

Why we're building STEM capital

STEM capital broadens out the idea of science capital and its associated teaching approach, which aims to engage a greater number, and more diverse, set of students with science. A person's science capital is made up of all an individual's science-related knowledge, attitudes, experiences and social contacts¹.

This idea builds on Bourdieu's concept of 'cultural capital'.

What is cultural capital?

Pierre Bourdieu, a French sociologist and philosopher, defined cultural capital as 'familiarity with the legitimate culture within a society'. His work identified three main sources of this capital; objective (books, art), embodied (language, mannerisms) and institutionalised (qualifications, credentials). It is characterised by the experience and skill to be able to deploy the appropriate knowledge in any given situation, from a job interview to a conversation with a neighbour².



STEM in real life

STEM capital applies similar principles to one's understanding and knowledge of science, technology, engineering and mathematics, as well as their potential uses in our lives. In order to make this link between knowledge and behaviour and inspire young people to enjoy, take up and add value in these fields, students' learning needs to be multifaceted and relevant to their own lives. It's also about being aware of what young people already know and where the gaps are, as well as understanding their environment and how it affects both their learning and sense of self.

STEM subjects must not just be about learning facts, figures and information, but personalised learning that helps a person apply analytical methods of thinking to real life.

Raising capital is key in helping young people think of STEM subjects as 'for them' and encouraging pursuit of these subjects at GCSE level and beyond. For example, research from University College London showed that using the science capital teaching approach for a single year had a significant impact on the percentage of students choosing science at A-level³. We need to address this to close the STEM skills gap: Engineering UK state that there is currently an annual shortfall of 59,000 engineering graduates and technicians to fill core engineering roles⁴.

¹ The Science Capital Teaching Approach: engaging students with science, promoting social justice from University College London

² What is cultural capital? from Cultural Learning Alliance

³ Snapshot of the key outcomes of the Science Capital Teaching Approach from University College London

⁴ The state of engineering 2018 from EngineeringUK

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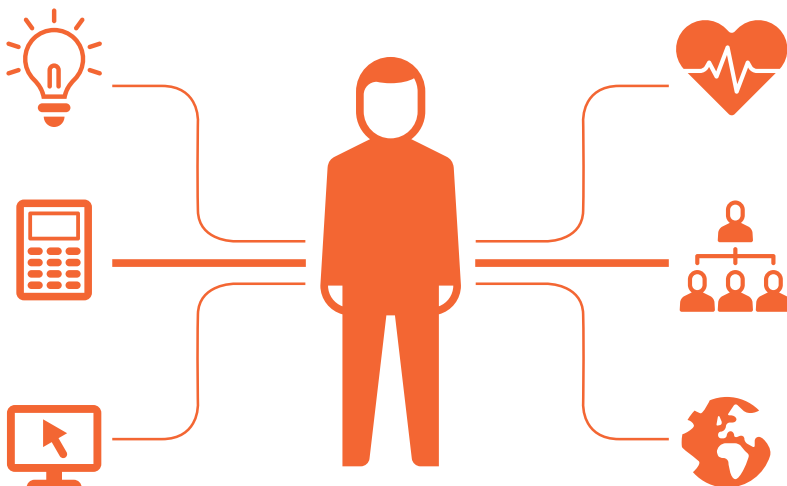
How can GSK STEM Education help?

GSK STEM Education seeks to build STEM capital for all learners through all the elements of our programme. With your help, we want to expose young people all over the UK to the knowledge, experiences and connections which will build their confidence and enjoyment of science, technology, engineering and mathematics.

We offer learning resources, online content and real-life opportunities for young people and educators to acquire new information and skills, encouraging them to explore what their learning means in real life. Our resources support developing critical and scientific thinking by providing practical activities to put skills into action, and opportunities to hear from people who use STEM in their daily jobs and lives.

However, it's not just about inspiring a new generation of biochemists and automation engineers. We want to help everyone feel confident using STEM skills in everyday life, perhaps without even really realising it. STEM understanding can help with all sorts of tasks, from questioning statistics in the news and having a conversation with a healthcare professional, to analysing data at work and deciphering instruction manuals for household goods.

We're here to power future innovators and help create a STEM literate workforce, ready to take on the challenges of our future, both big and small.



"It's easier to think of STEM capital as a backpack that our students come to school with every day. For some students, that backpack is brimming with knowledge, experiences and adopted attitudes. For others, it's empty and needs to be filled. That's where school trips, inspiring assemblies, fun practicals that make learning relevant, along with external speakers and spin off conversations in the science classroom can really help."

Year 9 science teacher