wst
next generation TRAVEL GROUP

EDUCATING • EXPLORING • EXCELLING

ICELAND

A TEACHER'S GUIDE

Introduction

WST a four-time winner of Best School Tour Operator is building on its commitment and that of its parent company Next Generation Travel to provide its clients with the highest level of service and support and is delighted to announce it has extended its provision to include a series of educational materials that engage and support its' 4 and 5-day Iceland tours.

We recognised through our ongoing dialogue with teachers that education professionals are seeking authentic contextualised resources and assets to extend the educational value of their tour and complement their 'experiential' learning.
As a result, we have partnered with practising Geography teachers who have experienced the Iceland Tour first hand to create and strengthen our offer.

Iceland has been chosen for this pilot project for its relevance to young people, the environment, and the growing conversation around climate.
There has never been a better time to engage and excite young minds, to build knowledge and understanding and a passion for learning.

Our education focus

This resource has been carefully planned to support pre and post tour activity highlighting clear teaching and learning objectives for students aged 14/16, complementing the specification for GCSE Geography – and a number of awarding bodies – detailed below.

We would also suggest elements of the resource could be used to transition students to A level or equivalent.

In addition, we have referenced links with the UNSDG's which we felt would be helpful and enable further discussion. This resource also have several cross-curricular links, most notably with GCSE Science. This provides an opportunity to develop students' cultural capital, engaging pupils with a variety of interests, whilst applying what they learn in the classroom to the world around them.

The resource has been designed to support whole class and structured groups, guided learning and individual activity and recognises the diverse needs of students. It is question rich and aims to engage students in discussion and energetic debate.

We would like to take this opportunity to acknowledge and thank Adam Jackson from Upper Wharfedale School and Ryan Nock from Carr Manor Community School for agreeing to work with us to develop the education content.

This resource covers

The Golden Circle Day

SÓLHEIMAJÖKULL

THE GEYSIR GEOTHERMAL PARK (Including Strokkur Geysir)

GULLFOSS (Golden Falls Waterfall)

THINGVELLIR NATIONAL PARK

KERID VOLCANIC CRATER

HELLISHEIDI POWER PLANT

Components consist of:

TEACHER SUPPORT NOTES

CASE STUDIES RELEVANT TO EACH SITE

ONLINE ASSET HUB – OPEN ACCESS

IDEAS FOR EXTENSION ACTIVITIES

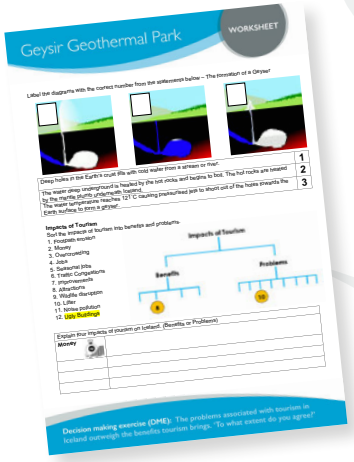
ASSESSMENT PLENARY SUPPORT

TEACHER, STUDENT PARENT SURVEY

Support Material Synopsises Only

The case study information and worksheets can be used pre and post Iceland visit. The case studies have been created for teachers and students.

The case study focuses on knowledge about each unique site on THE GOLDEN CIRCLE DAY and links to geographical content of the human and physical processes.



Each case study is accompanied by a worksheet for students to complete to check their knowledge and understanding of the unique sites the Golden Circle Day as to offer.

Extension Activities Classroom Ideas – Synpopsis Only

The extension activities and classroom ideas can be used pre and post Iceland visit. A set of 5 unique challenges have been created to get students engaged with Iceland's human and physical landscape. Each activity could be completed as a paired, grouped or individual task. These activities include;

1. **Fact File** The is an opportunity for student to get to know Iceland, by researching some of its key human and physical characteristics, from development measures to tectonic processes.
2. **Eyjafjallajökull** As one of the most well used case study students used in GCSE and A level, this task gives students a chance to research the key causes, impacts and management of this huge volcanic eruption.
3. **Decision making exercise** The DME process is a vital part of the GCSE experience. A selection of statements and questions have been given for students to discuss and make judgements on. These are open ended and allow great classroom discussions.
4. **River Study** Fieldwork can be completed whilst on the tour or discussed throughout. This activity gives you a list of questions that could be considered throughout the field visit and discussed back in the classroom.
5. **Renewable energy** Sustainability and resource consumption is a vital part of any school's curriculum. This activity gives you a list a key questions that could be researched and discussed on the tour and back in the classroom.
6. **Glaciation** An opportunity to develop an understanding of core content on glaciation for the GCSE specifications. This activity gives students a selection of questions for them to research pre or post Iceland tour.
7. **Coastal study** A range of tasks for students to complete before, during or post Iceland. This gives student a chance to investigate the changing coastal landscape that Iceland offers.

Assessment – Plenary Support

There are several assessment styles/maps available, those contained in this resource have been designed specifically to support the GOLDEN CIRCLE DAY and the sites that sit within it. They complement topics such as the challenges of natural hazards, glacial and fluvial landscapes and natural resources.

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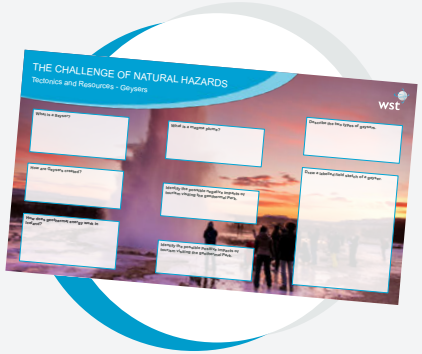
The assessment questions are designed to assess students knowledge and understanding post visit. Taking into consideration available time and student fatigue this is an activity that can be completed during the evenings or once returned to school. As a classroom activity this could last 20-30 minutes.



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Guided answers are provided to support both teachers and students. These could also be used for peer and self-assessment in the classroom.

Further Reading or Useful Sites

The extension activities and classroom ideas can be used pre and post Iceland visit. A set of 5 unique challenges have been created to get students engaged with Iceland's human and physical landscape. Each activity could be completed as a paired, grouped or individual task. These activities include;

Internet geography
Cool Geography
Global Smithsonian Institution Eyafjallajokull
ON Energy Hellisheidi Power Plant
United Nations Development Reports Iceland Development Measures
Iceland Tourist Board

Expected learning outcomes for students

Understand more about the world, (specifically Iceland) the challenges it faces and their place within it – become more globally informed and thoughtful.

Deepen understanding of the geographical processes.

Recognition of the dynamic links and inter-relationships between places and environment and develop student competence in using wide range of investigative skills.

Develop and extend their knowledge of location, places and environment.

Develop and extend their competence in fieldwork, researching digital sources and researching secondary evidence.

Expected social and emotional outcomes for students

1. SELF CONFIDENCE
2. EFFECTIVE TEAMWORK PROBLEM SOLVING
3. RESPECT
4. EMPATHY
5. STRESS MANAGEMENT
6. SPEAKING INFORMALLY
7. ACTIVE LISTENING
8. STAYING POSITIVE
9. PERSEVERANCE

The Golden Circle Day

GEYSIR GEOTHERMAL PARK (Including Strokkur Geysir)

General information

The geysers in Haukadalur are in an active geothermal area. Underground water meets hot bedrock and heats up, which builds up pressure to peak temperature. The water then shoots out from the geyser. Geysir Geothermal park includes several spectacular Geysers including the most famous **'Strokkur' Geysir**, which shoots a column of water up to 30 metres into the air every 4-8 minutes! After witnessing the Geysers, groups can visit this modern multimedia museum displaying the inexplicable natural wonders of Iceland, and even feel it with the earthquake simulator.

Links to KS3 National Curriculum

- Plate tectonics
- Geological timescales
- Natural resources
- Sustainable energy

Links to KS4 National Curriculum

- AQA GCSE
- 3.1.1.2 Tectonic hazards
- 3.1.1.4 Climate change
- 2.3.1 Resource management
- 3.2.3.4 Energy

- Edexcel A GCSE
- 6A: Energy resource management

- Edexcel B GCSE
- 1: Hazardous Earth
- 9: Consuming energy resources

Links to KS5 National Curriculum

- AQA A level
- 3.1.1.3 The carbon cycle
- 3.1.5.1 The concept of hazard in a geographical context
- 3.1.5.2 Plate tectonics
- 3.1.5.3 Volcanic hazards

- Edexcel A Level
- 1: Tectonic Processes and Hazards
- 6: The Carbon Cycle and Energy Security

Links to GCSE Science Curriculum

- AQA GCSE
- 5.2.2 States of Matter5.10.1 Renewable Resources
- 6.1.3 Geothermal Power
- 6.3 Particle Model

- Edexcel GCSE
- Chemistry Unit 2 (States of Matter) and unit 8.15 (Renewable Resources)
- Physics Unit 3.13 (Renewable resources) and Unit 14 Particle Model

The Golden Circle Day

GULLFOSS (Golden Falls) waterfall

General information

Gullfoss (Golden Falls) waterfall, created where the river Hvítá tumbles and plunges into a crevice some 32 m deep. The river Hvítá travels from the glacier Langjökull, before dropping 32 meters (105 feet) down Gullfoss' in two stages.

Links to KS3 National Curriculum

- Hydrology
- River processes including formation of waterfalls.
- Climate change
- Geological timescales
- Weather and climate

Links to KS4 National Curriculum

- AQA GCSE
- 3.1.3.3 River landscapes
- 3.1.3.4 Glacial landscapes

- Edexcel A GCSE
- 1B: River landscapes and processes

- Edexcel B GCSE
- 4: Evolving physical landscape
- 4: River processes and pressures
- 6: Investigating river processes and pressures

Links to KS5 National Curriculum

- AQA A Level
- 3.1.1.1 Water and carbon cycles as natural systems
- 3.1.1.2 The water cycle
- 3.1.1.4 Water, carbon, climate and life on Earth
- 3.2.5.3 Water security

- Edexcel A Level
- 2: Landscape Systems, Processes and Change
- 5: The Water Cycle and Water Insecurity

Links to GCSE Science Curriculum

- AQA GCSE
- 4.7.2.2 How materials are cycled
- 4.7.3.5 Global Warming
- 5.9 Chemistry of the atmosphere

- Edexcel GCSE
- Biology Unit 9.14 (Water Cycle)
- Chemistry Unit Unit 8 (Earth and Atmospheric Science)

The Golden Circle Day

ÞINGVELLIR NATIONAL PARK

General information

Þingvellir National Park where you can make a unique walk between the American and Eurasian tectonic plates which are pulling apart at a rate of a few centimetres per year. Þingvellir (Thingvellir) is a historic site and national park in Iceland, located east of Reykjavík. Home to the oldest ongoing parliament in the world parliament from the 10th to 18th centuries.

Links to KS3 National Curriculum

- Plate tectonics
- Geological timescales
- Natural hazards
- Tourism

Links to KS4 National Curriculum

- AQA GCSE
- 3.1.1.2 Tectonic hazards

- Edexcel A GCSE
- 1.1b The role of geology and past tectonic processes in the development of upland (igneous and metamorphic rocks) and lowland (sedimentary rocks) landscapes.

- Edexcel B GCSE
- 1: Hazardous Earth

Links to KS5 National Curriculum

- AQA A level
- 3.1.1.3 The carbon cycle
- 3.1.5.1 The concept of hazard in a geographical context
- 3.1.5.2 Plate tectonics
- 3.1.5.3 Volcanic hazards
- 3.2.2.1 The nature and importance of places
- 3.2.2.2 Changing places – relationships, connections, meaning and representation

- Edexcel A Level
- 1: Tectonic Processes and Hazards
- 6: The Carbon Cycle and Energy Security

Links to GCSE Science Curriculum

- AQA GCSE
- 4.7.3.6 Maintaining Biodiversity

- Edexcel GCSE
- Biology Unit 9.10 Conservation of Biodiversity

The Golden Circle Day

KERID VOLCANIC CRATER

General information

Kerid Volcanic crater believed to be a cone volcano that erupted and emptied its magma reserve. Kerid crater lake is a 3,000 year old volcanic crater lake in South Iceland. The lake has a depth of 7 and 14 metres depending on rainfall.

Links to KS3 National Curriculum

- Plate tectonics
- Geological timescales
- Natural hazards
- Weathering and erosion
- Tourism

Links to KS4 National Curriculum

- AQA GCSE
- 3.1.1.2 Tectonic hazards

- Edexcel A GCSE
- 1.1b The role of geology and past tectonic processes in the development of upland (igneous and metamorphic rocks) and lowland (sedimentary rocks) landscapes.
- Edexcel B GCSE
- 1: Hazardous Earth
- 4: Evolving physical landscape

Links to KS5 National Curriculum

- AQA A level
- 3.1.1.3 The carbon cycle
- 3.1.5.1 The concept of hazard in a geographical context
- 3.1.5.2 Plate tectonics
- 3.1.5.3 Volcanic hazards

- Edexcel A Level
- 1: Tectonic Processes and Hazards
- 6: The Carbon Cycle and Energy Security

Links to GCSE Science Curriculum

- AQA GCSE
- 5.9.1.2 The Earth's early atmosphere

- Edexcel GCSE
- Chemistry Unit 8 (Earth and Atmospheric Science)

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HELLISHEIDI POWER PLANT

General information

The largest geothermal plant in the world, with the purpose of meeting increasing demand for electricity and hot water for space heating in the industrial and domestic sectors. Groups can take a tour and visit the Energy exhibition with its multimedia displays.

Links to KS3 National Curriculum

- Weather and climate
- Climate change
- Economic activity
- Natural resources

Links to KS4 National Curriculum

- AQA GCSE
- 3.1.1.2 Tectonic hazards
- 3.1.1.4 Climate change
- 3.2.3.1 Resource management
- 3.2.3.4 Energy

- Edexcel A GCSE
- 2: Weather hazards and climate change
- 6: Resource management
- 6A: Energy resource management

- Edxcel B GCSE
- 7: People and the biosphere
- 9: Consuming energy resources

Links to KS5 National Curriculum

- AQA A level
- 3.1.1.3 The carbon cycle
- 3.1.1.4 Water, carbon, climate and life on Earth
- 3.1.5.1 The concept of hazard in a geographical context
- 3.1.5.2 Plate tectonics
- 3.1.5.3 Volcanic hazards
- 3.2.3.8 Sustainable urban development
- 3.2.5.1 Resource development

- Edexcel A Level
- 1: Tectonic Processes and Hazards
- 6: The Carbon Cycle and Energy Security

Links to GCSE Science Curriculum

- AQA GCSE
- 5.10.1 Renewable Resources
- 6.1 Energy
- 6.1.3 Geothermal Power

- Edexcel GCSE
- Chemistry Unit 8.15 (Renewable Resources)

- Physics Unit 3.13 (Renewable resources)

The Golden Circle Day

SOLHEIMAJOKULL

General information

Solheimajokull, the glacial tongue of the mighty **Mýrdalsjökull** icecap. Eight kilometres long and two kilometres wide. **Solheimajokull** is one of the most easily accessible glaciers to reach from Reykjavík.

Links to KS3 National Curriculum

- Glaciation
- Climate change
- Weather and Climate
- Geological timescales
- Rocks, weathering and soils

Links to KS4 National Curriculum

- AQA GCSE
- 3.1.1.4 Climate change
- 3.1.3.4 Glacial landscapes

- Edexcel A GCSE
- 1C: Glaciated upland landscapes and processes
- 2: Weather hazards and climate change

- Edexcel B GCSE
- 4: Evolving physical landscape
- 7: People and the biosphere

Links to KS5 National Curriculum

- AQA A level
- 3.1.4 Glacial systems and landscapes
- 3.1.4.1 Glaciers as natural systems
- 3.1.4.2 The nature and distribution of cold environments
- 3.1.4.3 Systems and processes
- 3.1.4.4 Glaciated landscape development
- 3.1.4.5 Human impacts on cold environments

- Edexcel A Level
- 2: Landscape Systems, Processes and Change
- 2A: Glaciated Landscapes and Change

Links to GCSE Science Curriculum

- AQA GCSE
- 4.7.3.5 Global Warming

- Edexcel GCSE
- Chemistry Unit Unit 8 (Earth and Atmospheric Science)

United Nations Sustainable Development Goals

You may find the following additional mapping helpful.

To Support UN SDG's we have taken the opportunity to identify where our resources fit.

- Department for Education - Geography programmes of study: key stage 3 National curriculum in England &Wales
- **Council for Curriculum Examination and Assessment**
- **The Scottish Qualifications Council**
- AQA GCSE Geography Specification
- Edexcel A GCSE Geography Specification
- Edexcel B GCSE Geography Specification
- AQA A Level Specification
- Edexcel A Level Specification