cost of your tuition fees, or you could apply for a tuition fee loan.

For more information about fees and funding, visit [getintoteaching.education.gov.uk/funding-your-training](https://www.getintoteaching.education.gov.uk/funding-your-training)

Applications for university-led and school-led teacher training are submitted online via [gov.uk/apply-for-teacher-training](https://www.gov.uk/apply-for-teacher-training)

Training routes

To teach in maintained schools in England, you need to achieve qualified teacher status (QTS) through an Initial Teacher Education (ITE) course. Routes into teaching are now more flexible than ever, making it easier for you to find a course that suits your needs.

You can choose to study full- or part-time through a school-led or university-led route.

University-led training

University-led ITE typically takes one year of full-time study and leads to a Postgraduate Certificate in Education (PGCE). It is based at a Higher Education Institution (HEI) and includes around 24 weeks of placements in schools alongside seminars at your chosen HEI that focus on developing your teaching skills and understanding of the theory of education.

School-led training

Through school-led ITE you will learn on the job in a school or within a group of schools.

There are currently two school-led training routes available:

1. School Direct (salaried)

School Direct (salaried) is for individuals with at least three years of work experience who want to move into the classroom. You will be paid a salary as an unqualified teacher and will be employed by the school once qualified. As a career-changer, this might be your preferred route.

2. School-Centred Initial Teacher Training (SCITT)

Similar to the School Direct route, SCITT provides practical, hands-on training led by experienced, practising teachers based in their own school or at a school in their network.

Other routes

Teach First

Teach First recruits high-calibre individuals and matches them with schools in challenging circumstances where they teach for a minimum of two years. You will also join a Leadership Development Programme. Find out more at [teachfirst.org.uk](https://www.teachfirst.org.uk)

Now Teach

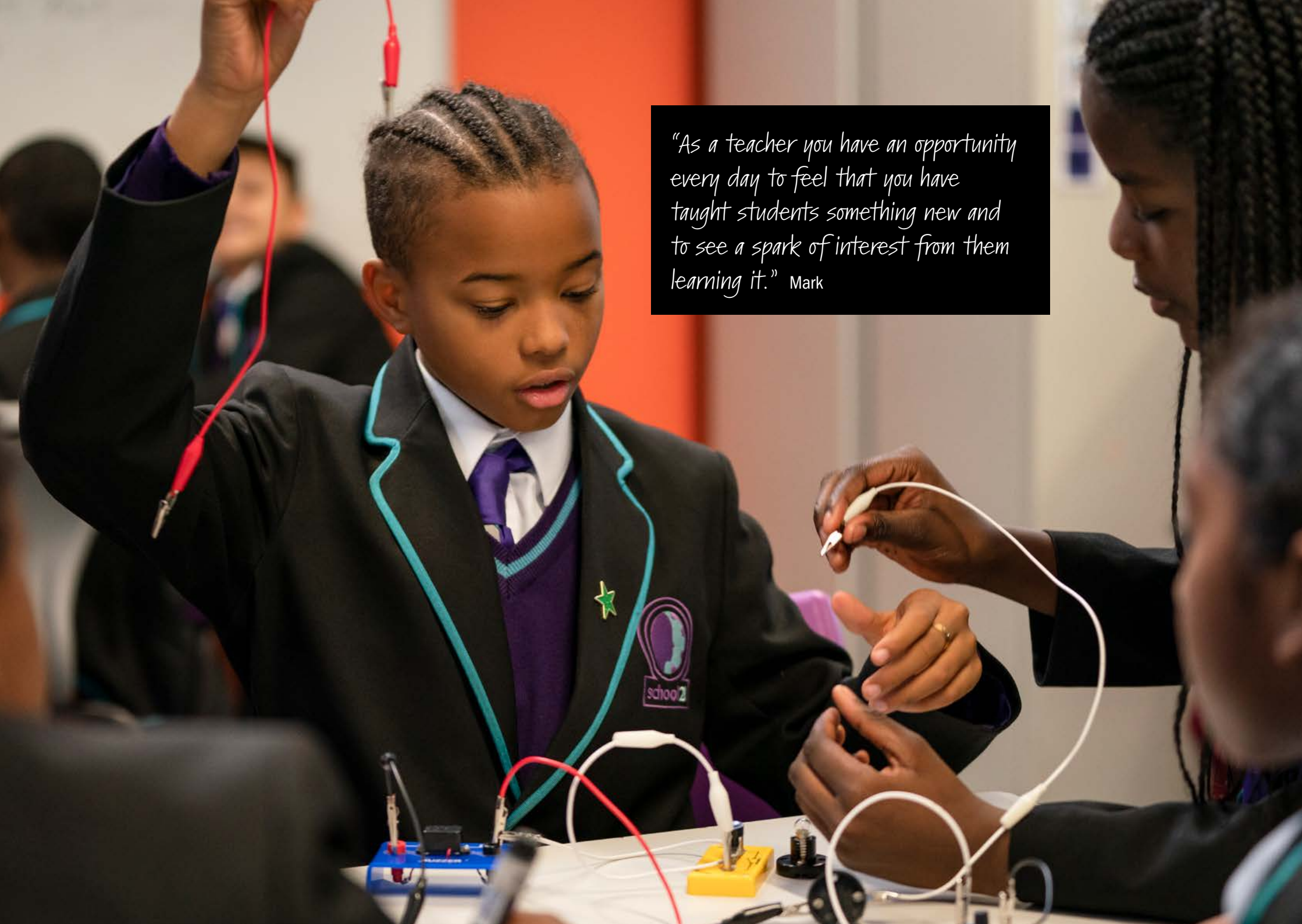
Now Teach is a route for people who have a successful career in the public or private sector and are looking to move into teaching. Find out more at [nowteach.org.uk](https://www.nowteach.org.uk)

Subject Knowledge Enhancement (SKE)

If your engineering degree didn't include sufficient physics to enrol on an ITE course straight away, or you feel that your physics knowledge could do with a boost, you might be eligible for an SKE course. Your prospective training provider will assess your subject knowledge and advise whether or not you need to complete the course.

SKE courses vary in length, depending on your needs, and are offered by many HEIs. Talk to your prospective provider for more information or visit www.iop.org/education/thinking-becoming-physics-teacher/SKE-courses

SKE courses are only available in England.



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Further help

Whether you're just starting out, or changing career, the IOP is here to support you from the moment your training begins.

We keep in touch during your first few years via email with links to teaching resources and articles relevant to your career stage; information about local physics teaching support via our expert networks; news about workshops and events to boost your teaching skills and other content we think will help you in the classroom and make you feel part of the physics teaching community.

For more information visit iop.org/education/how-to-become-physics-teacher

Department for Education Teacher Training Adviser

We recommend that you register with Get into Teaching, which offers a "Teacher Training Adviser" service. This includes one-to-one advice on becoming a teacher and support with submitting your application.

For full details, visit getintoteaching.education.gov.uk

"One of the things I love about teaching is that you can open the mind of your students to dimensions they had not even considered."

Elisa, IOP Scholar



Find out more at
iop.org/education/how-to-become-physics-teacher

The Institute of Physics (IOP) is the professional body and learned society for physics in the UK and Ireland. It seeks to raise public awareness and understanding of physics, inspire people to develop their knowledge, understanding and enjoyment of physics and support the development of a diverse and inclusive physics community. As a charity, it has a mission to ensure that physics delivers on its exceptional potential to benefit society.

Useful websites

Our advice on becoming a physics teacher: **iop.org/teach**

The government's teacher training website: **getintoteaching.education.gov.uk**

The training programme Engineers teach physics: **getintoteaching.education.gov.uk/subjects/engineers-teach-physics**

Get in touch

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As you are considering training to teach, you can complete this form to subscribe to our community emails, receive electronic copies of Classroom Physics and access a range of resources: **www.iop.org/education/sign-up-community-physics-teaching#gref**