

DNA Origami

Evaluation summary

DNA ORIGAMI

Project partners



The Institute for
Research in Schools

theBRAGGcentre
FOR MATERIALS RESEARCH

HENRY
ROYCE
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About the project

DNA Origami is a collaboration between IRIS and the Bragg Centre for Materials Science at the University of Leeds and was funded by The Henry Royce Institute. The project allows young scientists to explore the exciting new world of DNA nanotechnology. The project is based on the concept of the Japanese art of origami, whereby students learn how to fold DNA to create new and unusual shapes using computer software. They work alongside researchers to investigate the potential applications for this self-building, designer material.

DNA Origami provides a fun introduction into materials science, a place where biology, chemistry, engineering, maths and physics converge. It allows budding scientists to uncover, first-hand, how this field of science has the potential to revolutionise our lives and provide potential solutions to global challenges.

Student registrations

	22-23	23-24	24-25
Number	117	105	187
Post-16	64%	53%	93%
Female	50%	59%	63%

Aims

- Provide an insight into materials science for secondary school students
- Present students with an opportunity to take part in some high-level scientific activities, broaden their science curriculum and develop their skills

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	49 students	129 students
IRIS post-participation survey	38 students 12 teachers	50 students 20 teachers

Impact on students

Students were enthusiastic about their involvement in the project. They appreciated the opportunity to work differently and gain insight into how science operates outside the classroom.

The experience taught them that science is dynamic, collaborative, and creative. Though overcoming challenges required perseverance, students felt the journey was worthwhile due to the valuable skills they developed and the satisfaction of completing the project.

Working at the forefront of materials science and DNA nanotechnology was particularly exciting, as it revealed the vast potential of new technologies to advance scientific understanding. Students recognised that research in these fields has significant practical applications, giving them firsthand experience and reinforcing that science offers many career opportunities. It also inspired confidence that they could make meaningful contributions to future progress in science.

“It helped me broaden my horizons and this is the role of science. It is very broad and applicable, it breaks down boundaries, different sciences helping each other.”

Year 12, male student

“It gave us an opportunity to engage in research which may even have major impacts in real life fields.”

Year 12, female student

“It is very satisfying and rewarding to be able to explore ideas that are new and link science with it. It was extremely interesting.”

Year 12, female student

“The tasks and project not only expands your understanding but answers your curiosity about the world around you.”

Year 9, female student

86% of students rated the project as good or very good.

Impact on students' skills development

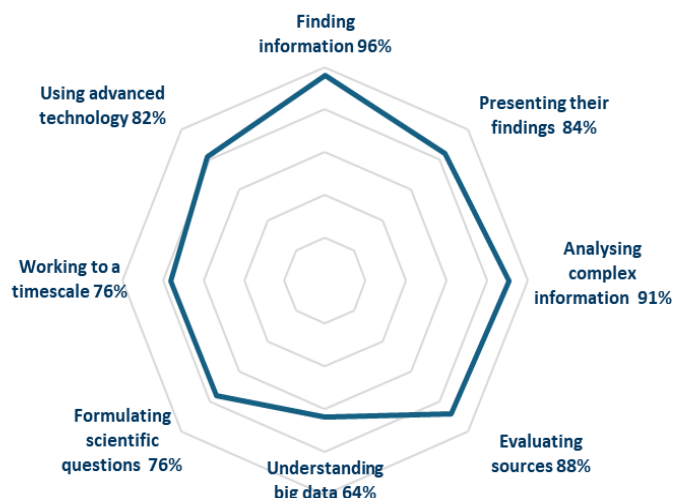
Students consistently reported that the project strengthened their ability to conduct research and provided a strong platform for developing transferable skills.

They learned how to analyse and evaluate information critically, which deepened their understanding of scientific processes. Students also emphasised improvements in teamwork, collaboration and communication.

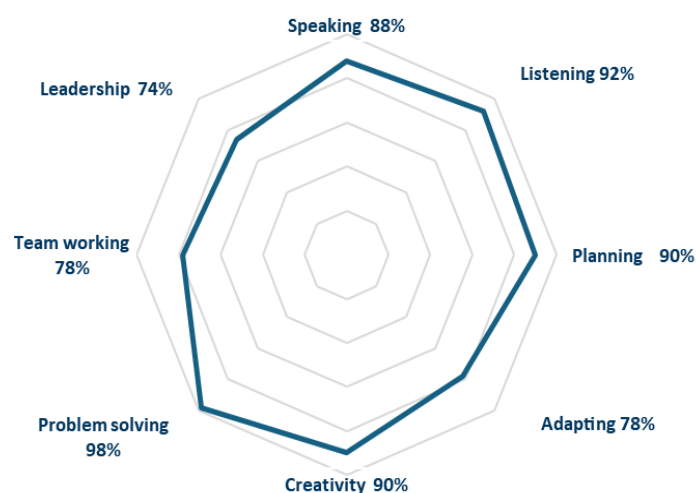
94% of students agreed that they developed important skills that will help them in the future.

Evaluation Summary

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



...and their transferable skills



“It's a really amazing opportunity and you get to study something fascinating. It gives you the opportunity to learn more skills.”

Year 12, female student

“You can enhance your presentation skills and communication skills amongst a wide variety of people which could help them with their future career.”

Year 12, female student

DNA Origami

“It was great at developing research skills that are applicable at higher level study.”

Year 12, female student

“This is a team effort. You will be part of a community, and you have people you can fall on.”

Year 12, female student

Impact on understanding of STEM and research

A significant outcome of the project was the opportunity for students to learn far beyond the boundaries of their school curriculum. Many participants described how the experience allowed them to explore topics not covered in their lessons and to engage with real-world scientific practices.

The project helps students to feel more positive about research and STEM. Students...

90% ...feel they can make a valuable contribution to research

88% ...understand research can be hard work but is rewarding

“It has helped me delve into the world of science.”

Year 12, male student

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

87% ...know how STEM can make a difference in the real world

87% ...know about STEM beyond the school curriculum

“It’s very important to open your mind and broaden understanding in your preferred field of science.”

Year 12, male student

Evaluation Summary

“It gives you an open mind to different ideas and how to look at topics from different perspectives.”

Year 12, female student

Future career impact

The project helped students to broaden their perspective on STEM careers and helped them build networks and gain insights into pathways for future study and employment.

After taking part in a DNA Origami project, students...

94% ...have a better understanding what it might be like to study STEM at a higher level

77% ...think being a researcher would be an interesting career

“It helps build your understanding of the world of STEM and it is extremely rewarding and beneficial.”

Year 9, female student

“It is a great experience... It gives good opportunities and possible contacts as well as learning how conferences work giving insight into how qualified researchers do their job.”

Year 12, female student

“It will build your confidence and knowledge in science sector.”

Year 12, female student

Impact on teachers

Teachers were impressed by how well the students worked together on the project. In addition, teachers enjoyed the challenge of learning about advances in materials science and DNA nanotechnology. It put them back in touch with science research and reminded them of the camaraderie of working together on a project, helping them to develop a different relationship with students as they all worked together to learn something new.

“I’ve never seen students work so effectively together in a group, to be honest, it was phenomenal.”

Teacher

Teachers found that running the project helped...

90% ...them to communicate the excitement of STEM

95% ...make them more aware of the range of careers in STEM

95% ...enrich their working relationship with their students

“I love being a part of this! This gave me motivation as I love seeing the pupils blossom!”

Teacher

“It continues to be a worthwhile project that really helps support our high achieving students and those with STEM aspirations. It is exceptionally useful for student’s CVs as they move forward.”

Teacher

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