



STEM Skills Indicator

Introduction

“We are living through a period of unprecedented change. Technology is transforming the way that businesses organise themselves and the products and services they offer. We have always needed technological know-how in our economy, but the nature of these changes makes science, technology, engineering and mathematics (STEM) skills more vital than ever.

Our new STEM Skills Indicator tells a story about UK business that we need to act upon. We spoke to business leaders in companies at the cutting edge of the industrial economy, from healthcare to AI and robotics. Most of them told us that they are struggling to recruit staff with the STEM skills they need.

The government rightly sees promoting STEM as a central part of our industrial strategy and they are making it a major priority; businesses also need to step up to meet the challenge, which they themselves tell us is so urgent.

At STEM Learning, we work with businesses and schools to solve this problem. We use business’ funds and know-how and that of government to create programmes that have impacted 20,000 schools and more than 2 million students this year alone, training teachers and educators as well as getting experts into schools to share their knowledge and expertise.

It is clear though the STEM skills shortage is not going away. That is why we are calling on more businesses to come forward and work with us to address this most pressing issue.”

Yvonne Baker, Chief Executive, STEM Learning

Key findings

Our research questioned 400 HR directors and decision-makers in businesses that rely on staff with science, technology, engineering and maths (STEM) skills. It was conducted by independent research agency PCP between 20th and 30th April 2018.

- Business leaders revealed a major shortage of staff with STEM skills
- The shortage is estimated to cost them £1.5 billion a year¹
 - The costs were incurred through recruitment, temporary staffing, training and inflated salaries
- Seven in 10 STEM employers have found it difficult to hire staff with the required skills in the last year
 - This has created a shortfall of over 173,400 workers, an average of 10 unfilled roles per business
- Businesses in R&D intensive sectors are most affected
 - 90% of engineering businesses say the situation has worsened
 - Pharmaceuticals / healthcare and accountancy / fintech have also been heavily affected (over 80%)
- Nine in 10 (89%) businesses find that recruitment is also taking longer, with the process taking an average of 31 days longer than expected
 - They are turning to expensive staffing solutions (74%) hiring at more junior levels (65%) and training staff in-house (83%)
 - Businesses are also pushing up salaries by as much as £10,900 (in larger companies) to attract the right talent
- Almost half of STEM businesses (48%) are looking abroad to find the right skills and the majority (63%) believe that Brexit is likely to exacerbate the shortage
- These businesses are citing limited awareness of the jobs available (31%) and lack of meaningful work experience opportunities (35%) as key barriers to young people considering STEM careers
- Seven in 10 (70%) are hiring candidates without a STEM background and six in 10 (60%) are leaving positions unfilled
- Over half (56%) expect the STEM skills shortage to get worse over the next decade
 - Meanwhile, the growth of the sector will likely double the number of roles by 2028



- Employers have expressed concerns that the UK could fall behind other countries in terms of technological advancement (54%), lose research and development credentials (43%) or deter foreign investment in the sector (50%)
- Nearly one in five of these businesses (18%) that are struggling with skills shortages admit that businesses need to do more to attract talent into the sector
- The most challenging level to recruit for in STEM businesses proved to be senior workers, with 44% of employers struggling to fill these positions in the past 12 months
- Nearly half (46%) of employers believe that automation will increase the number of high skilled roles required in the sector

¹Average cost per business on recruitment, temporary staffing, training and inflated salaries is £88,012. According to the ONS there are 17,340 STEM businesses in the UK (excluding micro-businesses). Therefore the total cost for all STEM businesses in the UK = £88,012 x 17,340 = £1,526,135,016