

This guidance is provided as part of the [STEM Careers toolkit](#)<sup>1</sup> produced for Careers Leaders in secondary schools and colleges. It provides ideas and practical suggestions on how STEM-specific content can be used to support achieving the [Gatsby Careers Benchmarks](#)<sup>2</sup>. For wider advice and guidance on the Gatsby Careers Benchmarks, visit the [Careers & Enterprise Company website](#)<sup>3</sup>. All references and weblinks are provided in full at the end of this document.



## Gatsby Careers Benchmark 7 Encounters with further and higher education

### For schools

All students should understand the full range of learning opportunities that are available to them. This includes both academic and vocational routes, and learning in schools, colleges, universities and in the workplace.

### For colleges

All learners should understand the full range of learning opportunities that are available to them. This includes both academic and vocational routes, and learning in schools, colleges, universities and in the workplace.

## What this means for STEM



- 1 Provide opportunities for students and parents to find out about STEM further study routes at events like parents evenings, options evenings, careers fairs and celebration events. Consider using [volunteers from STEM industries and education](#)<sup>4</sup> to create an authentic experience.
- 2 Create and maintain your STEM address book with support from your colleagues, governors, parents and local careers networks (ie [Careers & Enterprise Company Network](#)<sup>5</sup> and [STEM Ambassador Hub](#)<sup>6</sup>). Keep a broad database of contacts, including a range of further education and higher education STEM faculties.
- 3 Develop your colleagues' awareness of STEM further study routes by arranging for them to accompany students to further and higher education careers events.

## Useful resources

- 1 Find out more about your [local STEM Ambassador Hub](#)<sup>6</sup> networking events
- 2 Contact your [Local Enterprise Partnership](#)<sup>7</sup>
- 3 Find out about your local [Careers & Enterprise Company Network](#)<sup>5</sup>
- 4 Evaluate your careers activity using the [evaluation tools provided by the Careers & Enterprise Company](#)<sup>8</sup> and [STEM Learning's career activity evaluation resources](#)<sup>9</sup>
- 5 Find out about [University Taster Events](#)<sup>10</sup>
- 6 Find out about [Gatsby Benchmark 7](#)<sup>11</sup>



### Organise STEM-specific experiences of further and higher education

Work with local colleges, training providers and universities to highlight their STEM offer to your students. The offer must showcase the breadth of routes available for STEM further study, identify the entry requirements needed for these routes and, where necessary, allow students to gain experience of being in the learning environment.

- ✔ Contact your local providers to arrange visits, invite guest speakers and set up collaborative activity. Many further and higher education institutions will have a dedicated outreach department that can provide career learning activities such as presentations, challenges, competitions and mentoring.
- ✔ Work with your [Careers & Enterprise Company Network](#)<sup>5</sup> to find out about open days and taster events. Where possible, try to arrange for STEM colleagues to attend these events with students, increasing their awareness of further study routes that link to STEM subjects.
- ✔ Review the existing STEM further and higher education activity that your colleagues are involved in. Incorporate these activities and contacts into your careers planning.
- ✔ Take advantage of [STEM-themed awareness events](#)<sup>12</sup> as a way of highlighting STEM further study routes:
  - use [British Science Week](#)<sup>13</sup> to highlight apprenticeships that link to science-related roles
  - use [International Women In Engineering Day](#)<sup>14</sup> to highlight study routes into engineering
  - use [Ada Lovelace Day](#)<sup>15</sup> to highlight study routes linked to computing and mathematics



## Create and maintain your STEM further and higher education database

Keep a record of the further and higher education contacts that you and your colleagues have. This database of contacts should cover a range of different STEM faculties and, ideally, be accessible for your colleagues to use in their own planning.

- ✔ Build up your address book by using contacts from your colleagues, governors, parents and student alumni. Use your Careers & Enterprise Company Network and your local STEM Ambassador Hub to fill in the gaps.
- ✔ Share your database of contacts and your knowledge of upcoming events with your colleagues in meetings and training events. Use this information to plan future careers activity, linking to curriculum subjects where appropriate.
- ✔ Use LMI and information from your [Local Enterprise Partnership](#)<sup>7</sup> and [Careers & Enterprise Company Network](#)<sup>5</sup> to understand which STEM sectors are growth areas for the future. Ensure that these sectors are included in your contacts and form part of your STEM further and higher education encounters (Benchmark 2 has more information on finding local LMI).
- ✔ Provide a point of contact for STEM education providers so that they can keep you informed of any events and activities. Keep your contacts engaged by including requests for support and updates on student activity in social media, blogs and newsletters.
- ✔ Analyse your STEM provision database regularly to ensure that you are showcasing a wide range of STEM further study routes (including A levels, T levels, apprenticeships, etc) across the full range of STEM subjects. Use evaluation tools provided by [the Careers & Enterprise Company](#)<sup>8</sup> (or similar) to record your further and higher education encounters, and share a summary with colleagues and your Leadership Team.

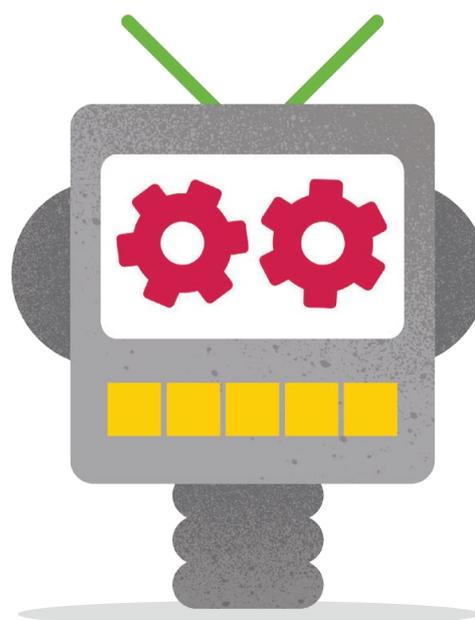


## Quality versus quantity

Assess the impact of your STEM-specific further and higher education experiences using student data, colleague feedback, [evaluation tools](#)<sup>9</sup> and support from your [Careers & Enterprise Company Network](#)<sup>5</sup>.

- ✔ Seek feedback from your colleagues on which STEM further study routes they would like more information about. Encourage this information to be shared across departments and used as part of lesson planning and extra-curricular activity.

- ✔ Create opportunity for students to discuss and record their experiences, asking questions such as: What STEM qualifications did they find out about? What are the different routes into STEM careers? Which routes would they like to explore further? How might they go about finding out more?
- ✔ Assess the impact of your FE and HE encounters with students and teachers. Use the [Making it meaningful checklist](#)<sup>16</sup> to structure your feedback, share the results at department meetings and with subject leaders.
- ✔ Work with tutors and STEM colleagues to prepare students for their encounters and reflect on their experiences after events.
- ✔ Evaluate destinations data for your key stage 4 and post-16 students, and identify any deficits in take-up of STEM pathways, subjects or courses that could be addressed by better tailoring of your careers strategy.
- ✔ Support providers to understand the key deliverables for an experience, for example:
  - inviting a university science outreach team to work with students and challenge the misconception that science is for 'geeks'
  - working with higher education providers to explore the wide range of courses that link to design and technology
  - arranging for a careers presentation from a local training provider, explaining the application process for apprenticeships
- ✔ If it works, shout about it! Use [evaluation tools provided by the Careers & Enterprise Company](#)<sup>8</sup> (or similar) to help record activity and share a summary with colleagues and your Leadership Team. Share news of your successful encounters with parents, governors and the wider community via newsletters and blogs, through your website and social media.
- ✔ Engage parents in further and higher education encounters, ensuring they have opportunity to find out about A levels, T levels, apprenticeships and degree routes. As one of the key influencers in students' careers decisions, parents will have questions of their own and, potentially, misconceptions about STEM opportunities and progression routes. Invite parents to be part of an encounter through holding events alongside parents evenings, options evenings and open events.





## AN EXAMPLE OF ...

## STEM-themed experience of higher education

Loughborough University provides a STEM-themed 'Loughborough Maze' activity day for four schools, 120 students. The day is delivered for Years 8 and 9, targeting students who are about to, or have just made, their GCSE choices.

**Inspired by the TV game show 'The Crystal Maze', students participate in three zones of activity, each with its own STEM focus:**

- **Murder Mystery Zone:** using forensic chemistry techniques, students are placed in a mock crime scene and challenged to try and solve the crime
- **Rocket Zone:** focusing on aeronautical engineering, students are challenged to competitively design and test a rocket
- **Geo Zone:** exploring the science behind our rivers, students look at river ecology on a microscopic level to understand the biological systems that keep our rivers healthy

As part of each activity, Student Ambassadors from Loughborough University provide information on what studying these subject areas in higher education involves. The students are also given an insight into what qualifications they would need to take after GCSE to progress into these subject areas, as well as handouts and links to online tools that will help them investigate what careers link to these subject areas.

Each session is led by either a Loughborough academic or outreach staff member, supported by existing Student Ambassadors who are studying STEM courses at Loughborough. The Student Ambassadors also act as chaperones for the students between zones and during lunch, giving them the opportunity to ask any questions they may have on STEM, higher education study or student life.

For more information on these events, visit [Loughborough University Outreach](#)<sup>17</sup>. To create your own STEM-themed university event, contact your [STEM Ambassador Hub](#)<sup>6</sup> to find out the details of local university STEM-specific outreach teams.



## AN EXAMPLE OF ...

## Long-term collaboration with higher education

**University College London (UCL) Engineering faculty<sup>18</sup> offers a number of STEM programmes and activities that focus on sustained, meaningful engagement with teachers and students.**

At the core of their engineering engagement strategy is the aim to strengthen and diversify the engineering workforce, by encouraging young people from all backgrounds to consider career pathways both 'in' and 'from' engineering. Their engagement with young people and schools seeks to create an ethos where engineering is seen as intrinsically worthwhile and relevant to students from all backgrounds, promotes diversity and gender equality, and – above all – is inclusive.

The STEM Career Pathways and Skills Exploration programme is offered to Key Stage 3 and Key Stage 4 students from state schools in the UK. Sessions are supported by UCL Engineering student STEM Ambassadors, acting as role models and tutors throughout the duration of the programme.

### The programme aims to:

- raise awareness of the exciting and wide-ranging STEM career and degree pathways
- support young people to make informed choices in order to fulfil their potential

### The programme consists of:

- **workshop sessions:** supporting young people to discover and acknowledge their own talents and strengths, building their resilience and confidence, while exploring and developing skills that different careers require
- **speed-networking sessions:** offering students the opportunity to find out about different areas of engineering, creating connections and meeting STEM experts from industry, academia and government
- **research sessions:** supporting students to research and build their STEM profession profiles, accessing a large number of career-related resources and learning about best ways to research STEM jobs, degrees and career options
- **'Learn and Reflect' sessions:** providing students with tutoring support for their STEM subjects, supporting them to achieve a deeper understanding of how STEM subject choices relate to engineering careers and degrees

## References

- <sup>1</sup> [www.stem.org.uk/rxgajd](http://www.stem.org.uk/rxgajd)
- <sup>2</sup> [www.careersandenterprise.co.uk/schools-colleges/gatsby-benchmarks](http://www.careersandenterprise.co.uk/schools-colleges/gatsby-benchmarks)
- <sup>3</sup> [www.careersandenterprise.co.uk](http://www.careersandenterprise.co.uk)
- <sup>4</sup> [www.stem.org.uk/stem-ambassadors/find-a-stem-ambassador](http://www.stem.org.uk/stem-ambassadors/find-a-stem-ambassador)
- <sup>5</sup> [www.careersandenterprise.co.uk/schools-colleges/join-our-network](http://www.careersandenterprise.co.uk/schools-colleges/join-our-network)
- <sup>6</sup> [www.stem.org.uk/stem-ambassadors/local-stem-ambassador-hubs](http://www.stem.org.uk/stem-ambassadors/local-stem-ambassador-hubs)
- <sup>7</sup> [www.lepnetwork.net/](http://www.lepnetwork.net/)
- <sup>8</sup> [tools.careersandenterprise.co.uk/login](http://tools.careersandenterprise.co.uk/login)
- <sup>9</sup> [www.stem.org.uk/lxg7uo](http://www.stem.org.uk/lxg7uo)
- <sup>10</sup> [www.unitasterdays.com/](http://www.unitasterdays.com/)
- <sup>11</sup> [www.careersandenterprise.co.uk/schools-colleges/gatsby-benchmarks/gatsby-benchmark-7](http://www.careersandenterprise.co.uk/schools-colleges/gatsby-benchmarks/gatsby-benchmark-7)
- <sup>12</sup> [www.stem.org.uk/resources/community/collection/448551/national-celebration-events-promote-stem-careers](http://www.stem.org.uk/resources/community/collection/448551/national-celebration-events-promote-stem-careers)
- <sup>13</sup> [www.britishscienceweek.org/](http://www.britishscienceweek.org/)
- <sup>14</sup> [www.inwed.org.uk/](http://www.inwed.org.uk/)
- <sup>15</sup> [www.findingada.com/](http://www.findingada.com/)
- <sup>16</sup> [www.careersandenterprise.co.uk/sites/default/files/uploaded/1207\\_-\\_meaningful\\_encounters\\_checklist\\_1.pdf](http://www.careersandenterprise.co.uk/sites/default/files/uploaded/1207_-_meaningful_encounters_checklist_1.pdf)
- <sup>17</sup> [www.lboro.ac.uk/study/school-college-liaison/](http://www.lboro.ac.uk/study/school-college-liaison/)
- <sup>18</sup> [www.ucl.ac.uk/engineering/collaborate/schools-engagement](http://www.ucl.ac.uk/engineering/collaborate/schools-engagement)



STEM Learning is the largest provider of education and careers support in science, technology, engineering and mathematics (STEM). We work with schools, colleges and others working with young people across the UK.

Our mission is to improve lives through education and ensure that every young person across the UK can access the world-leading STEM education they deserve. Inspirational teaching is vital and supporting teachers, alongside students, is fundamental to our approach. We provide teachers with professional development, educational resources, access to STEM Ambassadors and support for STEM Clubs.

[www.stem.org.uk](http://www.stem.org.uk)