

GEOSCIENCE FOR LEAVING CERTIFICATE GEOGRAPHY

Continuing Professional Development Course 2021



GLENDALOUGH FIELD COURSE FIELD INVESTIGATION

Susan Breen (Presentation College
Carlow), Dr Danny Hnatyshin (UCD,
iCRAG) and Dr Siobhán Power (Geological
Survey Ireland)



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About the programme

The aim of this resource is to encourage the teaching and inclusion of geology in Leaving Certificate Geography classrooms. To achieve this, iCrag and Geological Survey Ireland developed this CPD course which partnered up 6 Leaving Certificate teachers with 12 geoscience practitioners across Ireland. The course involved a series of talks by the geoscience practitioners which informed the teachers of current and ongoing geoscience research happening in Ireland. They then worked together to create either a classroom-based or field-based lesson or module plan for a particular subject area, complete with presentation and teacher and student notes. The teachers brought in their expertise and experience with teaching Leaving Certificate Geography and how the various aspects of geoscience can be linked to the curriculum, and the geoscience practitioners contributed their knowledge and relevant applications of geoscience at a classroom level.

The subjects covered by these 6 resources include a Glendalough field study, geothermal energy, an introduction to geology, Irish geohazards, seismic activity, and volcanoes.

The CPD course was led by Elspeth Sinclair and Fergus McAuliffe, from iCrag, and Siobhán Power and Amrine Dubois Gafar, from Geological Survey Ireland. We would like to thank Peter Lydon for his help in recruiting our wonderful teachers.



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About us

Geological Survey Ireland, a division of the Department of Environment, Climate and Communications, has been mapping Ireland since 1845. They continue to map the Irish land and marine territories, as well as mineral and groundwater resources. They have responsibility for actions in the current Climate Action Plan including monitoring coastal change, the Just Transition in the midland counties, and providing data for de-risking offshore renewable energy. Irish geoscience research, particularly as it contributes to the development of government policy, is an important part of their work and they fund and co-fund many research projects, including some of the iCrag research work. Their data and maps are freely available to all at www.gsi.ie.

iCrag, the Science Foundation Ireland (SFI) Research Centre in Applied Geosciences, are a team of researchers creating solutions for a sustainable society. They develop innovative science and technologies to better understand Earth's past, present, and future and how people are connected to it. iCrag drives research into areas that are critical to society, including:

- The minerals and metals we need for decarbonisation and sustainable energy.
- Securing and protecting groundwater and marine resources.
- Protecting society from Earth's hazards, such as floods and landslides.

Further information is available at: www.icrag-centre.org

About this resource

Glendalough Field Study

This resource has been developed by Susan Breen, a geography teacher at Presentation College Carlow, alongside geoscience professionals Dr Danny Hnatyshin from iCRAAG at UCD and Dr Siobhán Power from Geological Survey Ireland. This resource is a field guide and accompanying teacher guide for a field investigation of Glendalough, Wicklow. The field investigation covers the geology of the area, alongside considering the historical and human importance of the site. It has been designed for Leaving Certificate students but may be suitable for younger students with some additional preparation.

Disclaimer

Every effort has been made to ensure that the information in this book is accurate. Data, links, and maps are accurate as of January 2022. The publishers cannot accept responsibility for any consequences arising from the use of this book. The publishers are in no way liable or responsible for any injury or loss to any person using this book.



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Glendalough Field Investigation: Module plan

Links to curriculum

- Carrying out a Geographical Investigation is an integral part of Leaving Certificate Geography. Teachers are provided with a prescribed list of investigation topics each year which are common to Higher and Ordinary Level. Some topics that have appeared over the years include, a river study, urban study, changing land use, a local environmental issue, study of geology to name but a few. Students are required to complete a written element, along with graphs, sketch-maps and diagrams based on one Geographical Investigation chosen by the teacher.
- This field study to be carried out in Glendalough covers a range of elements for students to explore to carry out a geographical Investigation/field study based on Glendalough's landscape, geology, and its human aspect. This field study gives students the opportunity to prepare for their Leaving Certificate Geographical Investigation worth 20% of their overall Geography grade.

Learning Outcomes

- To explore and appreciate the landscape, geology, and human interaction in Glendalough.
- To support the Geography curriculum by promoting geographical knowledge and understanding
- To provide a real-world opportunity for students to develop and extend their geographical thinking
- To reinforce student's understanding of geographical terminology and processes
- To develop a variety of geographical skills which can be applied to the world of work
- To determine different rock types and their characteristics
- To observe and identify river features in the Glendalough area
- To draw a detailed field sketch
- To engage in teamwork and discussions

Learning activities

Students will have the opportunity to develop a wide range of different skills and learning activities, such as,

- Information gathering skills
- Enquiry skills (observational skills, data collection, data analysis, map work)
- Investigative skills – carry out a Geographical Investigation/Field Study
- Social skills – working effectively alone or in groups
- Engage in talks and discussions on the landscape in Glendalough, the geology and human interaction
- Evaluate their work using a booklet provided
- Present work/findings to the class, individually, in pairs or in groups.
- Engage in discussions throughout the day and upon returning to the classroom.

Detailed instructions

- Before undertaking this field study in Glendalough, teachers will revise the necessary chapters from the Geography curriculum linked to the field study in question. Chapters include, Rocks, Rivers, Glaciation, Tourism, Human Interaction with the landscape and the skills and materials required to carry out a field-sketch. Teachers can opt to do PowerPoint presentations, videos, bookwork etc to revise chapters mentioned.
- Familiarise students with Geological Survey's Ireland Map viewer and Geological Survey Ireland website to allow students to explore the area and gain knowledge before the fieldtrip. These websites offer a wide range of information for students to access before visiting the field study site in question, Glendalough.
- Students must be made aware of materials required and safety information as outlined at the start of their booklet before departure day
- Day of departure. Students must arrive on time, wearing their full school/PE uniform with all the necessary materials and a packed lunch. Students will be provided with the booklet on the bus. It is very important to advise students to complete each section carefully and in detail. The more information recorded, the better.
- Upon arriving in Glendalough, students will be divided into three groups. Each group will be accompanied by a teacher.
- This field study is divided up into three parts, (a) Geology (b) Field-Sketch and (c) Discussions. Allow 90 minutes to complete each section. This gives students enough time to complete the questions in the booklet, ask questions, engage in discussion, and admire and appreciate the landscape around them.
- Each group will work on a different section of the booklet at any one time. This allows for smaller groups, more interaction and social distancing.
- Once students have completed two sections of the booklet, allow for lunch in the Upper Lake. Students can have some free time, avail of facilities (toilets, stalls) and admire the landscape around them. Depending on travel time, teachers can suggest the maximum time provided for lunch
- After lunch, students will return to their groups with their accompanying teacher and complete the final section of their booklet
- Once each group has completed the three sections, students will meet at a designated point to return to the bus for departure
- Depending on travel time, teachers can opt to visit the Visitor Centre in Glendalough. This centre has a wonderful exhibition and audio-visual shows. There is also an option for a guided tour.
- As outlined under learning activities, students will have the opportunity to develop a wide range of different skills and learning activities throughout the day. Most of the knowledge and information gained will be recorded in their booklet. Regarding presenting their work to the class, students can work individually, in pairs or in small groups and give a five-minute presentation to the class (PowerPoint or oral) on their results, analysis and findings from the day spent at Glendalough. Students will have one week to prepare for this presentation
- Finally, students will engage in discussions after each group has presented their presentation. Questions to discuss include, what did I enjoy most about completing

this field study, what worked well, what were the main challenges I faced, how could I overcome these challenges in the future, what new geographical skills did I develop while completing this field study

Resources provided

- Glendalough field guide workbook



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Glendalough Field Investigation: Teacher Notes

Introduction to teacher notes

- Preparation and revision are vital before carrying out this field trip
- Use the necessary websites mentioned above to aid student's understanding
- Go through the field study booklet in detail to ensure students are aware of what is expected.
- Explain to students that they will give a PowerPoint or oral presentation to the class based on their analysis of the day. Students can work individually, in pairs or in small groups (max 4 people).

Methodologies

- PowerPoints to aid revision prior to field study
- Talks and discussions
- Collaborative Learning
- Active Learning
- Investigative Approach

Assessment

- Self-assessment using field study booklet
- Teacher observation throughout the day
- Questioning at different points of the day
- Individual, pair or group presentations back in the classroom
- Talks and discussions

Linkage and Integration

Linkage

- History – through its archaeologically and architecturally rich landscape.

Differentiation

- Support/Guidance
- Booklet with higher and lower order questions
- Teacher questioning - Talks and discussions



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