Geography summer gap task

@cns_geography

KS5 Programme of study (Pearson)

	Autumn	Spring	Summer
Year 12	Globalisation. Tectonic processes and hazards. *Baseline assessment.* *Mid-semester 1 examination .*	Regenerating places. Glaciated landscapes and change. *End-of-semester 1 examination.*	The water cycle and water security. The carbon cycle and energy security. *Mid-semester 2 examination.*
Year 13	Health, human rights and intervention. NEA investigation. *End-of-semester 2 examination.*	Superpowers. *Mock examination.*	Exam preparation and revision.

CNS KS5 Geography Learning Journey

Welcome to A-level Geography at CNS

Hazards
- Plate tectonics
- Volcanoes
- Earthquakes
- Tsunami
- Natural hazards
- Earthquakes
- Hazard management

Globalisation
- Defining globalisation
- Global shift
- Development gap
- TNCs and globalisation
- Interconnections
- Global culture

Glaciation
- Periglacial landscapes
- Svalbard
- Glacial movement
- Climate change
- Rising tensions
- Glacial deposition
- Everest

Regeneration
- London's East End
- The Lake District
- Glacial erosion
- Rural regeneration
- Energy security

The carbon cycle
- Role of government in regeneration
- Urban regeneration
- Carbon sequestration
- Fossil fuels
- Residential fieldtrip - The Lake District
- Engaging with places

The water cycle
- Emerging superpowers
- Water insecurity
- The water balance and river regimes
- The global hydrological cycle
- Carbon cycle threats
- Climate change
- Extremes

Superpowers
- What is a superpower?
- Drainage basins
- Global networking

Health, human rights and interventions
- The environment
- The future?
- Human development
- Human health and life expectancy
- Human rights
- Geopolitics
- Development aid and military interventions

Skills for next steps

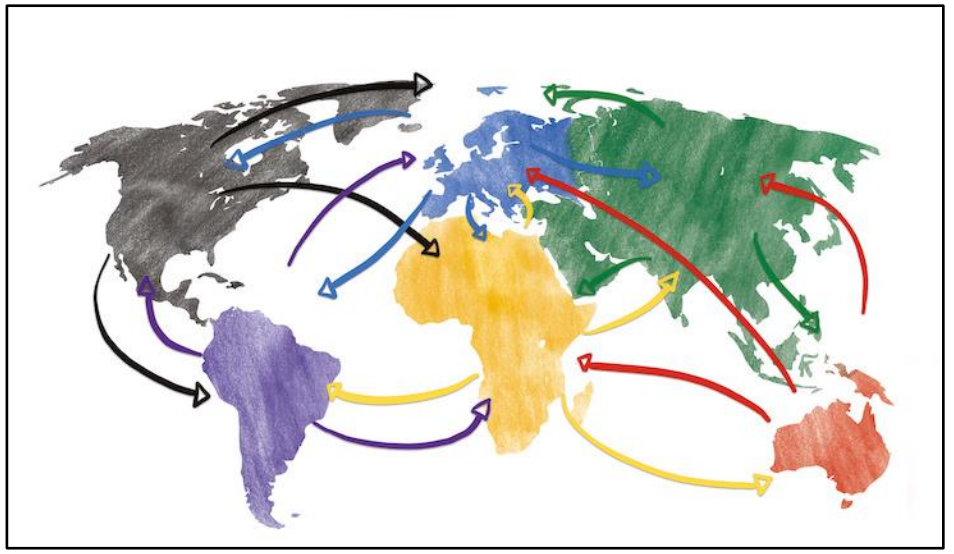
Over the next 4-slides, you will find enquiry questions for the topics studied in Year 12. We ask that you explore two of these enquiry questions (one physical and one human) and bring your findings to class in September. Whilst there is no formal submission of work, we would like you to be prepared to share evidence that supports your findings through an academic poster. This should include:

- subject specific vocabulary
- images, maps and graphs
- succinct summaries
- contemporary examples
- synoptic links
- wider reading

Tectonic processes and hazards

- Why are some locations more at risk from tectonic hazards?
- Why do some tectonic hazards develop into disasters?
- How successful is the management of tectonic hazards and disasters?

Globalisation



- What are the causes of globalisation and why has it accelerated in recent decades?
- What are the impacts of globalisation for countries, different groups of people and cultures and the physical environment?
- What are the consequences of globalisation for global development and the physical environment and how should different players respond to its challenges?

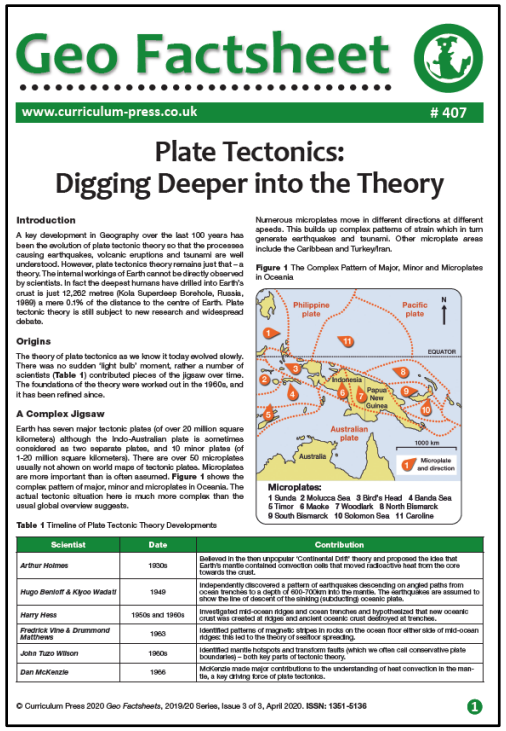
Glaciated landscapes and change

- How has climate change influenced the formation of glaciated landscapes over time?
- What processes operate within glacier systems?
- How do glacial processes contribute to the formation of glacial landforms and landscapes?
- How are glaciated landscapes used and managed today?

Regenerating places

- How and why do places very?
- Why might regeneration be needed?
- How is regeneration managed?
- How successful is regeneration (investigate a specific example)?

Additionally, we would like you to read the Geo Factsheets given to you during induction and that are also available on the school website. These are linked to the topics in year one and will also familiarise you with the type of wider reading expected at A-level.



Geo Factsheet

www.curriculum-press.co.uk # 407

Plate Tectonics: Digging Deeper into the Theory

Introduction

A key development in Geography over the last 100 years has been the evolution of plate tectonic theory so that the processes causing earthquakes, volcanic eruptions and tsunami are well understood. However, plate tectonics theory remains just that – a theory. The internal workings of Earth cannot be directly observed by scientists. In fact the deepest humans have drilled into Earth's crust is just 12,262 metres (Kola Superdeep Borehole, Russia, 1989) a mere 0.1% of the distance to the centre of Earth. Plate tectonic theory is still subject to new research and widespread debate.

Origins

The theory of plate tectonics as we know it today evolved slowly. There was no sudden 'light bulb' moment, rather a number of scientists (Table 1) contributed pieces of the jigsaw over time. The foundations of the theory were worked out in the 1960s, and it has been refined since.

A Complex Jigsaw

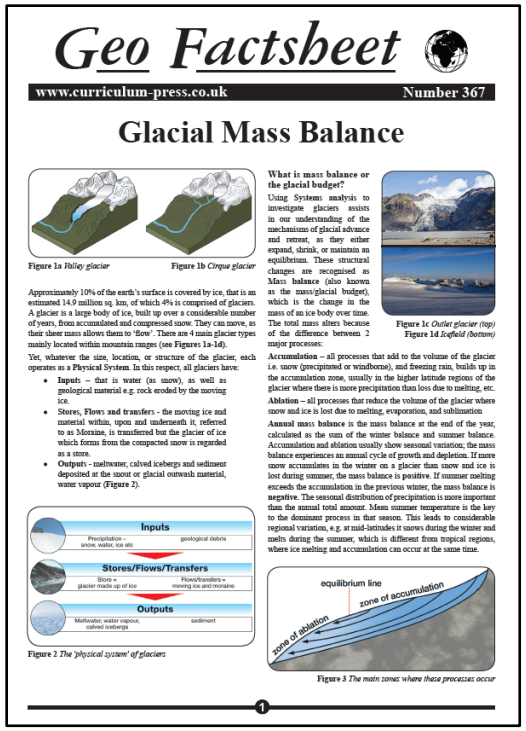
Earth has seven major tectonic plates (of over 20 million square kilometers) although the Indo-Australian plate is sometimes considered as two separate plates, and 10 minor plates (of 1-20 million square kilometers). There are over 50 microplates usually not shown on world maps of tectonic plates. Microplates are more important than is often assumed. Figure 1 shows the complex pattern of major, minor and microplates in Oceania. The actual tectonic situation here is much more complex than the usual global overview suggests.

Numerous microplates move in different directions at different speeds. This builds up complex patterns of strain which in turn generate earthquakes and tsunami. Other microplate areas include the Caribbean and Turkey/Iran.

Figure 1 The Complex Pattern of Major, Minor and Microplates in Oceania

Table 1 Timeline of Plate Tectonic Theory Developments

Scientist	Date	Contribution
Arthur Holmes	1930s	Believed in the then unpopular 'Continental Drift' theory and proposed the idea that Earth's mantle contained convection cells that moved radioactive heat from the core towards the crust.
Hugo Benioff & Kiyoo Wadati	1949	Independently discovered a pattern of earthquakes descending on angled paths from ocean trenches to a depth of 600-700km into the mantle. The earthquakes are assumed to show the line of descent of the sinking (subducting) oceanic plate.
Harry Hess	1950s and 1960s	Investigated mid-ocean ridges and ocean trenches and hypothesized that new oceanic crust was created at ridges and ancient oceanic crust destroyed at trenches.
Fredrick Vine & Drummond Matthews	1963	Identified patterns of magnetic stripes in rocks on the ocean floor either side of mid-ocean ridges: this led to the theory of seafloor spreading.
John Tuzo Wilson	1960s	Identified mantle hotspots and transform faults (which we often call conservative plate boundaries) – both key parts of tectonic theory.
Dan McKenzie	1966	McKenzie made major contributions to the understanding of heat convection in the mantle, a key driving force of plate tectonics.



Geo Factsheet

www.curriculum-press.co.uk Number 367

Glacial Mass Balance

Figure 1a Valley glacier

Figure 1b Cirque glacier

Figure 1c Outlet glacier (top)
Figure 1d Icefield (bottom)

Approximately 10% of the earth's surface is covered by ice, that is an estimated 14.9 million sq. km, of which 4% is comprised of glaciers. A glacier is a large body of ice, built up over a considerable number of years, from accumulated and compressed snow. They can move, as their sheer mass allows them to 'flow'. There are 4 main glacier types mainly located within mountain ranges (see Figures 1a-1d).

Yet, whatever the size, location, or structure of the glacier, each operates as a Physical System. In this respect, all glaciers have:

- Inputs – that is water (as snow), as well as geological material e.g. rock eroded by the moving ice.
- Stores, Flows and transfers - the moving ice and material within, upon and underneath it, referred to as Moraine, is transferred but the glacier of ice which forms from the compacted snow is regarded as a store.
- Outputs - meltwater, calved icebergs and sediment deposited at the snout or glacial outwash material, water vapour (Figure 2).

Figure 2 The 'physical system' of glaciers

What is mass balance or the glacial budget?

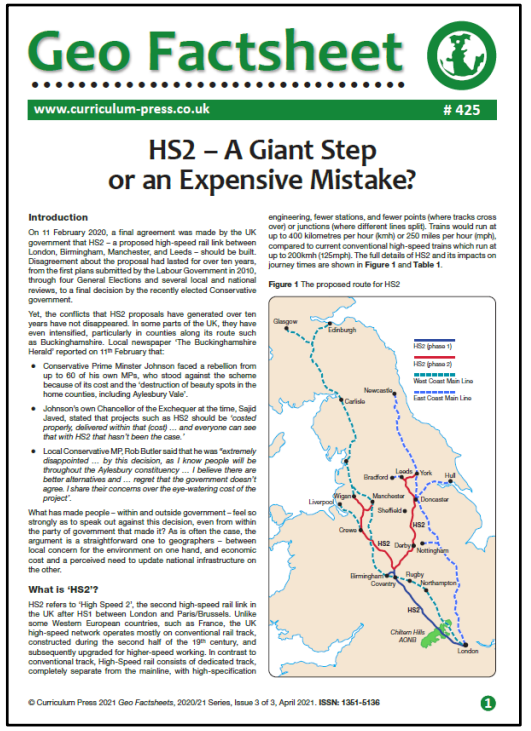
Using Systems analysis to investigate glaciers assists in our understanding of the mechanisms of glacial advance and retreat, as they either expand, shrink, or maintain an equilibrium. These structural changes are recognised as Mass balance (also known as the mass/glacial budget), which is the change in the mass of an ice body over time. The total mass alters because of the difference between 2 major processes:

Accumulation – all processes that add to the volume of the glacier i.e. snow (precipitated or windborne), and freezing rain, builds up in the accumulation zone, usually in the higher latitude regions of the glacier where there is more precipitation than loss due to melting, etc.

Ablation – all processes that reduce the volume of the glacier where snow and ice is lost due to melting, evaporation, and sublimation

Annual mass balance is the mass balance at the end of the year, calculated as the sum of the winter balance and summer balance. Accumulation and ablation usually show seasonal variation; the mass balance experiences an annual cycle of growth and depletion. If more snow accumulates in the winter on a glacier than snow and ice is lost during summer, the mass balance is positive. If summer melting exceeds the accumulation in the previous winter, the mass balance is negative. The seasonal distribution of precipitation is more important than the annual total amount. Mean summer temperature is the key to the dominant process in that season. This leads to considerable regional variation, e.g. at mid-latitudes it snows during the winter and melts during the summer, which is different from tropical regions, where ice melting and accumulation can occur at the same time.

Figure 3 The main zones where these processes occur



Geo Factsheet

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HS2 – A Giant Step or an Expensive Mistake?

Introduction

On 11 February 2020, a final agreement was made by the UK government that HS2 – a proposed high-speed rail link between London, Birmingham, Manchester, and Leeds – should be built. Disagreement about the proposal had lasted for over ten years, from the first plans submitted by the Labour Government in 2010, through four General Elections and several local and national reviews, to a final decision by the recently elected Conservative government.

Yet, the conflicts that HS2 proposals have generated over ten years have not disappeared. In some parts of the UK, they have even intensified, particularly in counties along its route such as Buckinghamshire. Local newspaper 'The Buckinghamshire Herald' reported on 11th February that:

- Conservative Prime Minster Johnson faced a rebellion from up to 60 of his own MPs, who stood against the scheme because of its cost and the 'destruction of beauty spots in the home counties, including Aylesbury Vale'.
- Johnson's own Chancellor of the Exchequer at the time, Sajid Javed, stated that projects such as HS2 should be *'costed properly, delivered within that (cost) ... and everyone can see that with HS2 that hasn't been the case.'*
- Local Conservative MP, Rob Butler said that he was *"extremely disappointed ... by this decision, as I know people will be throughout the Aylesbury constituency ... I believe there are better alternatives and ... regret that the government doesn't agree. I share their concerns over the eye-watering cost of the project'.*

What has made people – within and outside government – feel so strongly as to speak out against this decision, even from within the party of government that made it? As is often the case, the argument is a straightforward one to geographers – between local concern for the environment on one hand, and economic cost and a perceived need to update national infrastructure on the other.

What is 'HS2'?

HS2 refers to 'High Speed 2', the second high-speed rail link in the UK after HS1 between London and Paris/Brussels. Unlike some Western European countries, such as France, the UK high-speed network operates mostly on conventional rail track, constructed during the second half of the 19th century, and subsequently upgraded for higher-speed working. In contrast to conventional track, High-Speed rail consists of dedicated track, completely separate from the mainline, with high-specification engineering, fewer stations, and fewer points (where tracks cross over) or junctions (where different lines split). Trains would run at up to 400 kilometres per hour (km/h) or 250 miles per hour (mph), compared to current conventional high-speed trains which run at up to 200km/h (125mph). The full details of HS2 and its impacts on journey times are shown in Figure 1 and Table 1.

Figure 1 The proposed route for HS2

Geo Factsheet

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Are We in an Era of De-Globalisation?

Introduction

There are many ways of defining the term 'globalisation'. However, in simple terms, we can think about it as 'the increasing interconnectedness of people and places in an ever-shrinking world'. Globalisation is caused by numerous factors. Many A-level exam boards require you to study some of these factors including: the development of technology (including ICT and transport technology), the expansion of financial systems, changes in security arrangements and trade agreements. These factors work independently, or in many cases, together to encourage globalisation. This Geo Factsheet suggests that in the last few years, there have been indications such as decreases in the volume of trade, that globalisation in some areas is actually in decline and that a process of de-globalisation is occurring. A number of groups are against globalisation, for a whole array of reasons, it is precisely because of these negatives that some de-globalisation has occurred. For your exam preparation you are required to develop a critique of globalisation which assesses its advantages and disadvantages, environmentally, socio-economically and culturally.

This Geo Factsheet will discuss a number of situations and events that themselves suggest that the world, or indeed parts of it, are involved in a process of de-globalisation with more nationalistic and self-sufficiency era developing.

Brexit

On the 23rd of June 2016, the UK held a referendum on membership of the European Union (EU). 51.89% of the population voted to leave, whilst 48.11% voted to remain. The voter turnout was 72% of the population which is judged to be a very significant voter turnout. Following this vote, it has taken a very long time for the UK actually to leave the EU. There have been many debates since the referendum about the form of exit that the UK should take, including discussions on the details of what, if any, deal the UK will have with the EU. At the time that this Factsheet was written, Boris Johnson had held a general election on the 12th December 2019 which saw 365 Conservative MPs returned, giving him a sizeable majority of 80 seats. This allowed Johnson to get legislation through Parliament leading to the UK leaving the EU on January 31st, 2020. Existing arrangements will continue until 31st January 2021 leaving twelve months to negotiate a new relationship regarding trade and other matters. The global crisis caused by the Covid-19 pandemic may delay this agreement, but to date the UK Government are determined it will not do so.

At this stage, it may be worth noting what the claimed advantages and disadvantages of Brexit are. See the following tables.

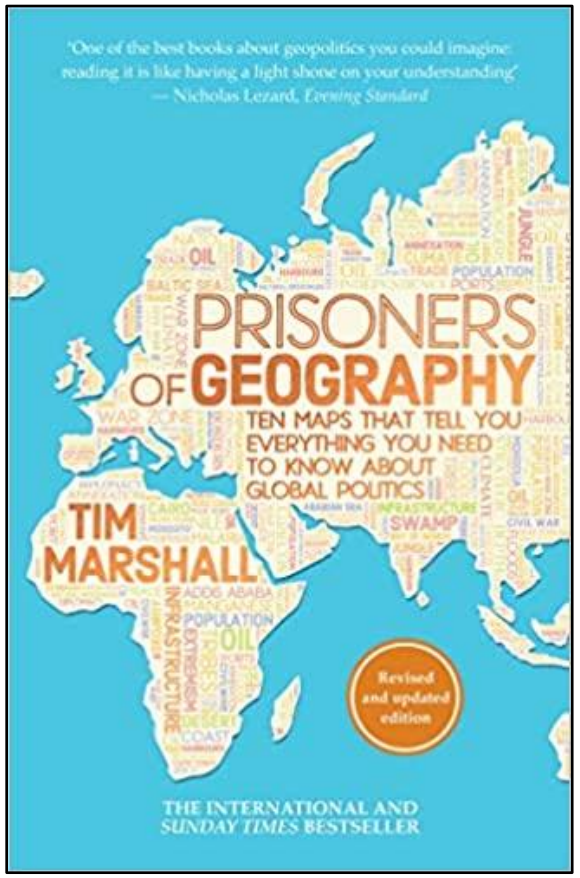
Figure 1 Countries of the European Union

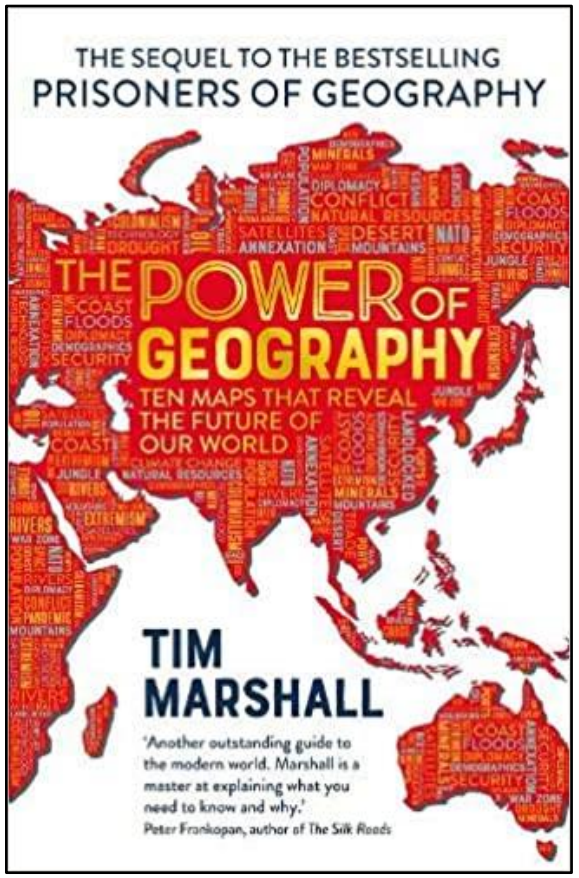
Advantages of EU and Disadvantages of EU

Advantages of EU Membership

- Although the UK contributed around £13.1 billion to the annual EU budget, some £4.5 billion a year found its way back to the UK through EU spending (e.g. Regional Fund) making the country a net contributor of around £8.5 billion. However, there were also other positive, financial gains in areas such as trade and investment from companies as a result of EU membership.
- The EU operates as a single market. In such a situation, imports and exports between countries are free from tariffs (taxes) and other barriers such as extensive border checks. Furthermore, the UK has been able to benefit from free trade deals that the EU has with other countries such as Canada and Japan. For people in favour of remaining in the EU, trade is a particularly important point as the Office for National Statistics (ONS) figures show that in the period 2006–18, 45% to 55% of the UK's exports went to the EU.
- As a result of being in the EU, many companies invested in London to gain access to the EU. For example, US banks. Some questioned whether this would continue following Brexit.

We also strongly recommend that you read the following two books below by Tim Marshall.





Have an excellent summer, stay safe and we look forward to seeing you in September!

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