

Greener Fragrances

Evaluation
summary

GREENER FRAGRANCES



Project partners



The Institute for
Research in Schools



About the project

Chemistry plays a vital role in improving industrial processes, making them more sustainable and minimising environmental impact. Researchers today are focusing their attention on ionic liquids and specialised chemicals to transform various industrial procedures - from the production of fragrances for personal care products to flavouring agents in food manufacturing.

Greener Fragrances offers young people an alternative perspective of chemistry and is the result of a collaboration between IRIS and the Ionic Liquids Laboratory (QUILL) and Department for Chemistry and Chemical Engineering at Queen's University Belfast (QUB), thanks to funding provided by the RSC.

The project enables students to engage with the innovative scientific investigation and appreciate real-world applications. It is designed for students who have a real passion for higher level chemistry. Students gain practical research experience, apply principles learned at A level, advance their laboratory skills, and develop a deeper understanding of careers in scientific research.

Project aims

- To create opportunities for students to contribute to meaningful academic research in a chemistry-related field, replicating academic research in a school environment.
- To increase students' understanding and confidence in chemistry by contextualising the chemical sciences and showcasing the range of career opportunities.
- To increase interactions between students and academic and industry professionals, helping to reduce barriers.

Student registrations

	23-24	24-25
Number	74	77
Post-16	100%	100%
Female	46%	75%

Methodology

Data on the project's impact has been gathered from the pre and post participation surveys since the project inception.

Item	23-24	24-25
IRIS pre-participation survey	25 students	73 students
IRIS post-participation survey	7 students 13 teachers	62 students 11 teachers

Impact on students

Students were enthusiastic about their experience. Students appreciated the practical and hands-on nature and being able to go beyond the curriculum. Students also enjoyed working with peers and having the opportunity to express their ideas.

“I felt more involved in this project and got to express my own ideas. We also got to tailor parts of the project that weren't working. I also felt when carrying out the research I was helping increase scientific knowledge instead of repeating a rigid experiment from a textbook.”

Year 13, female student

Impact on students' skills development

Students gained skills in conducting research investigations, applying chemistry concepts to real-world contexts, and using advanced laboratory equipment. They appreciated tackling difficult experiments, which broadened their grasp of chemistry and STEM-related applications.

The experience helped students develop a range of transferable skills, including teamwork, communication, and problem-solving. Collaborating in smaller groups boosted both cooperation and confidence, and students recognised that these skills would benefit them in future academic and professional pursuits.

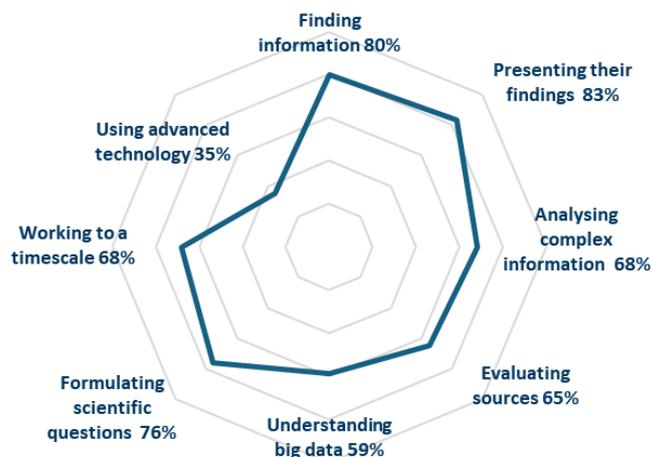
“It gave me the ability to do extensive research and grow my confidence when presenting my research.”

Year 12, female student

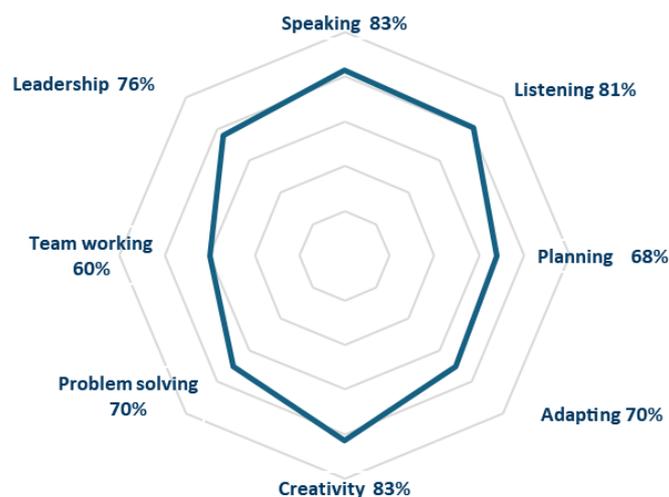
77% of students agreed that they developed important skills that will help them in the future.

Evaluation Summary

Through the project, students agreed that they had improved their research skills...



...and their transferable skills



“I enjoyed the collaborative aspect and the hands-on approach to conducting research.”

Year 12, female student

“It encouraged them to be creative and problem solve. Students who would not necessarily be the best academically had a chance to shine as some of them were much better organised and good at problem solving and working together.”

Teacher

Understanding of STEM and research

The project helps students to feel more positive about research and STEM. Students appreciated the experience of collaborating with scientists which gave them an insight into the work of real scientists.

Students understand...

87% ...research can be hard work but is rewarding

86% ...success in research is a team effort

The project helped students to explore areas of STEM beyond the classroom. Students...

83% ...know how STEM can make a difference in the real world

76% ...know about STEM beyond the school curriculum

“I have really enjoyed the opportunity to engage with more technical science equipment. I also liked getting to ask and explore my own questions instead of being restricted by a set curriculum.”

Year 13, female student

“It is very beneficial to explore subjects beyond the curriculum, and gain insight from other students on different topics.”

Year 12, female student

“It's a unique and fun experience that develops teamwork skills and lets you research a topic that you might not have had the chance to learn about at school.”

Year 12, female student

Future career impact

The project provided insight into STEM careers and research. This exposure inspired some to consider further study in science and helped them understand the skills required for research roles.

“It was a great experience and allowed me to have more insight into chemistry as a career and see what research is like such as literature analysis of papers and chemical analysis. It was also very enjoyable to be involved in more practical work and lab skills outside of the ones learnt in the classroom. This also prepared me for my university application.”

Year 13, male student

Students...

83% ...have a better understanding what it might be like to study STEM at a higher level

79% ...know about a range of different STEM careers

73% ...agree that being a researcher would be an interesting career

“It will open your eyes on how STEM is everywhere all about you all the time and how to take advantage of this.”

Year 12, male student

“It's a fascinating opportunity to conduct your own research, very different from just learning. Also good for UCAS.”

Year 12, female student

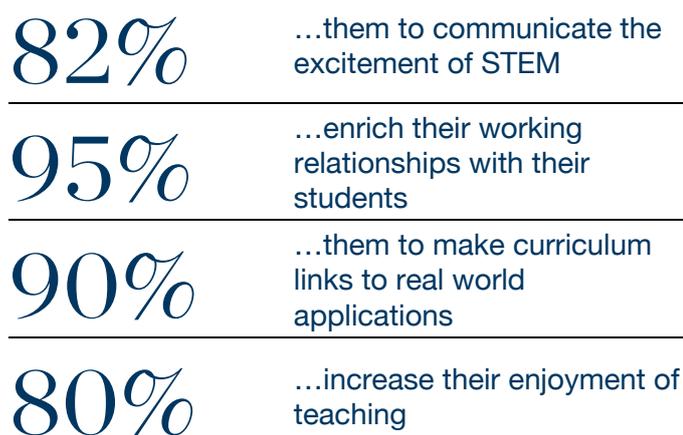
“Do it and stay open to new opportunities to learn about other career paths.”

Year 12, male student

Impact on teachers

Teachers feel that the project encourages student collaboration and sets science in a real-world context. This increases engagement, provides stretch and challenge, and helps students develop a deeper understanding of the curriculum.

Teachers found that running the project helped...



Teachers also reported personal benefits from participating in the project such as developing different ways of delivering practical sessions or incorporating learning about greener chemistry.

“It gave the students the feeling they were part of something important... They could see how their work could fit into a bigger vision.”

Teacher

“The project exceeded all of my expectations because it was so relevant, it was so on the button... We needed some more elements of bringing in the real chemistry world into the classroom, to the students and this just worked.”

Teacher

