

Pearson Edexcel Level 3 GCE

Geography

Advanced Subsidiary

Paper 1

Sample assessment material for first teaching
September 2016

Resource Booklet

Paper Reference

8GE0/01

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SECTION A: TECTONIC PROCESSES AND HAZARDS

The following resource relates to Question 1.

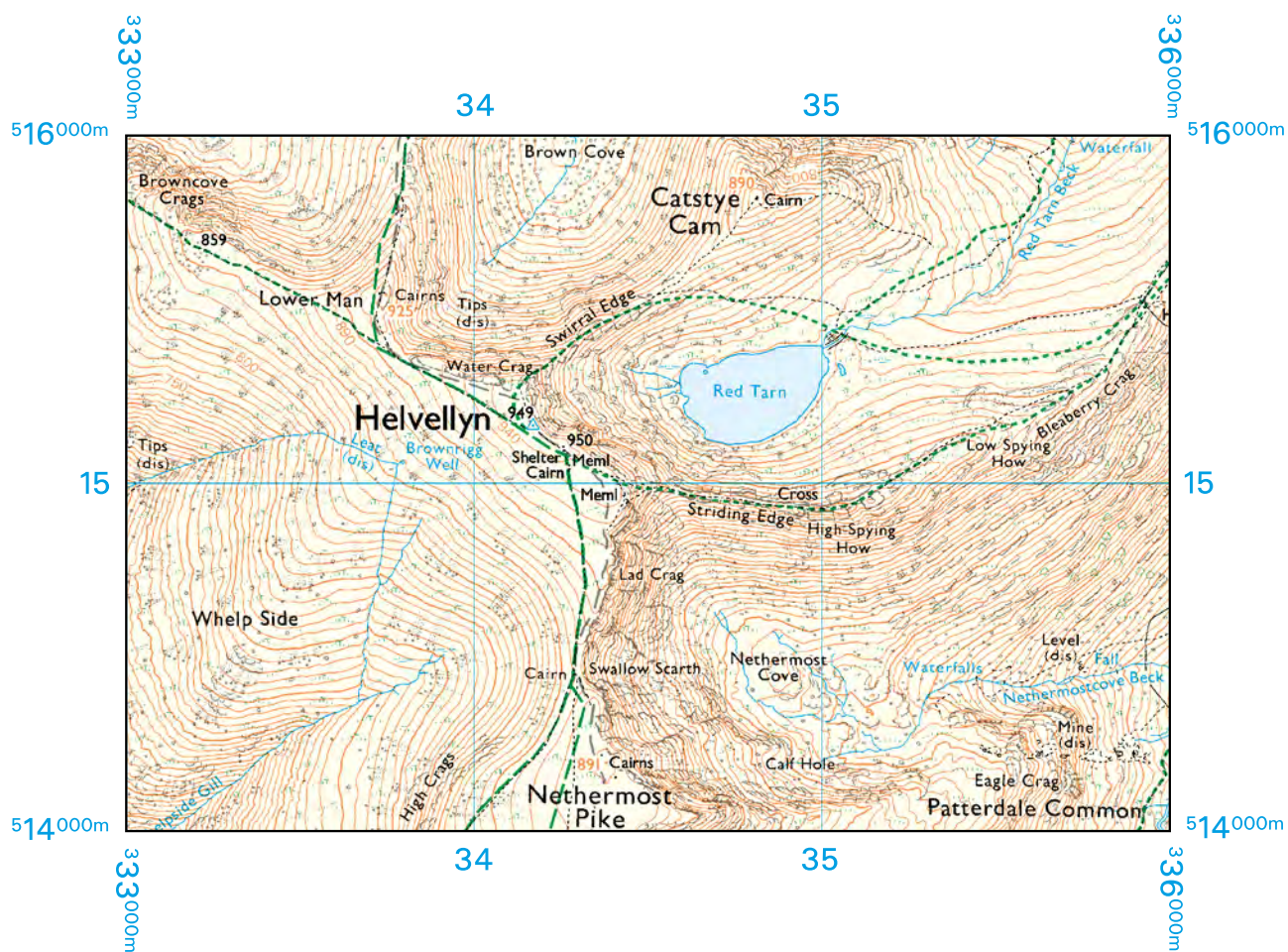
Magnitude of earthquake	Region	Gross Domestic Product (GDP) per capita in \$	Confirmed number of deaths
8.6	Coastal Northern Sumatra, Indonesia	3551	10
7.6	Costa Rica	9442	2
7.4	Oaxaca, Mexico	9817	1
6.4	North west Iran	6578	306
5.7	Hindu Kush, Afghanistan	664	75
5.5	Sichun-Yunnan, China	6092	81

(Source: earthquake.usg.gov/earthquakes/eqarchives/year/2012/2012_deaths.php)

Figure 1: A table giving worldwide deaths from selected earthquakes in 2012

SECTION B: GLACIATED LANDSCAPES AND CHANGE

The following resource relates to Question 2.



(Source: Extract produced by Ordnance Survey 2015.
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Figure 2: A 1:25000 scale map extract of a relict glaciated upland area in England

The following resource relates to Question 3.

Figure 3: Results of a student investigation into sediment size and roundness data.

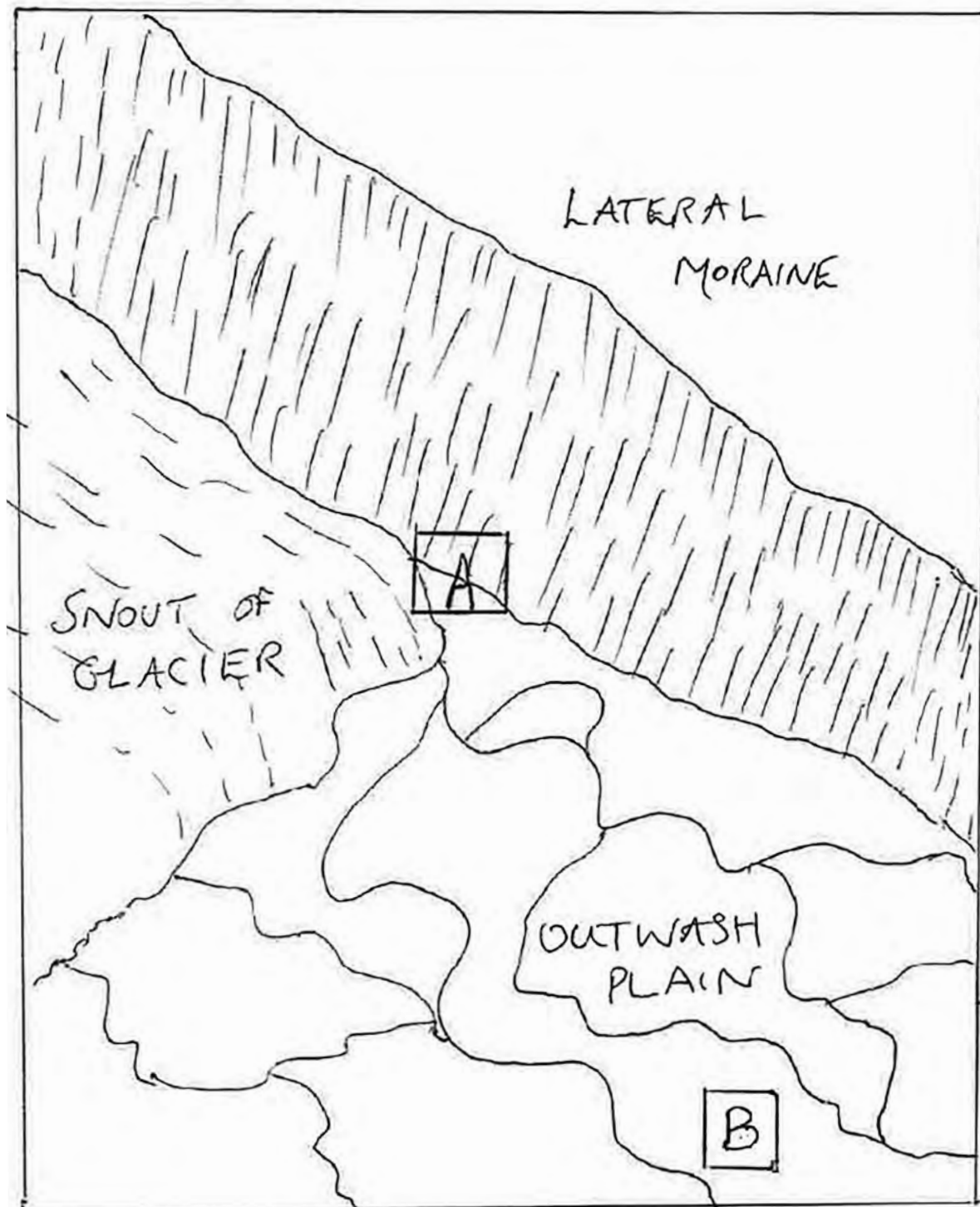
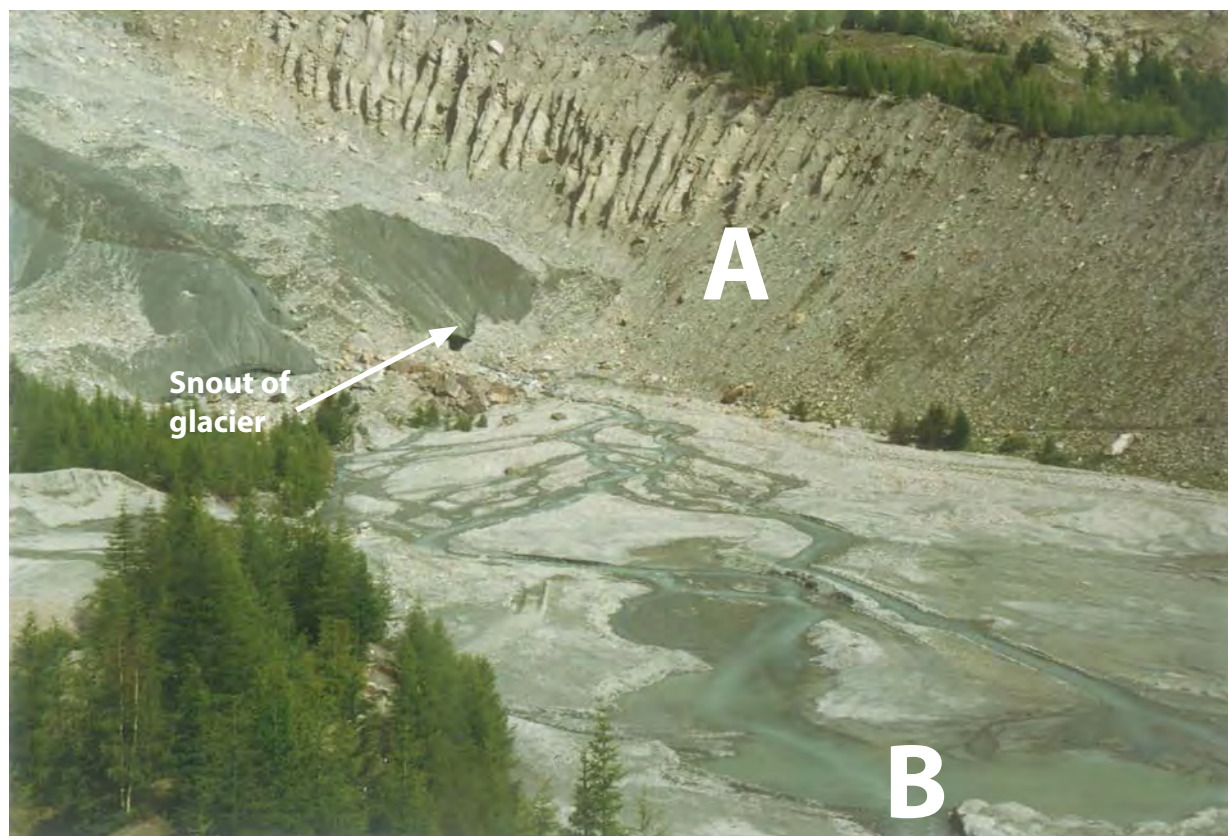


Figure 3A: A field sketch of an outwash plain of a still active glacier (Spielboden Glacier, Switzerland)



(Source: Mark Crundwell)

Figure 3B: A digital photograph of the snout of the Spielboden Glacier, Switzerland

	Mean sediment size	Average sediment shape (Cailleux index) Greater R values equate to greater roundness.	Distance from snout of glacier
Site A	17.4 cm	160	2 m
Site B	2.1 cm	755	380 m

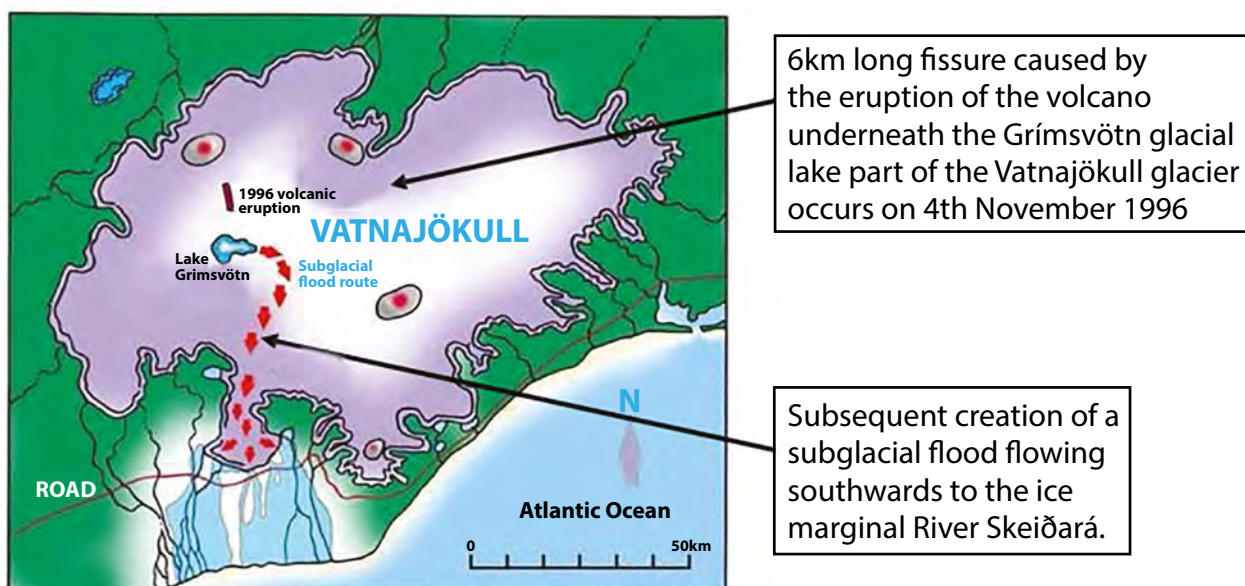
Figure 3C: A table showing data of student's results

The following resources relate to Question 4.

Figure 4: Information relating to the glacial outburst flood of the Vatnajökull ice sheet, Iceland 1996.

Date	Time	Discharge of River Skeiðará in cubic ms-1	Notes
3/11	12.00pm	250	Normal river discharge.
4/11	21.30 pm	250	Start of Eruption under Vatnajökull ice cap.
5/11	8.00 am	3,500	Eruption now estimated to beat peak.
5/11	10.00 pm	4000	Icebergs observed breaking from snout of glacier.
5/11	13.00 hours	15,000	Power lines and telephone cables cut.
5/11	18.00 pm	25,000	Skeiðará bridge washed away.
5/11	21.30 pm	45,000	Many large icebergs in excess of 200 tons noted.
6/11	9.00 am	3,000	3km ³ of water and ash have flowed out in last 27 hours.
7/11	12.00 pm	450	Jökulhlaup officially declared over.

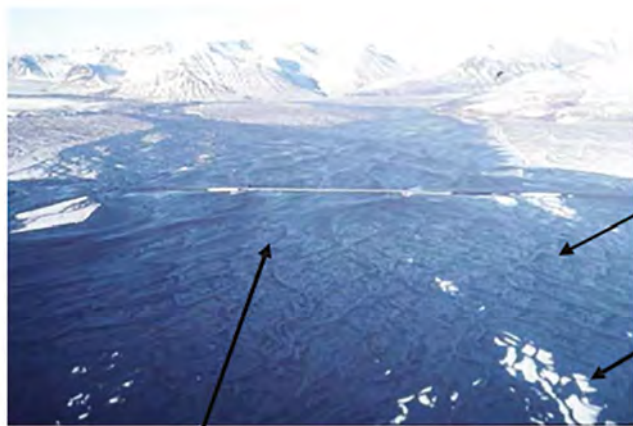
Figure 4A: A time line of the Jökulhlaup of 1996.



Key:  Volcanoes

(Source: <https://answersingenesis.org/geology/catastrophism/icelands-recent-mega-flood/>)

Figure 4B: A map showing the location of the glacial outburst flood of the Vatnajökull ice sheet, Iceland 1996.



As well as flood water the glacial outburst also carried 185 million tons of silt and ash.

Iceblocks which have broken from the snout of the glacier can be seen being carried down with the flow.

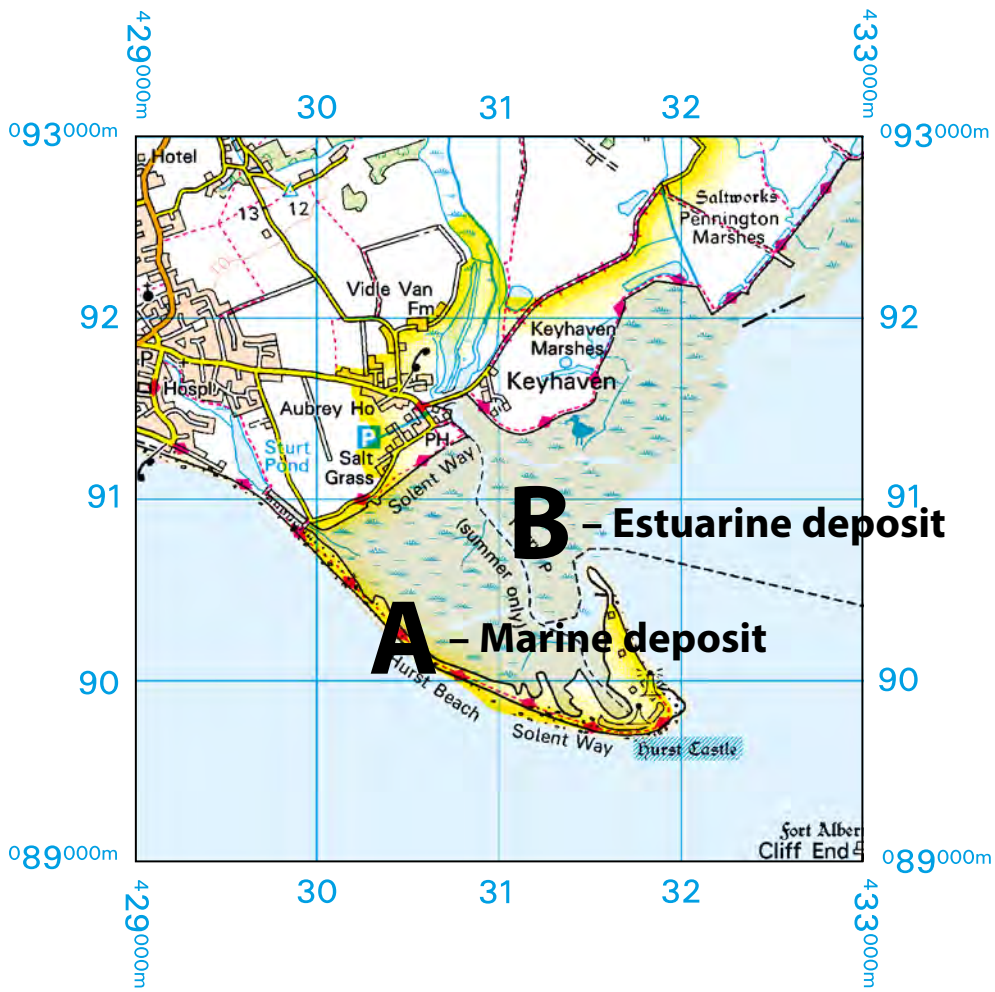
Maximum outflow from the subglacial flood in to the River Skeiðará estimated to be 45,000 cubic ms⁻¹ – second largest flow of water apart from River Amazon.

(Source: Photo by M.T. Gudmundsson, University of Iceland)

Figure 4C: Photograph looking northwards towards the glacial outburst flood of the Vatnajökull ice sheet, Iceland 1996.

SECTION C: COASTAL LANDSCAPES AND CHANGE

The following resource relates to Question 5.



(Source: Extract produced by Ordnance Survey 2015.
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Figure 5: A 1:50000 scale map extract showing Hurst Castle, a coastal landform on the south coast of England

The following resource relates to Question 6

Figure 6: Results of student investigation into sediment size for two beach transacts.

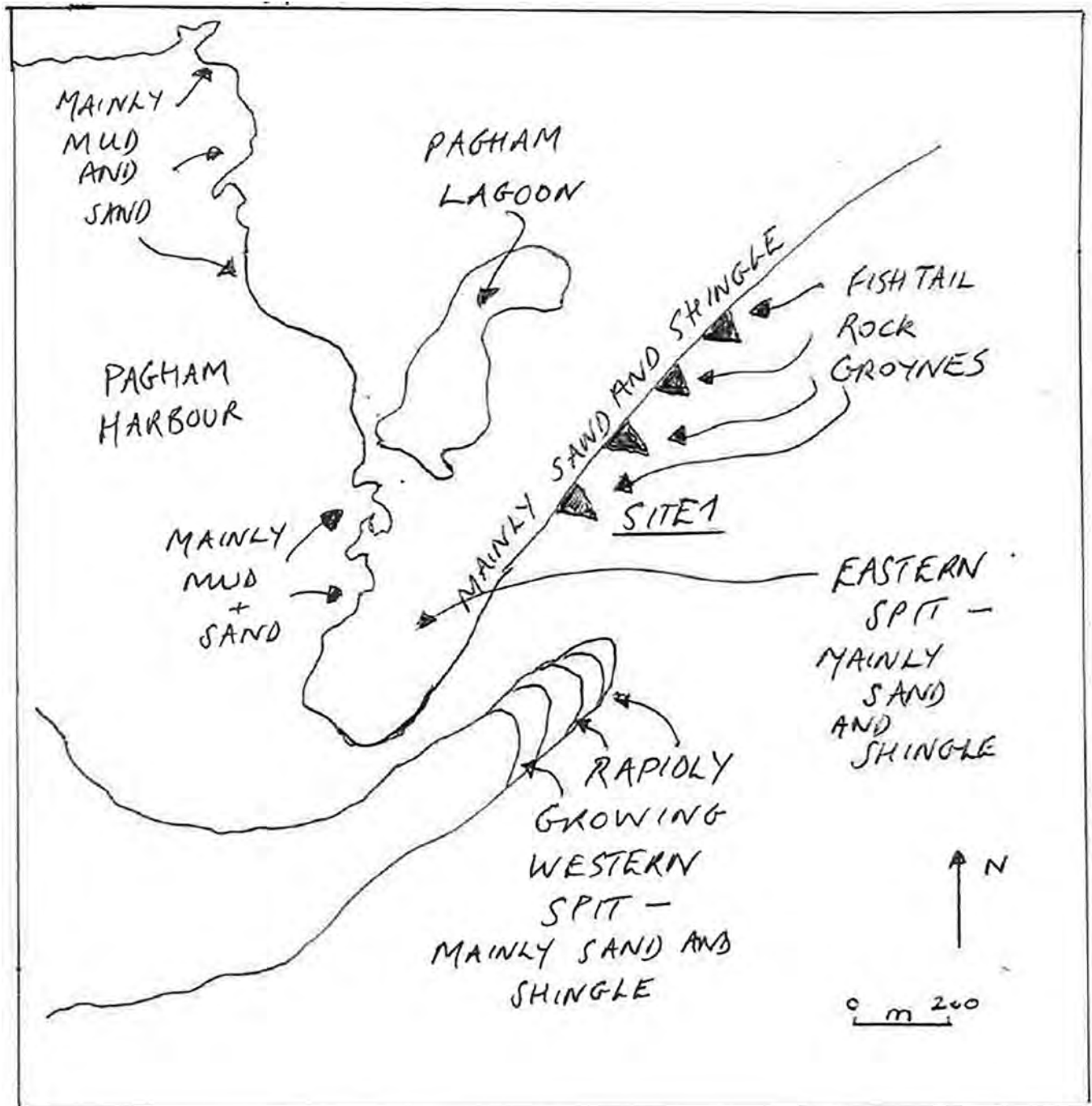
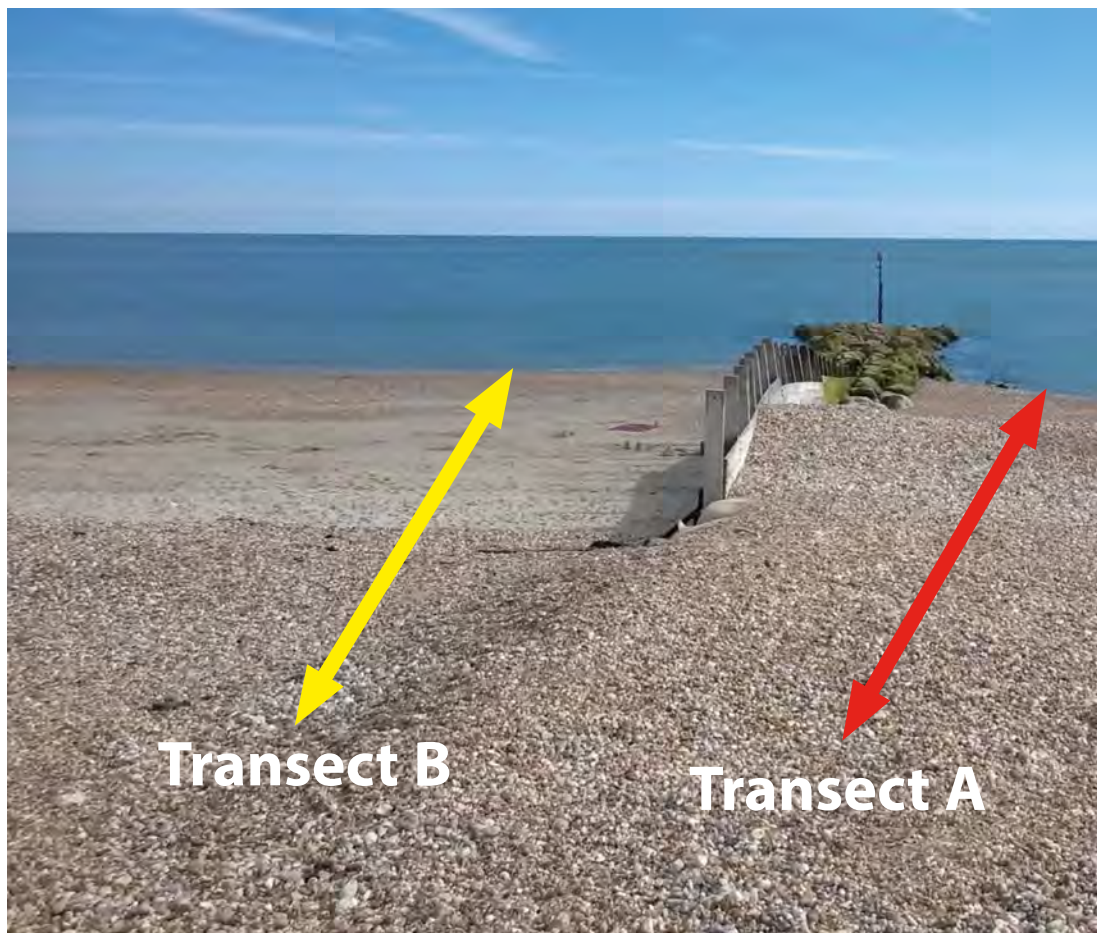


Figure 6A: A student's hand-drawn sketch map of their study area



(Source: Photo – Mark Crundwell)

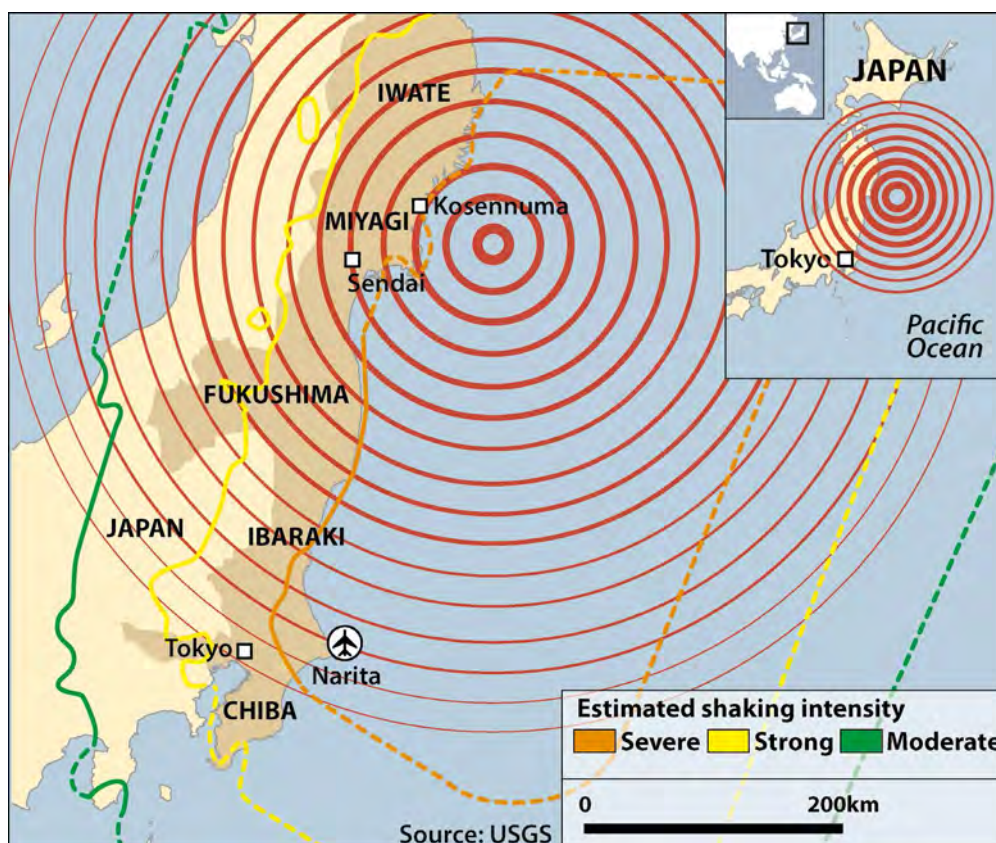
Figure 6B: A digital photograph of the location of two beach transects

Characteristics of the two beach profiles	Average sediment size	Average beach gradient	Cross-sectional area of the beach
Transect A	7.4 cm	10.6 degrees	12.12 m ²
Transect B	2.1 cm	5.1 degrees	6.02 m ²

Figure 6C: A table showing data collected by the student

The following resources relate to Question 7.

Figure 7: Information relating to the Sendai tsunami.



(source: © USGS)

Figure 7A: Map showing areas affected by the earthquake.

Information on the Tohoku Earthquake

Magnitude – 9.0 MMS (the most powerful earthquake event in Japanese history)

Epicentre – 70km east of Miyagi

Tsunami impact – on Miyagi in 10 minutes, Iwate in 30 minutes and Ibaraki in 1 hour after the earthquake.

Area of Japan	Deaths	Missing	Economic losses in \$billion	Tsunami height in metres
Iwate	888	159	82	8.5
Miyagi (including Kesenuma and Sendaik)	4214	877	145	7.6
Ibaraki	27	0	8	4.2

Figure 7B: Data relating to effects of the tsunami.



Iwate – a rocky coastline with steep cliffs



Miyagi (Kesenuma) – a coastal plain with a high population density



Ibaraki – a 10m high tsunami wall protecting low lying areas

(Source: '© Keisuke Iwamoto/Getty Images)

Figure 7C: Photographs of coastal locations affected by the tsunami.