



Question(s) **AQA GCSE Geography Revision** 

Define the key terms:

- Abrasion
- Attrition


Answer(s) 

Abrasion – caused by waves picking up material which is forced against the cliff face wearing it away

Attrition – where stones and pebbles in the sea knock against each other causing them to become smoother and rounded.


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Question(s) **AQA GCSE Geography Revision** 

Define the key terms:

- Fetch
- Backwash
- Swash

Answer(s) 


Fetch – The distance over which wind has blown to form a wave

Backwash – the movement of water back down a beach


Swash – the movement of water up a beach

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Question(s) **AQA GCSE Geography Revision** 


Describe and explain the way in which waves form

Answer(s) 


1. wind blows over surface of water – creates friction
2. frictional drag causes water particles to begin to rotate and energy is transferred forward in the form of a wave
3. as a wave reaches shallow water, friction between the sea bed and the base of the wave – causes the wave to slow down – shape becomes more elliptical
4. top of the wave however – unaffected by the friction – becomes steeper – eventually breaks
5. when it breaks – water moving up the beach in the swash and the water moving back down the beach in the backwash.

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Question(s) **AQA GCSE Geography Revision** 


Outline the main characteristics of constructive waves

Answer(s) 


- Low <1m
- Low energy
- Low frequency (<10/min)
- Swash>Backwash
- Deposition

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Question(s) **AQA GCSE Geography Revision** 



Outline the main characteristics of destructive waves

Answer(s) 

- High (>1m)
- High energy
- High Frequency (>10 min)
- Swash<Backwash
- Erosion


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 **Question(s)** **AQA GCSE Geography Revision**  Inspiring Beyond Measure

Describe 3 factors which will affect the strength of a wave

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Answer(s)  ST IVES COLLEGE

Strength and speed of wind – faster the wind – more energy transferred – bigger wave produced

Duration of the wind – length of time for which the wind has blown – longer the wind blows for, the more energy is transferred to the wave.


Fetch – the distance over which the wind has blown (i.e. how far the wave has travelled) – longer the fetch the stronger the wave.

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 **Question(s)** **AQA GCSE Geography Revision**  Inspiring Beyond Measure

Outline a form of physical weathering operating at the coast



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Answer(s)  ST IVES COLLEGE

Frost Shattering – water gets into cracks in the rocks – if temperatures fall below freezing at night the water freezes and expands (9-10%); puts pressure on the rock around – then thaws. Freeze-thaw cycle gradually forces the rock apart.


Salt crystal growth – sea water contains salt from spray from the waves – when evaporates leave salt behind – salt crystals growing in the cracks in the rock can force the rocks apart

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 **Question(s)** **AQA GCSE Geography Revision**  Inspiring Beyond Measure

Name and outline four examples of erosion processes operating at the coast

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Answer(s)  ST IVES COLLEGE



Abrasion – where rock fragments in the wave are flung against the cliff face

Hydraulic action – waves break against cliff face – pressure of the breaking wave compresses air in cracks – ‘mini-explosions’ force the rocks apart

Corrosion – occurs where salt water is able to dissolve some of minerals in the rock (e.g. limestone cliffs gradually weakened).


Attrition – rock fragments carried by the waves – hit against each other and gradually wear down.

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 **Question(s)** **AQA GCSE Geography Revision**  Inspiring Beyond Measure

Outline the mass movement processes of (i) slumping and (ii) soil creep


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Answer(s)  ST IVES COLLEGE

Slumping – erosion at base of cliff may lead to rotational slipping of cliff above – particularly on clay cliffs – during dry periods the clay contracts and cracks and will become saturated during wet periods – moving downslope due to gravity.


Soil Creep – slow downhill movement of soil

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 **Question(s)** **AQA GCSE Geography Revision**  Inspiring Beyond Measure



Name 4 examples of erosion landforms at the coast

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Answer(s)  ST IVES COLLEGE

- Headlands and Bays
- Wave Cut Platform
- Cliff
- Cave
- Stack and Stump
- Arch

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Give 4 advantages of the coastal management scheme at Lyme Regis


Answer(s)  ST IVES CELEBRITY

- The new beaches have increased tourism and businesses are thriving (multiplier effect)
- It is now possible to walk along the whole beach even at high tide
- Provides long term protection against coastal erosion and landslips
- New sea wall provides a promenade along the sea front and will protect 500 homes.

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Give 4 disadvantages of the coastal management scheme at Lyme Regis


Answer(s)  ST IVES CELEBRITY

- Some think the new defences have spoilt the natural coastal landscape
- The sea wall may interfere with coastal processes and increase erosion elsewhere
- There has been an increase in visitors – has caused conflict with locals.
- The area is a world heritage site famous for fossils – some fossils may never be uncovered if landslips are prevented.

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
INSPIRING BEYOND MEASURE



Define the terms hard and soft engineering with regards to coastal management

Answer(s)  ST IVES CELEBRITY


Hard engineering involves the construction of man-made defences to control the natural processes (e.g. groynes and sea walls)

Soft Engineering works with natural processes, not involving construction. It is usually visually unobtrusive and considered more environmentally friendly

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Describe how Rock Armour (rip rap) works and give one advantage and one disadvantage



Answer(s)  ST IVES CELEBRITY

Rip Rap – large resistant rocks placed in front of the cliff


ADV – absorb wave energy – protect cliffs behind, can be cheap (depending on rock type)

DISADV – can make beaches inaccessible – not effective in storm conditions.

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Describe how a groyne works and give one advantage and one disadvantage



Answer(s)  ST IVES CELEBRITY

Groynes (often wooden – but sometimes rock or concrete) are fences built across the beach, stretching from the coastline into the sea.

ADV – Prevents LSD – leads to build up of beach in front of cliff – natural defence reducing erosive power of the waves.


DISADV – unattractive / access becomes difficult; looks ugly; starves areas down the coast of beach material which can increase erosion in these areas.

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 **Question(s)** **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Describe what is meant by beach replenishment and give one advantage and one disadvantage



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Answer(s)  St Ivo Grammar School

Beach replenishment is the addition of sand taken from somewhere else (often offshore).


Advantage – looks natural / quite cheap and beaches best form of natural defence
Disadvantage – gets eroded by sea (has to be replaced frequently)

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 **Question(s)** **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE



What is meant by managed retreat?
Give one disadvantage

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Answer(s)  St Ivo Grammar School


Moving people and activities back from the vulnerable areas of the coast. Disadvantage – compensation has to be paid to homeowners and there is disruption and upset for those that have moved.

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 **Question(s)** **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE



Give 3 examples of coastal management used at Lyme Regis

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Answer(s)  St Ivo Grammar School

- 4 phase project
- New sea wall and promenade built to east of River Lim and £1.4 million emergency project to stabilise the cliffs
- Wide sand /shingle beach created to absorb wave energy
- Rock armour at the Cobb to absorb wave energy / anchor the new beach
- 2013-2015 – new 390m sea wall created and extensive nailing, piling and drainage to stabilise cliffs & protect 480 homes.


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 **Question(s)** **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Give a named example of:

A Headland
A Bay
A Stack
A Spit

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Answer(s)  St Ivo Grammar School

Headland— The Foreland—Swanage Coastline (Dorset)
Bay—Swanage Bay—Dorset
Stack—Old Harry—Swanage Coastline (Dorset)
Spit—Spurn Head (Holderness Coast) or Blakeney Point (Norfolk)

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 **Question(s)** **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

What is the term given to the movement of material along a coastline?

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Answer(s)  St Ivo Grammar School

Longshore Drift

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Name two coastal erosion features shown in the photograph



Credit: Cretaceous Thermal Maximum '85-90 Ma | RICHARD NORRIS (ucd.edu)

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Answer(s)

Headland and Arch

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INSPIRING BEYOND MEASURE

Erosion has formed the feature at A—what is this?



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Answer(s)

A wave-cut notch

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INSPIRING BEYOND MEASURE

What is the feature labelled B on the photograph?



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Answer(s)

A wave-cut platform

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INSPIRING BEYOND MEASURE

What is the name of the sea-defences shown?





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Answer(s)

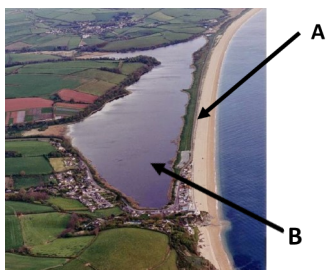
These are groynes (remember they stop longshore drift) - therefore helping to stabilise beach material so that waves break on the beach rather than attacking the coastline behind.

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

What are the features A and B?



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Answer(s)

A—Coastal Bar
B—Lagoon

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