Skills Builder PARTNERSHIP

THE CAREERS & ENTERPRISE COMPANY

Physics

My Learning, My Future

Bringing learning to life: Connecting Physics to careers, pathways, and the world beyond the classroom

Using this guide

Introduction

At The Careers & Enterprise Company, our mission is to help every young person find their best next step.

The My Learning, My Future resources aim to increase learner engagement by showing how subjects connect to careers and the world of work.

They enable subject teachers to highlight the relevance of their subjects and make links to careers, pathways, and the world of work from their curriculum.

Additionally, these resources drive meaningful achievement of Gatsby Benchmark 4 and support the achievement of Gatsby Benchmarks 2, 5, 6, and 7.

Content:

Using this guide and the learner slide deck

This guide and the learner slide deck are designed to help you easily:

- Highlight the value and relevance of your subject to a range of possible future careers and opportunities.
- Highlight all the main pathways from your subject to future careers and opportunities.
- Highlight to your learners how they are developing essential skills in each subject.
- Make links from the curriculum to careers.
- Explore meaningful employer encounters and work experiences to enhance engagement in curriculum teaching and learning.

Each section includes key links, inspiration and support to easily embed careers into the curriculum.

Why study Physics?

In this section we explore the value of studying your subject and support you in how you share this messaging with learners, parents and carers.

This section highlights five key reasons to help you inspire learners by showing the value of studying your subject. These reasons are also featured in the learner slide deck.

Highlighting the relevance of studying Physics with learners

This section supports you to highlight the relevance of your subject to careers and future opportunities. It includes quick-access links and practical ideas on how to easily do this within bell-tasks, home-learning or specific lessons aligned to option choices, etc.

The learner slide deck includes a showcase of example roles and careers linked to your subject, including not-so obvious roles learners may not have thought about. The learner slide deck also includes inspiration for 'Jobs of the Week' linked to your subject with homework tasks set out to support learner research into roles and sectors linked to your subject.

Making links from the curriculum to careers & essential skills

Beyond highlighting the relevance of your subject to careers, pathways and the world of work, this section supports you to bring learning to life through your lessons.

The inspiration section includes quick-access links and practical ideas to help you easily make regular links from the curriculum to careers and the world of work.

Meaningful employer encounters and work experiences linked to curriculum topics

This section supports you to explore and easily plan meaningful employer encounters and work experiences linked to curriculum topics to support engagement and learner motivation.

Pathway maps

This section supports you to understand all pathways from your subject with specific information and inspiration about all routes including technical, vocational and academic.

The learner slide deck features relevant pathway inspiration with specific course information and inspiration aligned to your subject.

Further information/support

This section signposts high-quality careers CPD opportunities, including free resources from The Careers & Enterprise Academy and Teacher Encounters programme.

Why study Physics?

In this section we explore the value of studying Physics and support you in how you share this messaging with learners, parents and carers.

Why study Physics?

Career opportunities

Whether through academic degrees or technical pathways, physics equips learners with a powerful foundation in analytical thinking, mathematical modelling, and problem-solving. As a result, physics-trained individuals are in high demand across a wide range of sectors including data science, finance, engineering, education, and research, etc.

Technical innovation

Many modern technologies like smartphones, MRI machines, and solar panels are based on principles of physics. Studying physics can lead to breakthroughs in engineering, medicine, and computing.

Tackle global challenges

Physics plays a key role in addressing issues like:

- Climate change (energy efficiency, sustainable tech)
- Clean water (filtration and desalination technologies)
- Space exploration and satellite communication

Understanding the universe

Physics helps explain how the universe works from the tiniest particles to the largest galaxies. It answers fundamental questions about matter, energy, space, and time.

Curiosity and discovery

If you are driven by curiosity about the workings of the world, physics offers a natural and inspiring path. It encourages deep exploration and intellectual discovery, often unlocking surprising insights that challenge assumptions and expand our understanding of the universe.

Reflection:

- Is there anything else you would add to this list?
- How do you share the importance of studying Physics with learners?
- How do you communicate the value of studying Physics with parents and carers?

Highlighting the relevance of studying Physics with learners

Access the learner facing slide deck, which features the 'Why study Physics' information above and supports learners to articulate their own response to why the study of Physics is important.

Inspiration

- Share your own careers story.
- Use the learner facing slide deck and signpost to the links below for learners to research and present on roles of interest or on careers linked to STEM. Consider this as a home learning task that engages parents and carers.
- Use the learner facing slide deck to spotlight not so-obvious careers related to your subject by highlighting specific roles from STEM.
- Highlight a 'job of the week' linked to your subject: Slide 8 on learner facing My Learning, My Future slide deck or full library here: Job Of The Week | MYPATH Careers Resources.
- Create a display of careers and pathways for your classroom or for learner and parent and carer events (e.g. Amazing Apprenticeships Science Subject-Led Resources Science Subject-Led Resources - Amazing Apprenticeships).

Useful links to explore and share with learners:

- STEM Learning: DestinationSTEM: Destination STEM
- BBC Bitesize: Careers that use Science: Jobs that use Science - BBC Bitesize
- Prospects: Science and Pharmaceuticals: Science and pharmaceuticals job profiles | Prospects.ac.uk
- Prospects: Overview of careers in Physics: Physics | Propects.ac.uk
- Icould: Explore careers videos: Explore careers - icould
- Youth Employment UK: STEM Careers Guide: STEM Careers - Youth Employment UK
- National Careers Service: Explore careers Explore careers | National Careers Service

Parent and carer engagement inspiration

Curriculum to Career: Subject skills sheets

Empower parents and carers to support young people's option choices with clear, visual resources that link KS4/KS5 subjects to real-world careers. Each sheet highlights transferable skills and pathways into Apprenticeships and Technical Education and are ideal for you to use within option evenings, parent meetings, and subject discussions to spark effective careers conversations linked to your subject at home: GCSE subject skills resource

Why not encourage your learners to consider teaching?

As you know, teaching is a career like no other, where your voice, passion, background and how you view the world is used to inspire young people.

Here are a couple of case studies to inspire you to share your story with your learners.

You might also then select one to share with your learners.

See case study: Shaniqua's story

See case study: Daniel's story

Support learners to find out more about teaching: Get Into Teaching | Get Into Teaching GOV.UK

Making links from the Physics curriculum to careers & essential skills

Beyond highlighting the relevance of your subject to careers, pathways and the world of work, this section will support you in bringing learning to life through your lessons.

Supporting learners to understand how knowledge and skills developed in their curriculum learning helps gain entry to, and be more effective within, a wide range of pathways and occupations.

Inspiration:

- Make consistent and relevant links to careers and pathways as new topics or areas of learning are introduced.

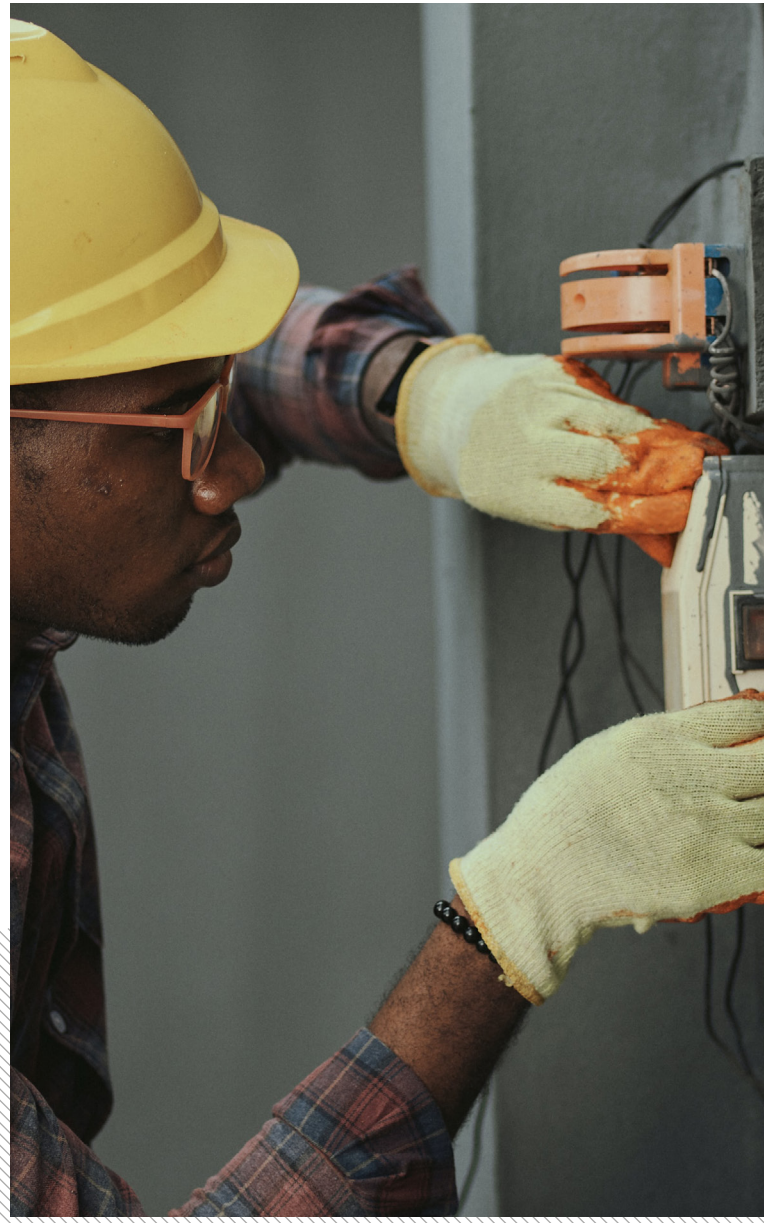
The 'Science, Why Bother' resource aims to help science teaching staff to show students the explicit links between the science curriculum and the world of work: Science, Why Bother? - MYPATH.

Use the links on this page to:

- Include regular links within planning documents and schemes of work to show connections to roles or industries related to specific areas of learning.
- Create 'bell tasks,' plenaries, or home learning to explore skills, pathways, or roles related to specific lessons or topics.

Useful links:

- BBC Bitesize: Careers that use Science: Jobs that use Science - BBC Bitesize
- Prospects: Overview of careers in Physics: Physics | Propects.ac.uk
- Icould: Explore careers videos: Explore careers - icould
- Youth Employment UK: STEM Careers Guide: STEM Careers - Youth Employment UK
- MYPATH: Science, Why Bother? - MYPATH
- Skills Builder Universal Framework 2.0: The Universal Framework



Careers in the Curriculum

Causeway and STAR Academies - Year 7 Curriculum Resources

These resources have been created by curriculum subject experts to engage students as practically as possible in fully resourced classroom-based packs which teachers can use to highlight the application of curriculum topics to real job roles.

Causeway and STAR Academies - Year 7 Curriculum Resources | CEC Resource Directory (Science)

STEM Learning – A teacher's guide

A Teacher's Guide – Linking careers to the STEM curriculum. Linking Careers to the STEM Curriculum is a careers resource aimed at teachers of science, design and technology, computing, engineering and mathematics. It offers immediate ideas to try, longer term solutions and resource recommendations for linking careers to lessons.

STEM Learning - A Teacher's Guide - Linking careers to the STEM curriculum

STEM Learning Secondary and A Level science – Key Stage 3, 4 and 5 resources

Developed by STEM Learning

A selection of hand-picked resources covering all the statements in the Key Stage 3, 4 and 5 programmes of study.

Secondary and A Level Science - STEM Learning

British Science Week

Explore a selection of high-quality resources designed to support British Science Week activities at your school: British Science Week

Overview of Skills Builder and essential skills

Skills Builder Partnership is a global movement of employers, educators, and impact organisations working together to ensure that one day, everyone builds the essential skills to succeed. Essential skills are those highly transferable skills which support individuals to use their technical skills and knowledge. They ease how individuals work with other people, structure a problem to solve, or communicate what should happen.

The eight essential skills unlock learning in the classroom, boosting academic outcomes, perseverance and self belief. Higher levels of essential skills correlate with higher levels of achievement at the ages of 10 and 16. This makes perfect sense when you consider the components of listening, structuring problems, communicating ideas, and self-management and how, of course, they would help individuals to learn better.

Embedding essential skills into your lessons

The Skills Builder Universal Framework takes essential skills and breaks them down into four pairs of skills. It goes further by breaking each skill down into a sequence of 16 steps, going from an absolute beginner in essential skills through to a high level of mastery.

Each step is a micro-skill in its own right - whether note-taking, prototyping, or being diplomatic - which also contributes to the mastery of the overall skill. The sequencing of the steps has been tested and refined over eight years so that while no individual's journey of mastering essential skills is exactly the same, there is a clear data-driven model and age- and stage-related expectations to guide the educator.

We know that every learner is an individual. As with any other learning, individuals will progress at different rates and have other factors in their lives that will make it easier or more challenging to build these skills. Where individuals have additional learning needs or disabilities this can lead to 'spiky' profiles where they may excel in some essential skills and find others much more challenging.

The question of transferability is worth one final remark. In some settings, the notion of whether skills can ever be transferable beyond a particular domain or subject area is hotly debated. While expertise does not automatically translate across all areas, elements of skills do cross traditional boundaries. After all, those boundaries are simply human constructs. For example, a proficient car driver has a head start on cycling on the road or driving a lorry compared to the novice.

Your judgement as a teacher is paramount, but there are suggested step ranges to guide you:

- **Year 7:** Step 5-8
- **Year 8:** Step 6-9
- **Year 9:** Step 7-10
- **Year 10:** Step 8-11
- **Year 11:** Step 9-12
- **Year 12:** Step 10-13

Support and resources at your fingertips

Building employability skills into subject lessons is a critical part of embedding careers in the curriculum. It is best to combine focused time to teach specific skill steps, and lots of opportunities to practise skills within activities that teach the subject content too.

On Skills Builder Hub, you can find three types of resources to help you:

1. Over 300 short lessons, which focus tightly on the skill step with a interactive tasks to teach the step
2. Curriculum guides, which outline a handful of activities to teach the subject content and an age-related skill step
3. Downloadable and printable reflection resources, like posters, passports and records to support learner reflection

Skills Builder Hub is already used by over 40,000 teachers and it's free to use, you just need to create a log in. Choose a skill and step, or search for the type of resource you would like to use.

As an **extension** to making links from the curriculum to careers, you may consider embedding curriculum learning in the context of the world of work.

Please note that this goes beyond requirements of Gatsby Benchmark 4 and requires an investment of time working with an employer to develop co-created teaching resources where learning points are embedded in the context of the world of work.

To further engage learners, you can explore how curriculum learning can be embedded in the context of the world of work.

This can be achieved by:

- Developing high-quality curriculum resources embedded within the world of work in partnership with employers. This allows you to engage learners, support their progress, and deliver curriculum outcomes effectively.
- Accessing the guide to engaging learners and supporting progress by embedding teaching in the context of the world of work.

Inspiration:

Careers in the Curriculum: KS3/4 Curriculum Resources produced by teachers from Academies Enterprise Trust, who worked with a range of employers to construct teaching & learning resources across different curriculum areas.

Examples of resources embedded in the context of the world of work can be accessed here:

AET and Pinewood: Careers in Maths Resource | CEC Resource Directory

Meaningful employer encounters and work experiences linked to curriculum topics

When learners see how your subject and specific topics connect to real jobs and workplaces, it brings learning to life.

Planning meaningful employer encounters and work experiences linked to curriculum topics can support engagement and learner motivation.

Why it matters:

- Helps learners understand how what they're learning is used in the real world.
- Boosts engagement and motivation by showing the purpose behind the content.
- Builds confidence and opens learners' eyes to future career paths and opportunities.
- Makes lessons more dynamic, relevant, and memorable.

Inspiration:

- Invite employers to speak to your class about the relevance and importance of your subject, a specific topic or even a particular teaching point.
- Plan activities, projects or assessed elements of your curriculum with employers that reflect real workplace challenges.
- Support learners in gaining hands-on experience through experiences of workplaces.

A meaningful encounter will:

- have a clear purpose, which is shared with the employer and the young person.
- be underpinned by learning outcomes that are appropriate to the needs of the young person.
- have opportunities for two-way interactions between the young person and the employer.
- be followed by time for the young person to reflect on the insights, knowledge or skills gained through the encounter.

Refer to these guides, including handy checklists to plan a meaningful encounter or work experience linked to your subject or your curriculum:

Understanding how to embed progressive employer encounters and work experiences | CEC Resource Directory

Inspiration

Engage with MATHS4GIRLS Mentors and STEM Ambassadors to embed meaningful encounters within your curriculum.

- Maths4Girls

  Explore the Maths4Girls Mentor offer: Founders4Schools supporting Educators to deliver quality career education | founders4schools

- STEM Learning Ambassadors

  Register to request a STEM ambassador: STEM Ambassadors - STEM Learning

Physics Pathway Maps

There are three types of routes learners can consider:

- Combine work and study
- Study
- Work

Combine study and work	**Apprenticeships**	Apprenticeships are real jobs that combine work with training and study. Learners will earn a wage, gain skills and have the opportunity to put what they learn into practice. To start an apprenticeship, learners need to: • be 16 or over • live in England • not already be in full time education Learners can apply for an apprenticeship while still at school. To apply for some apprenticeships, learners might need to have certain qualifications, such as GCSE English or Maths. If there are any additional entry requirements, they will be listed in the apprenticeship application details.	The 4 different apprenticeship qualifications levels are: • Intermediate: level 2 • Advanced: level 3 • Higher: level 4 or 5 • Degree: level 6 or 7 It takes between 8 months and 5 years to complete an apprenticeship, depending on the level. Find out what qualification levels mean on GOV.UK. There are over 700 types of apprenticeships in different areas of work. Here are some possible apprenticeships available to study: • Nuclear scientist • Metrology technician • Laboratory scientist • Veterinary technician • Therapeutic Radiographer • Forensic Practitioner • Acoustics Technician • Aerospace Engineer • Software Developer	Use these subject-led resources below to encourage your learners to think about apprenticeships related to Physics. Resources include: • Teacher Guide • Student Activity • Lesson Slides • Subject Posters Find out more: Science Subject-Led Resources - Amazing Apprenticeships

Combine study and work	**T levels**	A T level takes 2 years and gives a mix of learning in the classroom and a minimum 9-week placement with an employer. This means learners can explore what a real career is like while they study. To start a T level, learners need to be 16 to 19 years old and live in England. Schools and colleges set their own entry requirements, so learners need to check their websites to find out what GCSE grades they need.	T levels are level 3 qualifications. A T level is also worth UCAS points which can be used to apply to university or another type of higher education. Here are T levels aligned with your subject: • T level Design and Development for Engineering and Manufacturing • T level Maintenance, Installation and Repair for Engineering and Manufacturing • T level Engineering, Manufacturing, Processing and Control • T level Education and Early Years • T level Health • T level Healthcare Science • T level Science	Resources for teachers including 'How to talk about T levels', student activities pack, subject leaflets and T levels guide. T levels resources for teachers and careers advisers - GOV.UK
Combine study and work	**Vocational Technical Qualifications (VTQs)**	VTQs are practical qualifications designed to give the skills and experience needed for a certain job. They might be appropriate if a learner has a strong interest in working in a particular industry.	There are over 2,000 different subjects available across the different VTQs. There are a few different types and levels of VTQs, including: • BTEC diplomas: level 1 to 7 qualifications • Cambridge Nationals: level 1 and 2 qualifications • Cambridge Technical: level 2 and 3 qualifications • T levels: level 3 qualifications Your learners may be able to study: • Science • Applied Science • Engineering • Electrical Electronic Engineering • Operations and Maintenance Engineering • Aviation Operations • Forensic and Criminal Investigation	Find out more about VTQs: Vocational Technical Qualifications (VTQs) | Skills for Careers

Study	**Higher Technical Qualifications (HTQs)**	HTQs are technical qualifications that employers have helped develop so learners can get the right training and skills needed to succeed at work. HTQs can be studied full time or part time.	HTQs are level 4 and 5 qualifications. They focus on high quality technical skills that are sector specific. There are many different types of approved HTQs, such as: • Higher National Diplomas (level 4) • Higher National Certificates (level 5) • Foundation Degrees (level 5) • Higher Education Diplomas (level 5) It takes 1 to 2 years to complete an HTQ, depending on the course taken. Here are some relevant HTQs to your subject: • Engineering and manufacturing • Construction and the built environment • Business Management	Find out more about HTQs: Higher technical qualifications (HTQs) | Skills for Careers
	A-Levels	A-Levels are subject-based qualifications usually taught in classrooms and assessed by exams.	Here are some relevant A-Levels to your subject: • Physics • Advancing Physics • Engineering • Statistics • Computer Science	Find out more about A-Levels: A-Levels | Skills for Careers

Study	**Higher Education**	Higher education courses are usually taught in universities or specialist colleges, like art schools. Learners can often study flexibly at their own pace by learning online or part time.	Learners can choose from many different types of higher education courses, such as: • Diplomas • Bachelor's Degrees • Foundation Degrees • Higher Technical Qualifications (HTQs) • Degree Level Apprenticeships	Explore undergraduate courses in Physics: • Physics • Aerospace Engineering • Agriculture and related sciences • Electrical and Electronic Engineering • Materials science and Engineering • Medicine and allied subjects • Biophysics • Optometry • Paramedic Science • Physical Sciences • Radiography and Medical Technology Physics Subject Guides

Interested in University league tables?

You can see at a glance the university ranking for Physics.

The table allows you to filter the top university by each category:

- Overall score
- Entry standards
- Student satisfaction
- Research quality
- Research intensity
- Graduate prospects

More information on Universities: Interested to see course level data? Discover Uni includes official statistics about higher education courses taken from national surveys and data collected from universities and colleges about all their students.

You can search, save and compare courses using the course comparison tool.

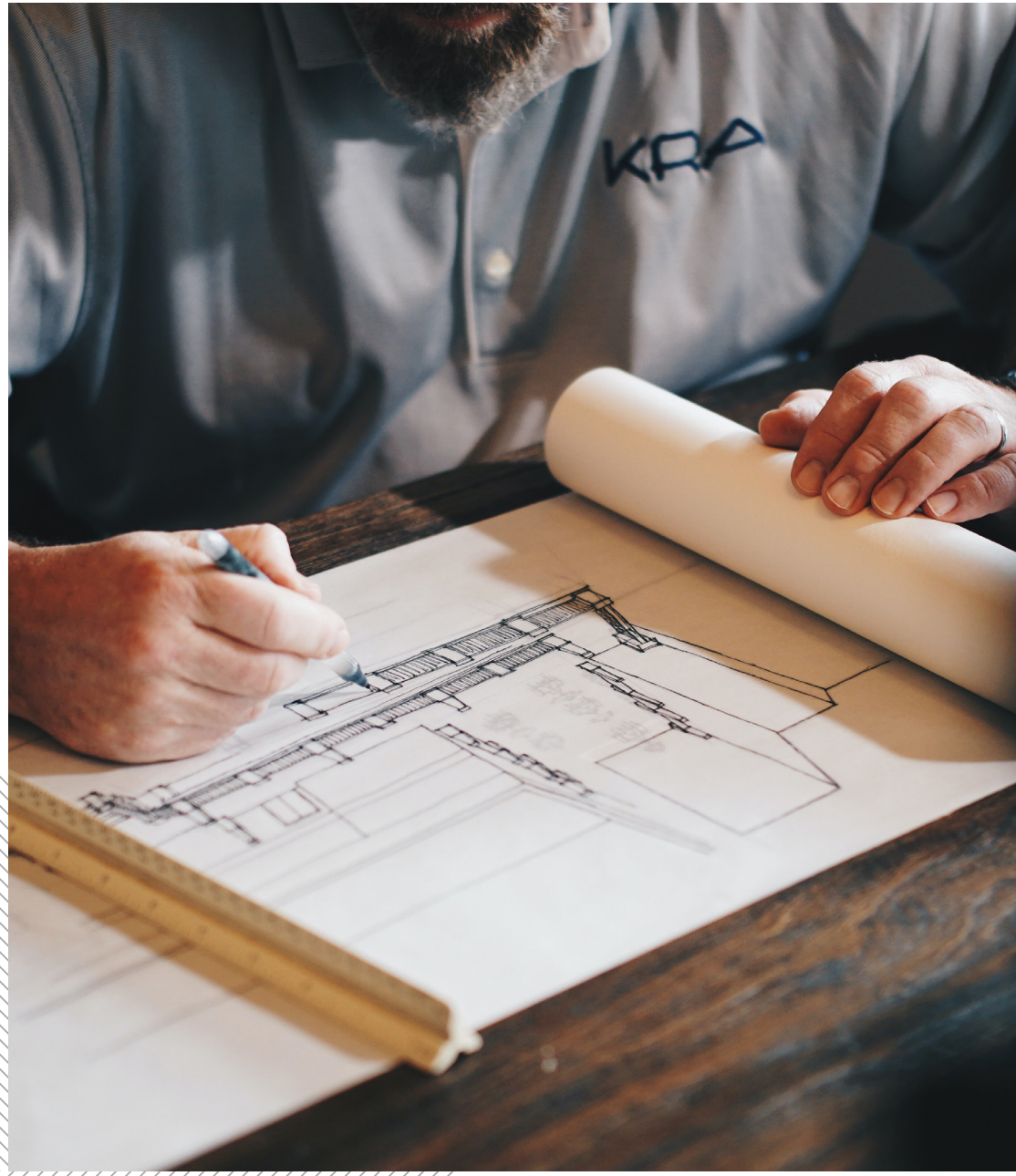
The data includes:

- Entry information, highlighting the qualifications held and UCAS Tariff point values students had when they were accepted onto the course.
- Continuation rates for courses and a breakdown of what students are doing after one year on the course.
- Data from the National Student Survey (NSS) showing experiences at university or college.
- Data from the Graduate Outcomes survey showing employment outcomes and earnings which we publish along with earnings data for graduates 3 and 5 years after graduation from the Longitudinal Education Outcomes (LEO) dataset.
- Graduates' perceptions of their work after graduating.

Work	**Supported internships for young people with an Education, Health and Care Plan**	A supported internship is an unpaid, work-based study programme designed for young people with an Education, Health and Care (EHC) plan. It helps them take their first step from education into the workplace, while developing the skills needed to move into paid employment. To be eligible for a supported internship, a young person must be aged 16 to 24 and have an Education, Health and Care (EHC) plan.	Supported interns spend most of their time in the workplace, developing the practical skills needed for employment. A supported internship typically includes: • An unpaid work placement lasting at least six months • Support from a qualified job coach • A personalised study programme, which includes English and maths where appropriate	You can get help and advice from: • Disability Rights UK: information, advice and resources for disabled students. • Preparing for Adulthood: guidance on supported internships and study programmes for young people with a disability or learning difficulty. • This suite of resources including FREE Parental Engagement CPD, supports parents and carers to have. constructive careers and education conversations as well as to explore education and career options with their child. • Access to Work: help to find or stay in work if you have a physical or mental health condition, including financial support. Find out more: Supported internships if you have an education, health and care plan | Skills for Careers
	School Leaver Programmes	Some companies offer school leaver schemes to young people who have completed A-Levels. The schemes allow them to learn and train with a large company while earning a wage.	Key features of School Leaver Programmes: • Target Audience: Students aged 16–18 who are leaving school or college • Duration: Usually 1–5 years, depending on the level and employer • Structure: Combines paid work experience with formal training or study (often leading to a qualification) • Qualifications: Can include NVQs, BTECs, or even degree apprenticeships • Industries: Available in finance, law, tech, Physics, retail, healthcare, and more	Example School Leaver Programmes: KPMG, EY, PwC – Business and finance IBM, Capgemini – Technology Rolls-Royce, BAE Systems – Physics Dentons, CMS – Legal apprenticeships Find out more: School Leaver Programmes | AllAboutSchoolLeavers

Inspiration

- Share your own careers pathway.
- Use CPD resources and access key links to improve your understanding of pathways from your subject.
  - Access our free online 'Understand career pathways' module for teachers: Home - The Careers & Enterprise Academy
  - Key link: Your training options | Skills for Careers
- Encourage learners to research a job related to your subject that they will be doing in ten years' time and ask them to present the pathway they took to that role.



Further information/support

Support your professional growth through careers CPD

As a teacher, you play a vital role in helping learners connect their subject learning to the world beyond the classroom.

Accessing relevant careers CPD ensures you're equipped with the latest insights, tools, and strategies to embed careers meaningfully into your subject.

By engaging in CPD, you can:

- Understand how careers education supports student motivation and engagement.
- Build confidence in having effective careers conversations.
- Enhance the quality of your teaching by linking curriculum content to real-world pathways.
- Stay up to date with labour market trends.

This not only supports your own development but also helps create a dynamic, future-focused curriculum for your learners.

Free online CPD modules from The Careers & Enterprise Academy

- Teachers Part 1: Understanding Career Pathways
- Teachers Part 2: Careers in the Curriculum Awareness
- SENCO: Understanding Pathways and Career Opportunities
- Wider Education Workforce: Careers Conversations

Access modules here: The Careers & Enterprise Academy | The Careers and Enterprise Company

These modules will help you:

- Identify where Careers already exists in your subject.
- Make stronger links between your curriculum and the world of work.
- Gain confidence in supporting learners with their next steps.

What are Teacher Encounters and why do they matter?

Teacher Encounters are powerful CPD opportunities that give you direct access to people working in industry.

By spending time with employers, you'll gain up-to-date insights into how your subject connects to real-world careers helping you bring lessons to life and better prepare your learners for the future.

These experiences help you:

- Stay current with industry practices and technical developments.
- Understand the skills, behaviours, and qualifications employers are looking for.
- Discover a range of career pathways, including apprenticeships and vocational routes.
- Build confidence in having meaningful careers conversations with your learners.

Over 3,000 teachers have already taken part, with 91% saying they feel more confident supporting students with career choices, and 78% feeling better equipped to link their subject to the world of work.

How to get involved

There are several easy ways to arrange a Teacher Encounter:

- Reach out to your local Careers Hub: They often have events or connections ready to go.
- Speak with your Careers Leader to identify local employers that could accommodate you and / or your colleagues on a Teacher Encounter. The Careers Leader Guide will provide inspiration and can support in planning a meaningful encounter.
- Contact a local employer directly: If you know a business that could enrich your subject, the Employer Guide can help them shape a meaningful experience.
- Speak with your SLT: Use this messaging to raise awareness of Teacher Encounters as a valuable form of CPD.

Hear from some teachers who recently attended an encounter in the South Downs National Park here or read about how one school have changed their approach to helping teachers develop and apply their learning across the curriculum.

Acknowledgements

With thanks to the following organisations for their support and insight into developing the My Learning, My Future resources:

Amazing Apprenticeships

BBC Bitesize

British Science Week

Education & Employers – icould

MATHS4GIRLS

MYPATH

National Careers Service

NHS Careers

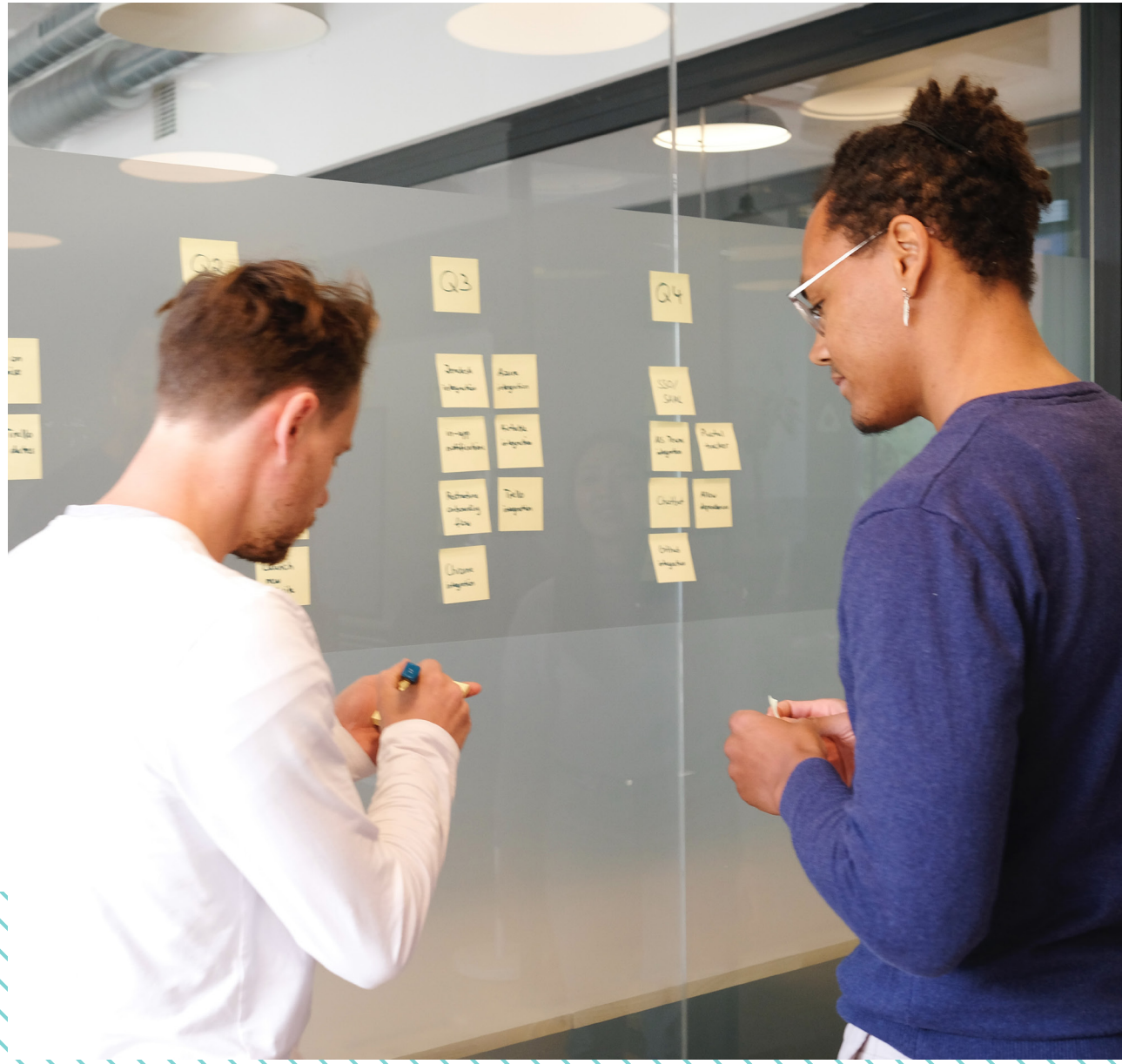
Skills Builder Partnership

Success at School

Prospects

STEM Learning

UCAS



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