

# Future Flight

## Evaluation summary

# FUTURE FLIGHT



*Project partners*



The Institute for  
Research in Schools



Innovate  
UK



### About the project

IRIS has partnered with ZeroAvia to upskill our future aerospace engineers and empower the next generation to understand the science behind flight and consider more sustainable fuel solutions. In Future Flight, students explore the concepts and technologies that propel aviation, from aerodynamics to hydrogen-electric propulsion. They learn how to use the open-sourced software OpenVSP, used by engineers to design, create, analyse and improve aircraft designs.

### Student registrations

Students from UK schools and colleges from a wide geographical range have taken part in the Future Flight project.

	23-24	24-25
<b>Number</b>	103	116
<b>Post-16</b>	69%	75%
<b>Female</b>	37%	36%

### Aims

The IRIS evaluation is based on the aims of the project:

- Explore STEM subjects beyond the curriculum, contextualising classroom learning
- Use analytical and problem-solving skills to try to address a global challenge
- Increase students' understanding of flight aerodynamics, and the use of hydrogen fuel cells as a source of green energy
- Gain an awareness of careers in green aviation
- Learn to use industry standard 3D modelling software

### Methodology

Data on the running and impact of the project has been gathered from the pre and post IRIS evaluation survey data since the inception of the project.

Item	23-24	24-25
IRIS pre-participation survey	69 students	62 students
IRIS post-participation survey	43 students 15 teachers	48 students 17 teachers

### Impact on students

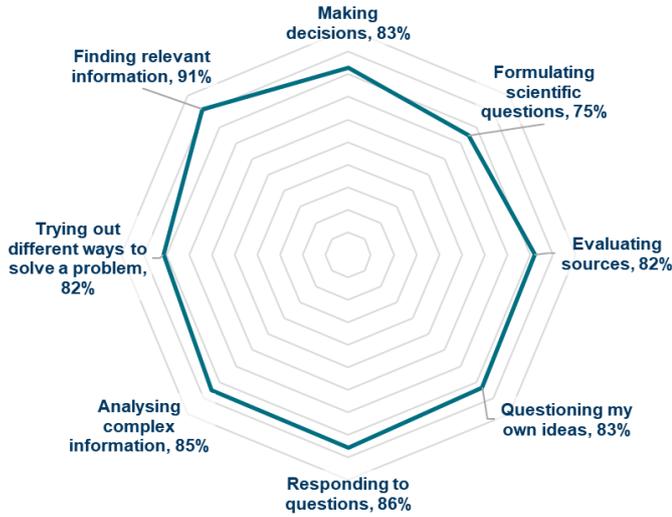
Teachers told us that this project supported students to:

- Understand the real-world applications of STEM
- Explore science beyond the curriculum
- Become more confident of their STEM abilities
- Develop skills in speaking and listening
- Improve their teamworking and problem-solving skills

**89% of students agreed that they developed important skills that will help them in the future.**

## Future Flight

Through the project, students said that they improved their critical thinking skills:



**“[I learned that there are] lots of different solutions to the same problem, and we need a mix of all of them to work.”**

Year 12, male student

**“I really liked how challenging the project was and it allowed me to build skills in science communication and research [which] I hope to develop in the future. It was especially interesting building skills in an industry used platform like open VSP.”**

Year 12, female student

**“I learned a lot about the process of scientific research, experimentation and analysis.”**

Year 12, male student

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Students told us that the project was hard work but it was fun and rewarding, and it helped them:

- Work together to overcome challenges and find solutions to real world problems
- Understand what is involved in real world research
- Understand more about the need for sustainable solutions to carbon emissions and the complexity of developing them
- Learn how to work as a team to carry out research

**76%** I know how STEM can make a difference in the real world

**78%** Research is hard work but is rewarding

**71%** Success in STEM is a team effort

**80%** I feel confident exploring ideas with other people

**“Sustainability is crucial and will be for generations to come.”**

Year 12, male student

**“It made me more aware and invested in how we can use scientific research to reduce our carbon emissions particularly revolving around the leisure activity of flying.”**

Year 10, female student

**“I liked how our research project was relevant to sustainable flight, something very important that will have an impact on everyone. Using the OpenVSP software was fun and collaborating with my friends for this project was great.”**

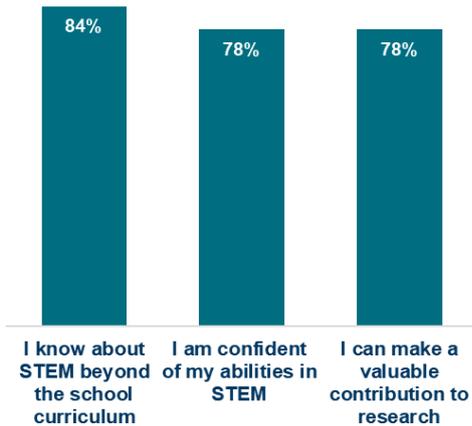
Year 12, female student

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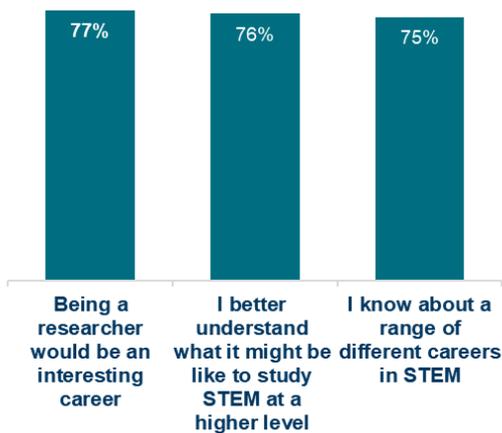
### Future career and study interests:

The project helped students to explore new areas of science and opened their eyes to possible future careers.

Students, after participating in the Future Flight project, feel knowledgeable, confident, and empowered to contribute in STEM research.



Students were also more interested in research careers, improved their understanding of STEM study pathways, and diverse STEM career options.



## Evaluation Summary

**“Future flight has made me want to study aerospace engineering at university compared to a physics course. It has also heightened my interest in sustainable aviation and allows me to understand the impact it has on global warming.”**

Year 12, female student

**“It has sparked a new interest for me in hydrogen as a fuel. It inspired my EPQ title, and I now want to pursue renewable engineering as a career.”**

Year 12, female student

**“I am inspired to work in the aviation industry.”**

Year 12, female student

**“It has directed me towards an interest in a physics-related undergraduate in STEM. Moreover, it has also convinced me to read around this topic and research more about the use of hydrogen and its possible dangers in my own time alongside continuing to design possible hydrogen tanks on an aircraft.”**

Year 10, female student

**“I’m more confident in choosing engineering and that I will enjoy a course in this.”**

Year 12, male student

**95% of students would recommend an IRIS project to another student.**

### Impact on teachers

Teachers said that the project helped them get back in touch with research and increased their enjoyment of teaching. It also helped them to highlight STEM jobs and careers and make links to current research in their teaching.

#### Teachers reflected that the project:

- Encouraged engagement and motivation in STEM subjects
- Gave students a deeper understanding of the real-world problems in STEM
- Stretched and challenged students
- Stimulated students' interest in science beyond the curriculum

#### Teachers found that running the project helped them:

87%	Communicate the excitement of STEM subjects to my students
81%	Enriched their relationships with their students
88%	Encourage students to explore beyond the curriculum
80%	Make curriculum links to current research

**“I think one of the main things is, they've worked collaboratively and that's been really, really lovely to see. They're doing real science that is clearly as real as you can properly make it, you know, it's not repeating a very simple experiment... I think it's the first time they got to see what it might be like to be a scientist.”**

Teacher

**“A great way to work beyond curriculum and with students who aren't studying my A-level subject.”**

Teacher

**“I am a science technician and I really enjoy how the students see what others have done, which makes it more interesting and hopefully they will do more research into what they can become.”**

Science Technician

