

Inspiring both students and teachers

Field Studies Council

The Challenge

- Give students training in and experience of using GIS to meet the requirements of GCSE and A level curricula

The Benefits

- An enhanced learning experience for students
- A platform for continued learning at home and at school
- A demonstration of good practice for teachers
- Real-world skills that students can apply in the future

Each year over 150,000 secondary school students and their teachers visit centres run by the Field Studies Council (FSC) to learn about the environment, undertake fieldwork and explore new scientific techniques. Since 2014 FSC has been embedding Esri's ArcGIS platform as a core technology to help students acquire real-world skills, as well as supporting teachers in delivering engaging geography lessons with integrated GIS skills.

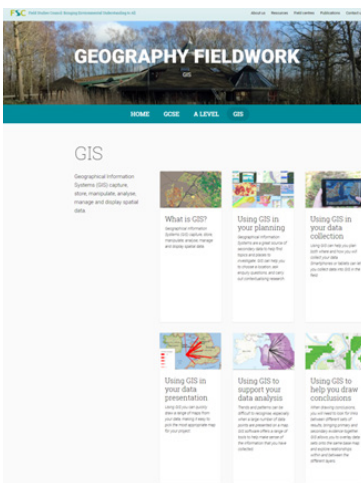
The Challenge

Geographic information system (GIS) technology now features prominently in both the GCSE and A level geography specifications, and students studying at both levels need to understand how GIS could be used to collect, visualise, analyse and interpret data. However, the use of GIS in schools is often impeded by teachers' lack of experience and confidence in using the technology, along with challenges of access to hardware in school.

As an environmental education charity that runs thousands of residential and day courses for geography, geology and biology students and professionals every year, the Field Studies Council (FSC) wanted to take a leadership role in the use of GIS in teaching. Rather than rely on simplistic solutions like Google Earth, it wanted to showcase the use of market leading GIS technology and equip both students and teachers with the skills to succeed.

The Solution

There were two primary reasons why FSC selected Esri's ArcGIS platform. Firstly, the organisation found the software very intuitive to use and felt it would be an easy system for young people and non-technical, teaching staff to become proficient in. Secondly, FSC felt well supported by Esri UK's team of education specialists, who were on hand to help FSC employees build their capabilities with the solution and develop teaching resources.



FSC's Geography Fieldwork website includes support materials for students and teachers

FSC now uses a suite of ArcGIS solutions across all nineteen of its centres in England, Wales, Scotland and Northern Ireland. Students start by performing research using data from Esri's Living Atlas and ArcGIS Online to explore environmental or geographic issues and develop their knowledge of the study area, helping them to plan their investigations. They then use Esri's Collector for ArcGIS and Survey123 for ArcGIS in the field to collect data via mobile devices and undertake studies on anything from glaciated landscapes and the impacts of flooding to human 'moods' in urban areas.

All of the data collected in the field using Collector and Survey123 is instantly uploaded to ArcGIS Online on their return to the classroom, so groups do not waste time processing and copying data. They can then view their data alongside that collected by their peers on interactive maps in ArcGIS Online to identify trends and analyse data. The cloud-based nature of ArcGIS Online means that students and teachers can access their project data from home or school after their residential trip.

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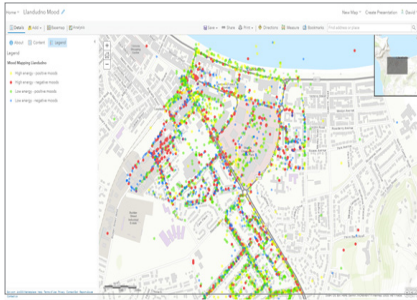
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David Morgan, Education Technology Officer, Field Studies Council



Combining student data spanning 12 months reveals interesting patterns in how place impacts on mood in Llandudno, North Wales

The Benefits

An enhanced learning experience

Students that attend FSC courses have an enhanced learning experience, because they can analyse the data they have collected in the field as soon as they get back to the centre and combine their own findings with relevant contextual data, on interactive maps, at the push of a button. “Using ArcGIS, students spend more time thinking about what their data means and less time manually creating maps and handling data,” says David Morgan, FSC Education Technology Officer. “That means learners can spend more time tackling higher level questions and ensure they get the most value from their studies.”

A platform for continued learning

As FSC allows students and teachers to continue to access their own data via ArcGIS Online long after the end of residential courses, students are able to build on what they learned. “For lots of our students, the work that they do on a fieldtrip provides the basis of coursework for their A levels” Morgan says. “With ArcGIS, the data they need for their projects is exactly where they left it, and, most importantly, they know how to analyse it with ArcGIS.”

A demonstration of good practice for teachers

During school visits, teachers are themselves often inspired by FSC’s use of ArcGIS. GIS with the FSC is integrated, student led, differentiated for each student’s ability and broad enough to allow students to self-direct in ways which will support their understanding around a topic. Many teachers return to attend professional courses, run by the FSC, aimed specifically at helping teachers to use ArcGIS to support teaching of GCSEs and A levels, as well as Highers and Advanced Highers in Scotland. “When teachers see ArcGIS being used well, they say how can I do that?” Morgan says.

Real-world skills for the future

With access to the latest ArcGIS solutions, students at FSC centres gain experience of using the kinds of GIS tools that professional geographers and ecologists use in their jobs. “ArcGIS connects students to the real world,” observes Morgan. “It shows them that they are developing skills that have an application in a wide range of careers, beyond school and education.”

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