



SDG Teach In 2026 case study

Institution name: University College Birmingham

Course/subject/module/class name: Further Education Chemistry

Educator name: Pooja Gajjar

Overview

This FE Chemistry course focuses on practical laboratory skills, chemical reactions, and transition metal chemistry. To enhance engagement and learning outcomes, I developed a **virtual lab simulation application** that allows students to perform experiments safely and interactively. The simulation incorporates real-world chemistry scenarios while embedding sustainability principles, enabling students to explore chemical processes with minimal environmental impact.

Approach to the Teach In

During the SDG Teach In, I introduced the lab simulation to FE students, highlighting how **virtual experiments reduce chemical waste, energy consumption, and hazardous material use**. Students used the simulation to explore green chemistry principles, reaction efficiency, and safe laboratory practices. The activity also encouraged problem-solving, collaboration, and reflection on sustainability in chemistry.

Next steps include expanding the simulation to cover additional chemistry topics, adding challenges related to **sustainable industrial processes**, and integrating SDG-focused reflection tasks into assessments.

Educator quote:

"The virtual lab is a powerful way to connect curriculum learning with real-world sustainability issues."

SDGs related to this Teach In

- **SDG 4 – Quality Education**
- **SDG 12 – Responsible Consumption and Production**
- **SDG 13 – Climate Action**

More information

Simulation and curriculum resources: <https://science-playroom.lovable.app>