A Parent's Guide to
Science, Technology, Engineering and Mathematics (STEM)

STEM: What's it all about?

In today's world, we face many challenges, from climate change to sustainable food sources, from the treatment of diseases to online security and more. With a global population increasing all the time, the world needs more problem solvers skilled in science, technology, engineering and maths (STEM) to help find solutions. STEM skills are crucial to the modern world and are an important part of the Irish economy.

STEM provides some of the most exciting and fulfilling careers available. Europe is facing a shortage of STEM skills. This provides Irish students with the opportunity to have excellent career prospects in a diverse number of sectors, command attractive salaries, benefits and to enjoy travel opportunities.
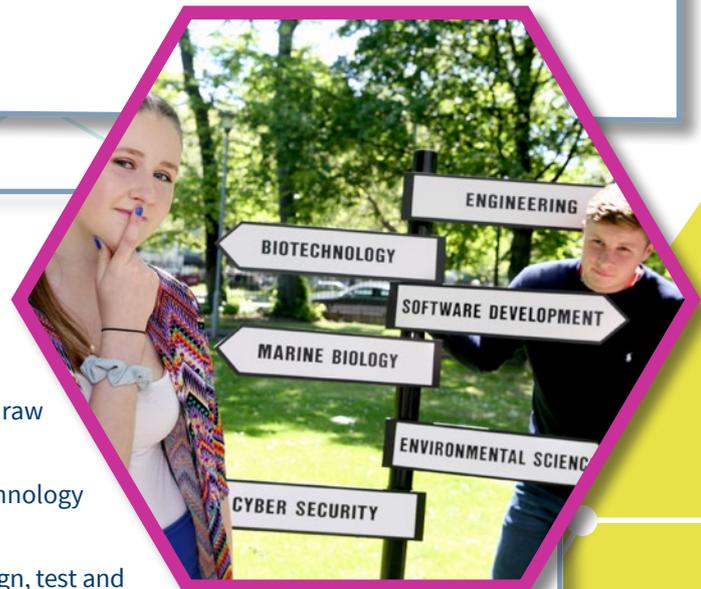
Demystifying STEM

STEM subjects like science and maths are sometimes seen in a stereotypical way, as being more difficult than others, or more relevant to boys than girls. We must encourage our young people to look beyond this and explore STEM careers; to challenge these misconceptions, so they are well prepared for the jobs of the future.

STEM careers require innovation and people with the ability to resolve problems with imaginative solutions. Without creative thinkers, science and technology cannot progress.

What skills will a STEM student develop?

- **Problem solving:** Define questions and problems, design investigations to gather data, then collect and organise data to draw conclusions and apply what they have learned.

- **Innovation:** Creatively apply science, mathematics and technology concepts to real-world situations.

- **Invention:** Recognise a need or problem, then creatively design, test and implement solutions to solve them.

- **Logical thinking:** Apply the rational and logical thought processes of science, mathematics, technology and engineering to innovation and invention.

- **Technological literacy:** Understand the nature of technology, develop technical skills and know how to apply them; having confidence to adapt and explore technology; enjoy life-long learning.

What can parents do to help?

Trying to decide what career you'd like to follow requires some research. Students are faced with a huge range of options and many have little knowledge about where to find relevant information, or how to get access to experienced people that can give advice. Parents may also struggle to support their children through this journey. Here are a few activities to undertake to overcome this:

Encourage

Encouraging your child is hugely important. Students are strongly influenced by their parents, when choosing what to do after school. Allow them to explore, investigate and try out science and technology for themselves to see if they enjoy it. Ask their school to register for free STEM career talks on **www. SmartFutures.ie** so students and parents can meet role models.

Challenge

Identify and challenge misconceptions about STEM. Stereotypes can prevent students from seeing themselves in these roles. Explore websites like **www.SmartFutures.ie** to read real-life STEM career stories of people from all kinds of backgrounds. Parents should also consider their own fears or negative perceptions about STEM and avoid passing these on to their children.

Get active

Help open your teenager's their eyes to exciting career paths they may have dismissed. Visit **www.SmartFutures.ie** to see a list of STEM events happening all over the country that you can attend together. Try out a free Coder Dojo club (**www.CoderDojo.com**). Become comfortable with college websites and others like **Qualifax.ie** and **CAO.ie** site. Attend college open days, so you both get a better understanding of what each is on offer.

STEM for girls

Women are still under-represented in STEM subjects today. Giving young females access to female role models in science and technology sectors is an important factor in encouraging them to pursue STEM careers. Encourage them to explore hands-on science and keep on STEM school subjects, so they don't miss out on opportunities. Attend events like **www.iWish.ie or https://girlshackireland.org** to meet female role models.

To learn more, visit the parents' section on www.SmartFutures.ie under 'Resources' or contact us on smartfutures@sfi.ie / Tel: 01 607 3271

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