AMGEN
BIOTECH EXPERIENCE

GERMANY

QUICK FACTS

100,000

In a typical year, ABE reaches approximately **100,000 students** and **1,700 teachers**.

$0

The programme curriculum, professional development, and all needed materials are provided free of charge.

1,250,000+

Globally, the programme has impacted **more than 1.1 million students** to date because of the Amgen Foundation's **$75+ million commitment** to the programme.



"It is cutting edge to be teaching [these labs] in a secondary school, and the students love it. They excel in it, and they are enthusiastic about science, having been able to do [ABE]. You cannot beat the practical experience in my opinion."

—ABE Teacher

The Amgen Biotech Experience (ABE) is an innovative science education programme that introduces secondary-school students to the excitement of scientific discovery. ABE provides secondary-school teachers with the loan of research-grade equipment, supplies, curriculum materials, and professional development at no cost.

Biotechnology

Biotechnology has brought about the discovery and development of a new generation of human therapeutics. Advancements in the field have allowed scientists to identify and develop a host of new medicines for patients with serious illnesses. Biotechnology provides the tools and techniques for modern pharmaceutical research and drug development, and it is critical that citizens are knowledgeable about this field.

Programme Background

The Amgen Biotech Experience began 35 years ago through a unique collaboration of Amgen scientists and educators with a passion for sharing the joy of science and discovery. With the vision to bring the excitement of biotechnology to the fingertips of students, they developed a robust curriculum that is now available in 27 locations across the globe. In 2013, the Amgen Foundation joined forces with Education Development Center, a global nonprofit organisation with deep experience and expertise in science education, to establish a Programme Office to support and strengthen the programme worldwide.

Interest and Confidence

Independent and rigorous **evaluation data** found that students exposed to ABE have significant and substantial learning in biotechnology and increased interest and confidence in doing science and biotechnology.

Locations

ABE is currently available in the following locations: Australia, Brazil, Canada, France, Germany, Hong Kong SAR, India, Ireland, Italy, Japan, Mexico, Singapore, South Africa, The Netherlands, Türkiye, United Kingdom, and multiple Amgen communities in the United States.

AMGEN FOUNDATION

Amgen Biotech Experience is an international programme funded by the Amgen Foundation with direction and technical assistance provided by Education Development Center (EDC).

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EDC.ORG

The Programme and Curriculum

ABE allows students to explore the steps involved in creating biotechnology therapies. Aligned with secondary biology curricula, the programme supports the larger goal of fostering scientific literacy. In addition to the curriculum and professional development to understand the background science and lab procedures, participating teachers receive, free of charge, loaned research-grade equipment and supplies that allow students to participate in advanced science laboratories. ABE also facilitates connections between students and scientists through the ABE Volunteer Programme, which connects Amgen staff with ABE teachers and students through in-person and virtual classroom visits.

The Labs and Materials

The ABE labs parallel some of the important steps taken by the biotechnology industry to develop medicines to treat a variety of diseases and to incorporate core technologies used by scientists in the discovery of human therapeutics. The labs help students better understand the potential impacts that biotechnology as a science and as an industry may have on their futures, thus inspiring them to pursue careers in the sciences. **LabXchange** has created a collection of pathways designed to enhance the ABE lab experience, including modular resources that teachers can mix and match to best support students.

Teacher Supports

ABE supports teachers around the world through high-quality professional learning experiences, access to a global community of practice, and implementation resources. This support is designed to accomplish the following:

- Increase teacher capacity to implement ABE effectively
- Develop site capacity to support effective ABE implementation within schools
- Develop lifelong engagement and interest in the sciences for ABE students

ABE provides opportunities for teachers to be both learners and leaders within their local programmes and internationally.

ABE Germany

Technical University of Munich

ABE Germany is led by the Technical University of Munich's (TUM) School of Social Sciences and Technology and the *Schülerforschungszentrum Berchtesgadener Land*. The programme provides teachers with training in the fields of molecular biology and biotechnology, helping to connect the scientific concepts to medicine while also providing research-based pedagogical practice. ABE Germany offers biology students the unique opportunity to explore the field of biotechnology in a theoretical as well as a practical manner.

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