

KSHS Physical Geography Transition Work – Miss Chant

Task 1: GCSE work/revision:

- You will probably have studied 2 of these 3 topics at GCSE: Rivers, Coasts and Glaciation. If you studied coasts, read through and revise your notes to consolidate your prior learning of the topic in preparation for the A-Level course – see the GCSE specification below. If you studied Glaciation and/or Rivers, it would be useful to recap the key processes of weathering, erosion, transportation and deposition, as the terminology is similar.

Key idea	Specification content
The coast is shaped by a number of physical processes.	Wave types and characteristics. Coastal processes: <ul style="list-style-type: none">• weathering processes – mechanical, chemical• mass movement – sliding, slumping and rock falls• erosion – hydraulic power, abrasion and attrition• transportation – longshore drift• deposition – why sediment is deposited in coastal areas.
Distinctive coastal landforms are the result of rock type, structure and physical processes.	How geological structure and rock type influence coastal forms. Characteristics and formation of landforms resulting from erosion – headlands and bays, cliffs and wave cut platforms, caves, arches and stacks. Characteristics and formation of landforms resulting from deposition – beaches, sand dunes, spits and bars. An example of a section of coastline in the UK to identify its major landforms of erosion and deposition: North Norfolk
Different management strategies can be used to protect coastlines from the effects of physical processes.	The costs and benefits of the following management strategies: <ul style="list-style-type: none">• hard engineering – sea walls, rock armour, gabions and groynes• soft engineering – beach nourishment and reprofiling, dune regeneration• managed retreat – coastal realignment. An example of a coastal management scheme in the UK to show: <ul style="list-style-type: none">• the reasons for management• the management strategy• the resulting effects and conflicts (Holderness)

Task 2: Glossary: Complete the glossary of key terms on pages 5-7.

Task 3: Research the key characteristics of different rock types. Complete a table like the one below.

ROCK TYPE (LITHOLOGY)	How is it formed?	Crystalline or clastic structure?	Examples of specific rock types?	How fast do they erode at the coast?	Other comments.
Igneous					
Sedimentary					
Metamorphic					

Task 4: Holderness Case Study: rapid coastal recession

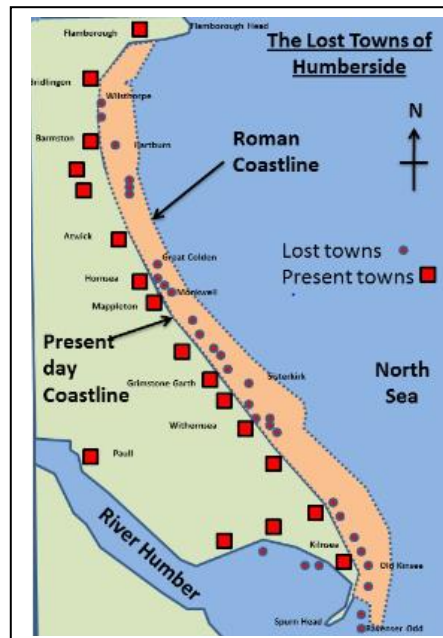


The Holderness Coast is in East Yorkshire, stretching from Flamborough Head in the north to Spurn Point in the south. It is Europe's fastest eroding coastline, losing 2-3m a year on average. We will be studying the Holderness coast as an example of a rapidly retreating coastline to understand why, the consequences and how the risks can be managed.

These websites are particularly helpful:

<https://www.internetgeography.net/topics/the-holderness-coast-case-study/>

<https://geographyalevelslc.files.wordpress.com/2012/05/a141-holderness.pdf>



TASK: Undertake some research to find out the following and write BRIEF answers. Use headings to organise it.

1. What physical factors cause the rapid recession? (Geology; marine processes; sub-aerial processes including weather and mass movement)
2. What human factors influence recession rates? (coastal management; climate change)
3. What are the average rates of erosion? Are they constant or variable over time? Do some places erode faster than others along the coast? Why?
4. What are the economic consequences of erosion? (Housing, businesses, agricultural land, infrastructure)
5. What are the social consequences of erosion? (Relocation of families/communities, loss of livelihoods, amenity value)
6. How is the Holderness coast managed? Refer to hard and soft engineering. Which places are protected and why?

KEY WORDS:

- **Geology** = rock type and structure
- **Marine processes** = erosion, transportation & deposition caused by the waves
- **Sub-aerial processes** = weathering and mass movement (e.g. landslides, slumps, rockfalls)
- **Infrastructure** = transport links and amenities such as water, electricity, sewage systems, internet cables
- **Amenity value** = the value of a resource for people e.g. for leisure, recreation, aesthetics, wildlife habitat
- **Hard engineering** = use of artificial structures to prevent or slow down coastal processes e.g. sea walls, groynes
- **Soft engineering** = working with nature to reduce the impact of coastal processes e.g. beach nourishment or reshaping, dune stabilisation.

Please ensure that the glossary of key terms, rock research and Holderness case study are printed off and submitted to your geography teacher in your first A-level geography lesson in September.

Task 4: Optional - Developing independent geographical awareness

We strongly encourage you to read around the subject to spark your interest in all aspects of the geography A-level. Watching documentaries and films, listening to relevant podcasts and keeping up to date with recent events on news channels can greatly support your understanding of all topics.

In physical geography you will study:

- Coastal Landscapes and Change
- Tectonic processes and hazards (volcanoes, earthquakes and tsunamis)
- The Water Cycle and Water Insecurity
- The Carbon Cycle and Energy Security

Here are some suggestions if you have time or are interested:

Books:

Super Volcano by Greg Breining: ISBN: 0760336547

Explores the shocking answer to this question and others in a scientific yet accessible look at the enormous natural disaster brewing beneath the surface of the United States. Yellowstone is one of the world's five 'super volcanoes.'

Documentaries:

- <https://www.bbc.co.uk/iplayer/episode/b04l90zl/sacred-rivers-with-simon-reeve-1-the-nile> Simon Reeve travels from source to mouth of the River Nile – one of our case studies of conflict over the use of water resources in the Water topic.
- <https://www.bbc.co.uk/iplayer/episode/m00049b1/climate-change-the-facts> Climate Change – The Facts with David Attenborough. Great documentary about causes, effects and responses to climate change which we study in the Carbon topic.
- <https://www.bbc.co.uk/iplayer/episode/m001jm53/panorama-aftershock-the-turkeysyria-earthquake> Panorama programme about the Turkey-Syria earthquake – could more have been done to save lives?

Films:

1. **Pompeii (2014) (12A)**
Inspired by the eruption of Mount Vesuvius in AD79 that buried the city of Pompeii, it looks at the terror causes by a volcanic eruption.

2. San Andreas (2015) (12A)

A fictional film that portrays the destructive impact that a strong earthquake along California's notorious San Andreas fault line could have on nearby cities, such as Los Angeles and San Francisco.

3. The Impossible (2012) (12)

Based on a survivor's experience of the 2004 Boxing Day tsunami in the Indian Ocean, which was caused by an undersea earthquake measuring over 9 on the Richter Scale.

4. Dante's Peak (1997) (12)

Set in the fictional town of Dante's Peak the film looks at what can happen when a dormant volcano wakes up. Great for looking at the warning signs before an eruption and the difficulties of accurate prediction and evacuation orders.

Podcasts: - there are many interesting podcasts available including the following:

<https://www.bbc.co.uk/programmes/b006r4wn/episodes/downloads> Costing the Earth – many episodes focus on geographical issues. Two recent episodes explore some coastal issues:

<https://www.bbc.co.uk/programmes/m001jsl0> Removal of mangroves to create prawn farms

<https://www.bbc.co.uk/programmes/m001jktm> Should we allow some parts of the coast to disappear into the sea?

<https://www.bbc.co.uk/programmes/w3ct36bf> Science in Action – a look at the causes of drought in East Africa.

Glossary: Coasts

Abrasion/ Corrasion	
Accretion	
Amenity Value	
Attrition	
Beach morphology	
Coastal recession	
Concordant coastline	
Corrosion	
Cost-benefit analysis	
Dalmatian Coast	
Deposition	
Discordant coastline	
Drift-aligned beach	
Emergent coastline	
Environmental impact assessment	
Erosion	

Eustatic change	
Geological structure	
Haff coastline	
Isostatic change	
Lithology	
Longshore drift/ littoral drift	
Marine processes	
Mass movement	
Pioneer species	
Polders	
Sediment budget	
Sediment cell	
Sub-aerial processes	
Submergent coastline	
Subsidence	
Swash and Backwash	

Swash-aligned beach	
Swell waves	
Terminal groyne syndrome	
Transportation	
Weathering	