



Providing experiences of workplaces for young people under 18

Best practice and
guidance for chemical
science employers

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Introduction

Britain's chemistry industry is worth more than £50bn a year to the UK economy¹ and building the talent pipeline is essential to its development.

However, between 2015 and 2018, numbers of young people applying to study chemistry at university dropped by more than 20%, and only a minority of students studying chemistry at A-level plan to pursue a career in the chemical sciences. From finding solutions to climate change and decarbonising transport, to finding new drugs or even creating new materials, chemistry is too important to let slide. One of the best ways to inspire the next generation of chemical scientists is to give them first-hand experiences of the chemical sciences workplace.

The purpose of this booklet is to provide general guidance and practical information to employers who are interested in setting up work visits, work shadowing and work experience for secondary-aged students. It includes a brief description of what workplace experiences are, why they are so important, why it benefits employers to provide them, and a number of tips on preparing and delivering them successfully.

To find out about other types of employer engagement please see the CBI-CEC employers' guide, *How To Support Careers and Enterprise Activities in Schools* which gives a good account of how your business can engage with young people. The Royal Society of Chemistry have also produced a guide to giving career talks in schools called *Engaging young people with a career in chemistry*.

What are experiences of the workplace?

Experiences of the workplace cover three forms of work-related learning: work visits, job shadowing and work experience.

- **A workplace visit** is where individuals or groups of students are guided round the workplace to watch a range of employee activities or work processes. It gives students a chance to see a work environment first-hand, observe work processes and talk to employees about their roles. It can also be an opportunity to investigate a topic or question related to an aspect of chemistry they are studying.
- **Job shadowing** is when an individual student is assigned to 'shadow' an individual employee as they do their job and it allows close observation of jobs which for reasons of complexity, safety or security cannot be actively undertaken by the student. This can be particularly helpful for areas of the chemical sciences that struggle to provide work experience or to get students involved in their primary work processes.
- **Work experience** involves students carrying out real work tasks or duties, similar to an employee, but with the emphasis on the learning aspects of the experience. Work experience occurs on the employers' premises; the vast majority of pre-16 work placements last for one or two weeks, but post-16 the experience can be more varied in length depending on the course being followed. Industry placements are specific to new technical 16-18 programmes, and are a minimum of 45 days.



"The staff in our laboratory gain as much from the experience as the students do."

Mark Rolfe
Kent Scientific Services

What are the business benefits?

Your business can benefit from helping young people to gain experiences of the workplace by:

Developing the supervisory and organisational skills of your staff

Working with young people can develop the managerial and communication skills of your team, helping them to contribute to the business and develop their own career.

Enhancing your public profile by supporting your local community

Providing experiences of your workplace is a valuable means of creating a positive image amongst students, teachers, parents and employees. Your visitors will be impartial advocates of your company and what it does.

Influencing career choice

Some young people studying A-level chemistry do not intend to pursue it as a career because they do not know where it can lead¹. Giving young people an experience of the workplace is a great way of making them aware of the career opportunities within your business and dispelling any stereotyped views about the chemical sciences. These experiences are a vital part of choosing a career and preparing for the world of work.

Developing recruitment channels

Building links with local schools and colleges can help to attract school leavers into jobs and reduce recruitment costs. Schools in England are more willing than ever to engage with employers, as they are required by the government to make sure that, by the age of 16, every student has had at least one experience of a workplace, additional to any part-time jobs they may have. And by the age of 18, every student should have had one further such experience, additional to any part-time jobs they may have had².

Improving work skills, attitudes and behaviours

An ideal way to answer the call for more skilled workers is to provide young people with an experience of your workplace where they can get first-hand understanding of some of the skills necessary to pursue a career in the chemical sciences.

Making chemistry come to life

It allows them to relate their classroom learning to the real world and to try out and/or improve their technical skills on modern equipment. In addition, it helps them develop their employability skills.

Improving social mobility

You will be reducing the likelihood of young people becoming unemployed or not in education or training (known as NEET). The Education and Employers charity found that young people were 86% less likely to be NEET if they had undertaken four 'employer engagement activities' compared to those who had not undertaken any.

"We value building a network and pipeline of students who could become future employees."

Christina Bird
Domino Printing Services

Common misconceptions

Some employers are put off offering work experience, work visits or job shadowing by misconceptions about the administration involved.

- **Additional insurance:** Compulsory employer liability insurance **covers** work experience students, provided the insurer is a member of the Association of British Insurers.
- **Health and safety:** it is good practice to carry out a risk assessment before young people start a period of work experience, but there is no need to carry out a separate risk assessment for work experience students. If you haven't previously employed a young person (<18 years old), you should review your risk assessment and take into account specific factors for students. If you have fewer than five employees, you won't need a separate risk assessment. For more information see the Health and Safety Executive website³.
- **Disclosure and barring services (DBS) checks for staff:** most work experience won't require DBS checks. For under-16 year olds, DBS checks might only be required if the student is identified as vulnerable, if a single member of staff will have unsupervised access to the student over long periods (ie over half a day at a time on placements lasting more than 15 days) or if there is a residential element. For post-16 students generally no DBS checks are required.
- **Remuneration:** work experience is part of students' education, and employers do not provide payment for work performed. In some instances you may want to discuss transport and meal arrangements with the student's school or your local education authority.

"The government's online document, Not just making tea - reinventing work experience... busts a lot of myths such as needing staff to be DBS checked."

Chris Wiper
Sterling Pharma Solutions

Before you start

Have a clear rationale about what you want to achieve.

A good way to get the most from offering experiences of workplaces is to align what you plan to offer with the strategic goals of the business (typically corporate, social responsibility (CSR) or HR). For example, work experience can be a way to raise awareness of apprenticeships and graduate career opportunities. You may have strategic goals linked to community outreach in which case the provision of work experience is a great way to connect with young people living locally.

Think about:

Your aims. Do you want to develop sustained relationships with schools and/or deliver one-off activities?

Your audience. Do you want to reach students across your local area or further?

Your focus. Do you want to focus on widening participation amongst students who might not typically choose to work towards a career in the chemical industries or those who have already made choices to study related subjects?

Answering those questions will help you decide whether you want to build your own programme or work with a provider who can offer training, support and facilitation.

Here are a selection of organisations.

- Career Ready www.careerready.org.uk/support-us/partner-us
- Founders4Schools www.founders4schools.org.uk/employer

Allocate someone within the business to be the lead contact point for schools, intermediaries and partner organisations and other employees. This function can run alongside their normal role. You will need to decide which business functions will lead and who else will be involved. This could be senior leadership team, HR (including learning and development), CSR or another, such as marketing.

A meeting with a programme provider or a local school is important to guide the structure of the workplace experience or visit and ensure it is mutually beneficial.

Work experience at Sterling Pharma Solutions

During the week students spend time in different departments gaining an understanding of the variety of roles available in the organisation.

The aim is that by the end of the week, students feel more confident about being in the workplace and understand the 'lifecycle' of a drug from concept to large scale manufacture.

Planning experiences of the workplace

Compile a draft timetable of where the students will be and broadly what they will be doing. This applies to one-day work-visits and work experience covering longer periods. For smaller companies this could be a half-day induction to cover health and safety with the rest of the week in the laboratory under the supervision of a member of staff. For larger companies it may spread across more than one department. Get buy-in from the other departments involved in the programme.

Ask them to draft up what the students will do when they visit their department.

Ensure there is meaningful work to do. Try to make it varied, current and relatable to the student. Set open-ended and real-life projects to inspire students and develop their enterprise and problem-solving capabilities. Think about integrating non-technical skills such as asking them to present a paper which will develop their communication skills.

It is useful to have someone in the company who understands safeguarding (ie measures to promote the welfare of young people and protect them from harm). Otherwise, your designated coordinator can get, free advice online and the organisations mentioned in this booklet can help too.

Be realistic about what your company can offer because a workplace visit and workplace experience or job shadowing will require planning and time.

There are many other ways in which employers can provide meaningful school-employer encounters including mentoring, enterprise-competitions and talks in schools. Please see the CBI-CEC employers' guide, *How To Support Careers and Enterprise Activities in Schools* which gives a good overview of the different types of interaction and their effectiveness and has information on getting started.

Feedback and evaluation

Reviewing the experience that a student has with you is a vital part of developing and improving your activities and strategy. It also provides the opportunity to recognise the strengths and aptitudes they have shown.

WORKPLACE VISIT EXAMPLE

PRE-VISIT

- Discuss an outline with the teacher organising the event
- Talk about the structure of the visit, the number of children and their age, and any other logistical details

ON THE DAY

- Brief description of your career journey
- History of the company
- What the company does
- Panel of speakers from various areas of the business
- Tour of the site
- Summation, closing remarks and thanks

Work experience at Kent Scientific Services

The one-week work experience is run during the year for one school student at a time. The first half-day covers an induction around health and safety. After that it's hands-on in the laboratory, carrying out some of the scientific testing preparation instrumentation work that is part of our daily work.

They focus on the food-testing area of the work such as sample testing, homogenisation, extraction through to it going onto the instruments and the interpretation of the results.



Reaching young people

Schools and colleges will be wanting to find experiences of workplaces for their students, especially in England where schools have specific targets to meet⁴.

Many organisations produce their own online application forms which they can email to schools that contact them and send to students who get in touch directly. This approach is a good way for a company to find young people with a genuine interest in their area of the chemical sciences.

Another way to reach young people is through intermediaries. Participate in local collaborative networks such as the local enterprise partnership, local chamber of commerce, rotary club or a similar grouping to co-ordinate and plan links with schools.

- The Careers and Enterprise Company (www.careersandenterprise.co.uk) has a national network that connects schools and colleges with employers and careers programme providers and supports them to work together to provide young people with effective and high-quality encounters with the world of work.

- Local enterprise partnerships and Connexions, act as a broker between local schools seeking placements and companies offering them.
- Education Business Partnerships (see www.theaebp.co.uk/professionals), deliver a wide range of activities and are the leading providers of work experience.

Time your engagement activities carefully. Avoid the May-June exam period.

Useful resources

Work visits, work experience and job shadowing tools and resources:

- Not just making tea – reinventing work experience UKCES (February 2014) www.gov.uk/government/publications/not-just-making-tea-a-guide-to-work-experience
- How to Support Careers and Enterprise Activities in Schools (October 2017) www.careersandenterprise.co.uk/news/new-guide-employer-engagement-schools-partnership-cbi
- ‘Work experience, job shadowing and workplace visits. What works?’ (October 2017) www.careersandenterprise.co.uk/research/work-experience-job-shadowing-and-workplace-visits-what-works
- This extract is taken from the ‘Work experience, job shadowing and workplace visits. What works?’ booklet. It shows the impact of different employer engagement based on the evidence available. It could help you plan how to engage with schools.

EMPLOYER-ENGAGEMENT using evidence to decide what activities to pursue	
STRONG EVIDENCE High quality evaluations showing positive impact	SOME EVIDENCE Lower-quality evaluations showing positive impact
<ul style="list-style-type: none"> • employer mentoring • enterprise competitions • work-related learning provided in cooperation with employers 	<ul style="list-style-type: none"> • 1-2 week work experiences • career learning co-delivered by teachers and employers • careers talks • careers websites • curriculum learning co-delivered by teachers and employers • cv workshops • employer delivered employability skills workshops • mock interviews



Examples of how to do it: case studies



Chris Wiper
Learning Development Manager,
Sterling Pharma Solutions



Sterling Pharma Solutions is a leading provider of small molecule active pharmaceutical ingredients (API) development and manufacturing services.

The company offers workplace visits, job-shadowing and one-week work experience programmes. During the week, students spend time in different departments including Research and Development (R&D), Analytical, Engineering, Manufacturing, Warehousing, Purchasing, Sales, Finance and Health & Safety, allowing them to gain an understanding of the different types of roles available both within Sterling Pharma Solutions and the wider pharmaceutical sector. They also get the opportunity to shadow PhD chemists in a live research environment and help set up lab equipment following good lab practices (GLP). By the end of the week, the aim is for students to feel more confident in the workplace and understand the 'lifecycle' of a drug from concept to large scale manufacture.

What inspired Sterling Pharma to offer work experience?

For the last 30 years Sterling Pharma Solutions has always run work visits and work experience. The company values centre around being a caring organisation and one of the ways they demonstrate this is by giving local, young people a chance to see and experience the career opportunities that are available to them on their doorstep.

They are regarded as the potential future of the organisation, with many of Sterling's current staff having undertaken workplace experience or apprenticeships prior to full-time employment.

The best way to advertise our apprenticeship scheme is by engaging with schools and young people from early on in their academic life. By arranging visits around site and teaching them about what we do, we could potentially find the next head of engineering or our next superstar operator.

How do you advertise the work experience?

The positions are advertised both internally to the families and friends of staff, and externally through Connexions, government career guidance support services and Founders4Schools. We encourage local schools to go through the local enterprise partnerships (LEPs). The LEPs will partner the science department of a local school with a company like ours, for example.

What goes into planning the work experience?

Sterling Pharma Solutions recommends drawing up a timetable for the duration of the work experience. Each department then fills in their relevant details. At that stage I oversee the final schedule and meet with the relevant internal health, safety and environment department (HSE) and HR department. In addition, there is a discussion around any safeguarding issues and a risk assessment is completed.

The placement week can change based on the requirements of the young people who apply. For example, if the majority of the students are interested in the analytical sciences then the week can focus on that topic for those individuals. In that case, there would be a general induction and tour of the site for all work experience students on day one. And then, from day two to five, the students interested in the analytical sciences would get the opportunity to work on an analytical research investigation project, whilst other students interested in multiple areas could split their time.

What makes the work experience successful and why?

Planning the activities and the structure of each day in advance is a good way to ensure success. Getting buy-in from the staff who are going to be involved and listening to the students' feedback at the end are also very important.

We ask students what they enjoyed, what they didn't enjoy and what they thought we could do better. This is then acted upon the following year for the next round of students.

What are the key messages about the chemical sciences your company is trying to convey?

That people working in the chemical sciences are passionate about what they do and are committed to delivering a first class service in science.

We want the students to go away with a feeling that they really got involved with the work we do and that they are capable of doing something for a business like ours once they finish their studies. We want them to go away feeling confident about the future.

Are there any costs?

Time is the only cost. It is helpful to have a good risk assessment and someone on site who understands safeguarding and utilising the free advice the government want to give.

What advice would you give employers who wish to provide experiences of workplaces?

Read the government's online document, *Not just making tea - reinventing work experience*, and circulate it to other departments who will be involved in delivering the work experience activities. It busts a lot of the myths such as needing staff to be DBS checked.

Think about a person who inspired you to move into your career path. Imagine what your life would have been like if they had not taken the time to make the effort to engage with you. Now think about the fact that you can offer that inspiration to a young person who's looking for the same thing you received all those years ago. Once you're in a position where you can give something back I would encourage individuals and companies to do so.

Examples of how to do it: case studies



Mark Rolfe
Head of Kent Scientific Services,
Kent Scientific Services



Kent Scientific Services is a local authority laboratory which is owned and run by Kent county council.

They work across three areas: providing food, agriculture and pesticide analysis for local authority enforcement agencies and private industry; a calibration service covering weights, temperature, length, capacity and metering systems for local authorities and private industry; and they carry out forensic toxicology for Her Majesty's Coroners. The food-testing part of the business comprises of 27 people.

They provide a one-week workplace experience for young people at school who have completed their GCSEs. It is run multiple times across the year on a per individual basis. The young person receives an immersive hands-on experience in the laboratory after a half-day induction.

What inspired Kent Scientific Services to offer work place experiences?

Kent Scientific Services is part of the county council which is also the local education authority for Kent, therefore they have a remit to offer young people experiences in careers.

In addition the graduate chemists in the business are passionate about encouraging young people to take an interest in the chemical sciences. They gain a lot of job satisfaction from mentoring the young people who come in and it helps to keep staff up to speed and able to explain what they do and why.

How do you advertise the work experience?

Kent Scientific Services get a lot of approaches from schools asking about work experience without advertising. There are a limited number of places that a student can get the kind of experience that we are able to offer. There are only four public analyst laboratories in England.

Young people apply via an online form on the county council website. We recommend that schools direct their students to apply via the online form.

We look at the application and if the student has expressed a genuine interest in chemical sciences and a career in science. If the dates they want to come are available then we will offer them a place.

What goes in to planning the work experience?

The original programme was set up five years ago and comprises a half-day induction and working in the food-testing laboratory. It involves some planning time to assess any particular needs of a new student, but it is not terribly labour intensive. Every student is allocated a mentor from a pool of five staff who have expressed an interest to do that. The staff member continues to do their work but are the student's first point of call. What the young person will do every day depends on the nature of the work at the time.

It will typically involve being in the laboratory and carrying out some of the scientific testing preparation instrumentation work. The student will be involved in the sample testing, the homogenisation and the extraction, through to it going onto the instruments and the interpretation of the results.

There is no specific training for staff but the health and safety lead in the laboratory has training around the risk assessments and particularly for those with young people.

What makes the work experience successful and why?

The key to a successful placement is that students engage with the scientists in the laboratory. So, the students who get the most out of their placements are the ones who are prepared to ask lots of questions and who have the courage to ask the challenging question.

What are the key messages about the chemical sciences your company is trying to convey?

That the chemical sciences are critical to everyday life and that there are real, genuine career opportunities in chemical science that will have an impact on making people's lives better and improving the quality of what we eat, consume and use. The aim is to inspire young people to follow the scientific career path.

What financial and/or other investment is required?

There is no financial cost, just some time involvement from the staff in the laboratory.

What advice would you give employers who wish to provide experiences of workplaces?

Firstly – get involved. The staff in your laboratory will gain as much from the experience as the students do. Secondly – have a process that's in place and make it a process where it's the student and the laboratory who are having the relationship such as an online application process. That way the student can express their excitement about science and what they hope to gain from attending. Trust your staff to deliver a top quality experience – as our staff do.

Examples of how to do it: case studies



Christina Bird
Senior Analytical Chemist,
Domino Printing Sciences

Domino Printing Sciences develops and manufactures coding, marking and printing technologies that offer tailored solutions to customers spanning a diverse range of industries.

Their workplace experiences encompass site visits, job-shadowing and work experience to primary, secondary, university and higher education students. They also support educational programmes in STEM subjects and offer a two week work experience programme for small groups of secondary school students in year 10, ie 14 years. The scheme runs several times across the summer. After an induction and site-tour, the work experience students shadow a team to learn the various aspects of their work. They help the team on their current projects and meet teams from other departments to get some insight into different parts of the business.

They are also given a project to complete which involves working independently, and doing some research which they present at the end of the two weeks.

What inspired your company to offer work experience?

Domino firmly believes that corporate responsibility is integral to business success and we are an active member of the communities in which we operate. This helps to build our brand, our reputation and future recruitment needs. Domino believes that it is vitally important for young people to do work experience and job shadowing.

Having the opportunity to experience the world of work is great preparation for working life and helps young people make the right career decisions. In addition, we benefit from another pair of hands as the young people do productive work.

Domino is about inspiring careers in STEM subjects and future-proofing key roles. By taking the time to share our employees experiences of the chemical sciences we hope to encourage young people to follow those career paths in the future. The company also values building a network and pipeline of students who could become future employees.

How do you advertise the work experience?

Domino's HR team connects with schools, colleges and the community by accepting invitations to present at their careers events and recruitment fairs. This gives them an opportunity to publicise the work experience for secondary students. The programme is also advertised internally to employees' children.

What goes in to planning the work experience?

Planning work experience involves defining the work package and making sure instrumentation will be available. Another aspect of the planning is to redirect workload and inform colleagues, who might use instruments, in advance of the two week work experience. It covers scheduling time for the students to spend with formulation chemists, analytical chemists and development chemists and providing them with opportunities to try out different techniques and the different packages that are used to facilitate the team to perform their roles. We also provide training on skills and personal impact, time management and communication.

What makes work experience successful and why?

Ensuring there is meaningful work to do that will engage the student helps to make it successful. When a young person goes away challenged and having learned and developed not just technically but in terms of culture, values, behaviours it signals success. The upshot of that is that they will go home and tell their friends, family and their teachers about their positive experience.

What are the key messages about the chemical sciences your company is trying to convey?

That a career in chemical sciences can have a meaningful impact on real life and will be enjoyable and challenging. That the workforce is diverse and reflects the customers and communities in which it operates. That it offers an opportunity to learn and develop not just technically but in terms of values and behaviours.


Are there any costs?

Time is the main investment and Domino choose to cover the costs of lunch every day. Obviously there may be costs associated with the planned work packages which they would need to do regardless.

What advice would you give other employers who are interested in providing experiences of the workplace for young people?

It is really important to inspire the next generation of chemical scientists and engineers for future-proofing. You need to be prepared to invest time in providing the best experiences possible. Ensure that the activities offered can be measured and provide the young people with feedback. Also give consideration to who might mentor that person whilst they are on site. Think about other training opportunities you can offer outside the technical route, like communication skills, and see how you can incorporate their own interests into the work experience.





¹Industry leaders' urgent call for government to keep the UK chemistry talent pipeline flowing <https://www.rsc.org/news-events/articles/2019/sep/aspires-industry-skills-pipeline>

²Government Career Strategy Dec 2017

³HSE www.hse.gov.uk/youngpeople/workexperience/placeprovide.htm

⁴Gatsby Benchmark 6: Experiences of workplaces. Every student should have first-hand experiences of the workplace through work visits, work shadowing and/or work experience to help their exploration of career opportunities, and expand their networks.

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