

# A Cross-curricular 3D Photography Project with Science and ICT

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Case study: **#24**

The school wanted to put together a presentation in the school library of 3D photographs, to be viewed using coloured goggles. Students have created these images by taking stereo pinhole camera photographs of their own compositions, which they then manipulated using digital imaging software to create three-dimensional tinted pictures. Throughout, students have used their knowledge of science to explain what processes are occurring and to define the next steps in the procedure.

## What was the school trying to achieve?

The science department was hosting a voluntary 'Learning Hub'; twilight meetings were introduced at our school as a means of promoting a professional community of practice and development for all staff as well as tackling issues of within-school variation. The head of science was enthusiastic about the new curriculum for science and wanted to explore cross-curricular work with other departments.

The learning outcomes we wanted to achieve for the students were:

- Understanding how a pinhole camera works, linking to other phenomena involving light.
- Understanding of colour, including filters.
- Understanding how the brain interprets images from each eye to create a three-dimensional image.
- Understanding composition for an effective 3D photograph.
- Understanding the use of a digital imaging ICT package.

Students also completed 'Learning Passports' which were designed to identify and measure their own learning habits. We wanted to discover how students' 'learning muscles' might change before and after the project and if there was a notable change in how they perceived their learning in science.

## How was learning organised?

Participants in the project belonged to two main groups; one made up from art and design, ICT and science teachers, the other a high ability year 8 science group.

The project began by brainstorming and identifying possible areas for collaboration in a larger group. A smaller party of interested teachers volunteered to move the project forward and we decided to explore the properties of light and the function of the eye and with this common theme help students see the links between different subjects and to develop their transferable skills. We felt the most effective way of teaching this project was during normal timetabled science lessons over a three-week period in the second half of the summer term following the examination period. Due to the loss of all the examination students the art and design and ICT teachers had lighter timetables and it was not difficult to negotiate the necessary lesson time for them to teach their part of the project.

By writing a shared scheme of work we identified what students would do in the art and design, ICT and science lessons during the three-week period. This clearly identified the time, resources and learning objectives needed for each aspect of the project.

## How successful was the project?

We discovered that quality in cross-curricular learning requires time for careful planning. In this case all the teachers worked closely together to brainstorm initial ideas and write a shared scheme of work. In doing so our community of practice of teachers has been enhanced with shared skills and understanding from our individual specialist and expert areas.

Our completed proposal was entered into a science competition run by Rolls Royce and won a special merit prize of £1000 for enhancing an aspect of science teaching in school. Funding has made it possible to plan an exhibition of the 3D photographs in the college library this September for students, teachers, parents and governors of the school. The added publicity has also heightened awareness of the New Secondary Curriculum opportunities within school and many new exciting and innovative propositions for curriculum initiatives are being put forward. Student enthusiasm and absorption has been very high which was particularly impressive at the end of the summer term.

We strongly believe that working in an interdisciplinary way has shown great benefits for students' learning, as the project involved resolving and combining both artistic and scientific skills resulting in deeper learning. Completing a learning passport has helped students recognise the similarities of the learning habits they have used across the different subject areas and in turn promoted their understanding of transferable skills.

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