

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 3

## Addressing the needs of each student / learner

#### For schools

Students have different career guidance needs at different stages. Opportunities for advice and support should be tailored to each of these key stages, with equality and diversity embedded in the school's careers programme.

#### For colleges

Learners have different career guidance needs at different stages. Opportunities for advice and support need to be tailored to the needs of each learner. A college's careers programme should embed equality and diversity considerations throughout.

### What this means for STEM

#### Top tips

- 1** When planning careers activity, support students to understand the wide range of jobs available in STEM sectors, including both STEM and non-STEM skilled roles.
- 2** Highlight the transferability of STEM skills to students, in particular, mathematics and digital skills. Support students to understand how STEM skills can support their wider employability.
- 3** Use [student voice](#)<sup>4</sup> and [evaluation tools from the Careers & Enterprise Company](#)<sup>5</sup> to identify cohorts of students who would benefit from specific STEM careers information.

## Useful resources

- 1 Evaluate your careers activities and students' perceptions of STEM with [STEM Learning's careers activity evaluation resources](#)<sup>4</sup> and [Careers & Enterprise Company tools](#)<sup>5</sup>
- 2 [Request a STEM Ambassador](#)<sup>6</sup>
- 3 Find out about gender stereotyping with resources from [WISE](#)<sup>7</sup>, the [Institute of Physics](#)<sup>8</sup> and [STEMettes](#)<sup>9</sup>
- 4 Find out more about [Science Capital](#)<sup>10</sup> and the [Science Capital teaching approach](#)<sup>11</sup>
- 5 Learn more about [Essential Skills with the Skills Builder Framework](#)<sup>12</sup>
- 6 Find out about [Gatsby Benchmark 3](#)<sup>13</sup>



### Challenge STEM stereotypes and raise aspirations – is STEM available for all?

Your careers strategy needs to understand your students' perceptions of STEM, challenge any misconceptions they might have around STEM careers and inform students (and parents) of available STEM careers routes and STEM further study options.

The misconceptions that surround STEM careers (and STEM qualifications) may prevent some of your students from seeing STEM as an option for them. Students need to see the benefit of STEM to their lives and recognise the positive impact that STEM skills like mathematics and digital skills can have on their wider employability.

- ✔ Help students and parents to understand the transferability of STEM skills and raise awareness of the wide range of roles involved in the STEM sectors. Use [STEM employers](#)<sup>6</sup> to provide an authentic voice at events where parents may be present, for example open evenings and celebration events.
- ✔ [Use student voice](#)<sup>4</sup> to understand your students' perspectives on who can do a job in STEM, what exam grades they need and what types of STEM careers are available.
- ✔ Use STEM employers to challenge misconceptions around diversity and academic ability:
  - arrange meaningful encounters that expose students to a range of volunteers from different backgrounds, providing students with a broad view of who can work in a STEM role (see Benchmark 5 for more support)
  - invite apprentices, and those who studied a diverse range of qualifications, to share their journey through STEM, challenging the misconception that you need a degree to find work in STEM industries

- reach out to your student alumni currently working with STEM employers. Arrange for them to meet with students who perceive STEM subjects as 'not for them' so that these students can meet someone from their local area who is successful in a STEM industry
- ✔ Work with your colleagues to challenge STEM stereotypes. For example:
  - can science lessons use examples of scientists that don't work in labs?
  - do learning environments display a balance of gender representation for jobs such as engineering, medicine and construction? Organisations such as [WISE](#)<sup>14</sup>, the [Institute of Physics](#)<sup>8</sup> and [STEMettes](#)<sup>9</sup> have resources and careers activities designed to address gender stereotyping
  - do mathematics lessons highlight mathematics as a transferable skill by providing examples of it being used across a wide range of careers?
- ✔ Share the [Science Capital](#)<sup>10</sup> research with your STEM colleagues. Science Capital helps to understand why some young people have a science identity, seeing science as being 'for me' and others do not.



### Evaluate your STEM profile

Understanding how your students engage with STEM-specific further study and employment destinations will allow you to build up a STEM profile. Use this profile to target STEM careers activity at those cohorts of students that are most in need of STEM-specific support.

- ✔ Use your destinations data to explore which students go on to STEM careers and STEM further study. Does the data show over or underrepresentation from particular student cohorts? Should you be targeting STEM career learning to encourage specific student groups?
- ✔ Are there specific cohorts of students that undertake STEM study at level 2 and level 3? Can you provide support for your STEM faculties to target recruitment of underrepresented groups?
- ✔ Investigate the STEM profile of your colleagues, governors and parents. Can these local role models share their positive STEM experiences through displays, talks and informal discussion? If students can see the value of STEM with those that they trust, they may be more likely to see STEM as a value in their own lives.
- ✔ Gather data on your student alumni and invite them to support your STEM careers activities. Invite them to share their experiences of study, employment and life after school or college.
- ✔ Challenge students to reflect on what they have learned from STEM-specific careers activities and prompt them to record these in their careers journal or records. Whilst not all students who have participated in STEM-specific careers activity will end up in a STEM career, helping students to understand the transferability of the skills that they develop will benefit their wider employability.

- ✔ Use [student voice](#)<sup>4</sup> and [evaluation tools from the Careers & Enterprise Company](#)<sup>5</sup> to identify cohorts of students who would benefit from specific STEM careers information, ie do you have a group with an interest in engineering, medicine, gaming etc? Look at putting on specific sessions for them, inviting industry professionals to share their stories and providing tailored careers information.



### AN EXAMPLE OF ...

### Using extra-curricular activity to target underrepresented groups

**East Barnet School**<sup>15</sup> is a mixed-gender secondary school that uses robotics as a hook to engage female students in engineering. The school runs a successful **VEX Robotics**<sup>16</sup> Club that specialises in creating all-female teams that design, build and program their own robots for regional, national and international competitions.

The Club Leader is a design and technology teacher who, after finding out about the low number of females working in engineering, decided to use robotics as a way to engage female students in engineering and technology.

*"I believe everyone should have the opportunity to experience this type of activity. For me it's more than robotics, it's about learning to work with different people from different cultures, it's about developing confidence in public speaking, it's developing perseverance when your robot needs improving or has a problem. We've found that robotics definitely changes students' views on what they think engineering is and has nudged some of our students in a direction that they may initially not have thought of. It's also changed the perceptions of some parents too, so much so that I have a group of enthusiastic parents that like to show their support at competitions!"*

#### **Stephen Sadler, Club Leader**

The Club recruits female students by advertising in D&T lessons, Club advertisements and in assemblies. Having successfully recruited female teams for a number of years, they now employ their student alumni to mentor teams as they progress through the UK championships. More recently, the Club has developed into an outreach provision for local primary schools, using the expertise of current female students to support younger children to find out about robotics. This provides leadership opportunity for the Club members and encourages them to develop their communication skills with a different audience.

To start a similar Club activity, why not target your recruitment drive around a STEM competition or event? [These STEM competitions](#)<sup>17</sup> will provide you with some inspiration.



## AN EXAMPLE OF ...

### Students recording their careers experiences in STEM

**Studio West<sup>18</sup>** are a Studio School in Newcastle upon Tyne. The school has a heavy emphasis on preparing their students for the world of work and they do this through close relationships with employers who offer extended work placements, project-based learning briefs and a whole host of tailored activities.

Studio West students use the [globalbridge<sup>19</sup>](#) online platform to capture their careers activities, raise awareness of themselves with local employers and explore advertised work placement opportunities. Each student receives a digital profile that captures videos, photos and weblinks to projects that the students are involved in. Students are encouraged to capture activity inside and outside of their lessons, helping to build a profile of all their careers-related activities.

For one Studio West student interested in digital careers, creating an online career profile enabled them to gain an extended work placement at an employer, leading to an IT degree apprenticeship with the same employer at university.

The student had undertaken a range of careers activities in school and after recording these on their profile, decided to share their profile with a local employer. The student was invited to an interview and after a successful placement during sixth form, went on to successfully interview for an apprenticeship.

To replicate this activity, consider how your students record their careers experiences. Are these records available to students for them to curate and reflect on? Is there content that they can record that will help them with future job applications?



## 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/resources/community/collection/464724/measuring-impact-your-stem-careers-programme](http://www.stem.org.uk/resources/community/collection/464724/measuring-impact-your-stem-careers-programme)
- <sup>5</sup> [tools.careersandenterprise.co.uk/login](http://tools.careersandenterprise.co.uk/login)
- <sup>6</sup> [www.stem.org.uk/stem-ambassadors/find-a-stem-ambassador](http://www.stem.org.uk/stem-ambassadors/find-a-stem-ambassador)
- <sup>7</sup> [www.wisecampaign.org.uk/](http://www.wisecampaign.org.uk/)
- <sup>8</sup> [www.iop.org/education/teacher/support/girls\\_physics/resources/page\\_63821.html](http://www.iop.org/education/teacher/support/girls_physics/resources/page_63821.html)
- <sup>9</sup> [www.stemettes.org/](http://www.stemettes.org/)
- <sup>10</sup> [www.ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research/](http://www.ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research/)
- <sup>11</sup> [www.ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research/science-capital-teaching-approach](http://www.ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research/science-capital-teaching-approach)
- <sup>12</sup> [www.skillsbuilder.org/](http://www.skillsbuilder.org/)
- <sup>13</sup> [www.careersandenterprise.co.uk/schools-colleges/gatsby-benchmarks/gatsby-benchmark-3](http://www.careersandenterprise.co.uk/schools-colleges/gatsby-benchmarks/gatsby-benchmark-3)
- <sup>14</sup> [www.wisecampaign.org.uk/](http://www.wisecampaign.org.uk/)
- <sup>15</sup> [www.eastbarnetschool.com/](http://www.eastbarnetschool.com/)
- <sup>16</sup> [www.vexrobotics.com/](http://www.vexrobotics.com/)
- <sup>17</sup> [www.stem.org.uk/enrichment/competitions-challenges](http://www.stem.org.uk/enrichment/competitions-challenges)
- <sup>18</sup> [www.studiowestnewcastle.com/](http://www.studiowestnewcastle.com/)
- <sup>19</sup> [www.myglobalbridge.com/](http://www.myglobalbridge.com/)



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)