**Student Name:**

iGCSE Geography

Course Notes

**Coasts**

**Coasts Topic Summary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Happy ☺ | Unsure  😐 | It’s a Problem ☹ |
| **Know** how waves are generated |  |  |  |  |
| **Describe** the **characteristics** of waves | Constructive wave  Destructive wave |  |  |  |
|  |  |  |  |  |
| **Describe** and **explain** how the sea and wind erode the coastline | Attrition  Abrasion  Hydraulic action  Corrosion (solution) |  |  |  |
| **Describe** and **explain** how the sea and wind transports sediment (including longshore drift) | Traction  Saltation  Suspension  Solution |  |  |  |
| **Describe** and **explain** how the sea and wind deposits sediment |  |  |  |  |
|  |  |  |  |  |
| **Describe** and **explain** the **formation** of landforms associated with the processes (erosion, deposition and transportation)  ***Know named examples for each*** | Wave cut notch (WCN)  Wave cut platform (WCP)  Cave, arch, stack and stump (CASS)  Bays and headlands  Beaches  Spits  Coastal sand dunes |  |  |  |
|  |  |  |  |  |
| **Describe** the **characteristics** of coral reefs |  |  |  |  |
| **Describe** the **conditions needed** for the formation of coral reefs |  |  |  |  |
| **Explain** how fringing reefs, barrier reefs and atolls form |  |  |  |  |
| **Describe** the **differences** betweenfringing reef, barrier reef and atolls |  |  |  |  |
|  |  |  |  |  |
| **Describe** the **characteristics** of mangrove swamps |  |  |  |  |
| **Describe** the **conditions needed** for the formation of mangrove swamps |  |  |  |  |
|  |  |  |  |  |
| **Describe** the **opportunities** created by a selected coastline | ***Tourism topic Year 11*** |  |  |  |
|  |  |  |  |  |
| **Describe** the **hazards** that coastlines present  (Must include impacts) | Erosion - **Holderness**, **Happisburgh**  Tropical Storms |  |  |  |
|  |  |  |  |  |
| **Describe** and **explain** hard and soft engineering **management techniques** |  |  |  |  |
| **Explain** themanagement techniquesused for a selected location | **Holderness** |  |  |  |

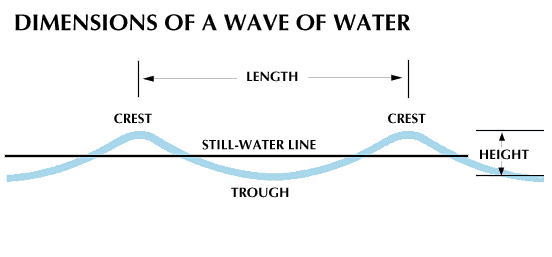
**Exam Question Summary**

|  |  |  |
| --- | --- | --- |
| Question | Mark | To improve I need to …. |
|  |  |  |
|  |  |  |
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|  |  |  |
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|  |  |  |
| End of Unit Assessment | **/ 25** |  |

**Waves**

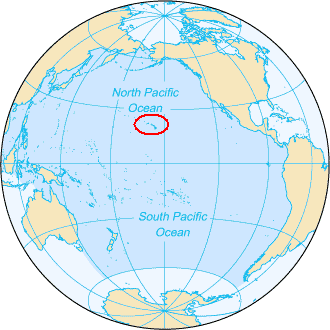
A wave is a ….

**The features of a wave**



<

Waves are generated by the frictional drag of the wind across the surface of the sea. The size and strength of waves depends on three factors:

3. 

Looking at the two maps to the right. Explain why Hawaii usually has bigger waves than Italy.



**Constructive and Destructive Waves**

As waves approach the shore, the depth of the sea becomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, causing the waves to \_\_\_\_\_\_\_\_\_\_ in height.

The type of wave is influenced by how quickly the \_\_\_\_\_\_\_\_\_\_\_\_ of the seafloor changes.

More gradual changes in the depth cause waves to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ build in height. These are called **Constructive Waves.**

If the seabed rises more steeply, \_\_\_\_\_\_\_\_\_\_\_ waves form called **Destructive Waves**.

When a wave breaks, the water continues to travel up the beach called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Once the wave no longer has enough energy to move the water up the beach, it flows back down the beach called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

gradually swash shallower taller

backwash grow depth

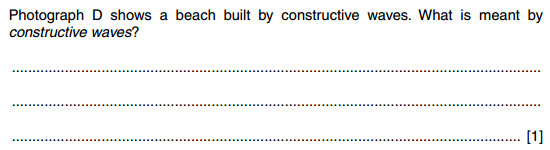
Watch the two videos of Constructive and Destructive waves and complete the table of characteristics below:

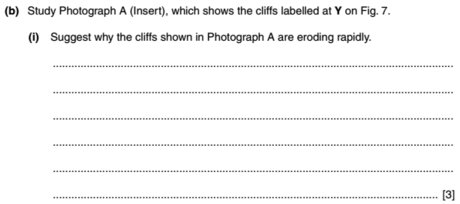
|  |  |  |
| --- | --- | --- |
| **Characteristic** | **Constructive Wave** | **Destructive Wave** |
| Swash |  |  |
| Backwash |  |  |
| Beach slope |  |  |
| Wave strength |  |  |
| Wave height |  |  |
| Wave frequency |  |  |

Draw a simple sketch of a constructive and destructive wave along with the beach profile they create in the space below:

|  |  |
| --- | --- |
| **Constructive wave** | **Destructive wave** |

Applying Your Knowledge: Exam Questions





-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------- (3)

**Coastal Processes**

**EROSION**

**How are coastlines reshaped?**

In this section you will recap the erosion, transportation and deposition processes that you have already learnt in the Rivers topic.

**Coastal Erosion**

What is erosion?

Identify and explain each of the four erosion processes represented by each cartoon:

|  |  |  |
| --- | --- | --- |
|  | **Erosion type** | **Explanation** |
| hydraulic_action |  |  |
| attrition |  |  |
| abrasion |  |  |
| corrosion |  |  |

Why are some coastlines more vulnerable to erosion than other coastlines?



**Erosion Landforms**

**Cliff =**

* Why do cliffs form?
* What are the features of a cliff?

**Exam Question**

Describe the main features of the landform shown in Photo below (4 marks)

Stick Cliff Photo Here

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Erosion Landforms**

**W C N =**

Stick photo here

Describe the appearance of the cliff in the photograph

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Explain how the wave cut notch has formed** (include the following words)

**abrasion hydraulic action hitting high water mark**

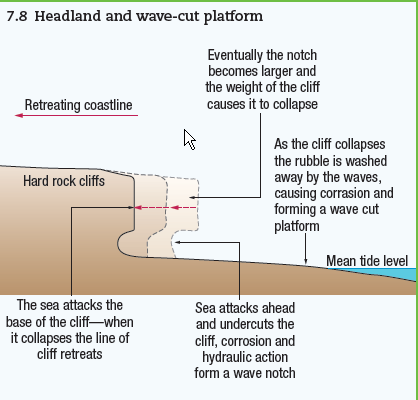
**Low water mark waves**

|  |
| --- |
| The waves strike the rock/cliff |
| These processes undercut the rock/cliff causing a ***wave cut notch*** to form |
| Hydraulic action and abrasion wear away the rock |
| Erosion occurs between the high and low water mark |

**Erosion Landforms**

**W C P =**

As erosion continues, the wave cut notch becomes deeper and eventually the material above the notch will collapse. If this is a cliff line, then the cliff will retreat inland. This will leave behind a platform of hard rock that was once part of the cliff but is no only exposed at low tide.



**Use annotations on the photo below to explain the formation of a wave cut platform**

Stick WCP Photo here

**Erosion Landforms**

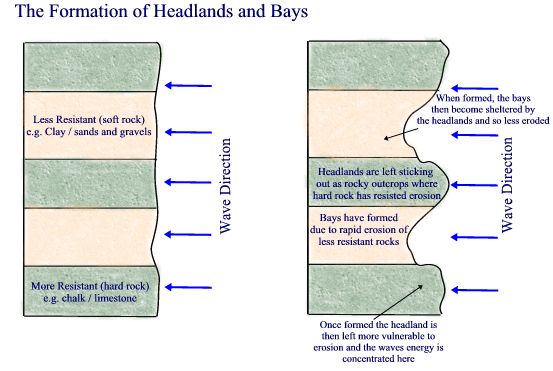
**Bay =**

**Headland =**

Box 1 shows a stretch of coastline that is described as **discordant**, meaning the bands of hard and soft rock run perpendicular to the coast (at 90o).

Over time erosion will change the shape of this coastline. Draw the shape of the same stretch of coastline after 100 years of erosion.

**Box 1 Box 2**

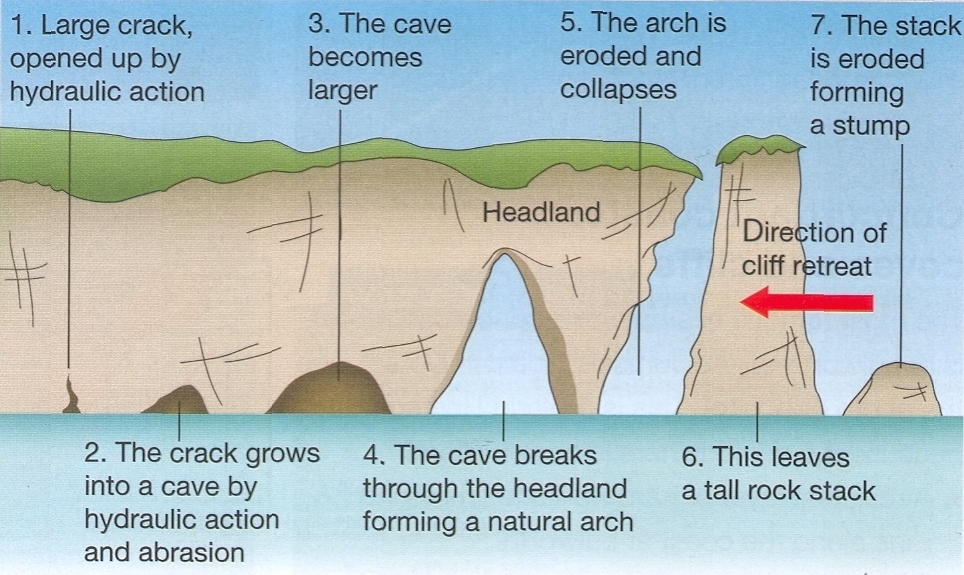


Describe the changes to the coastline:

Explain why you think these changes will occur:

**Erosion Landforms**

**C A S S =**



**Complete the following questions:**

1. Where are caves, arches, stacks & stumps likely to form along a coastline?
2. Why are caves, arches, stacks & stumps likely to form at these locations?
3. What sort of rock type is needed for caves, arches, stacks & stump formation?
4. Why might some caves not form an arch?

**Describe and explain the features of coastal landforms resulting from erosion**

Wave cut notch

Wave cut platform

Bay and headland

Cave, arch, stack and stump

Create a revision activity for one or more of the above erosional features

(crossword, card sequencing, diagram exercise, cartoon sequence, animation)

**Coastal Transportation**

Coastal environments can be described as *dynamic*; they are continuously changing. It is not only erosion that causes these changes but the movement of material as well: transportation.

**Task**

The four methods of transportation are identified below.

Draw a diagram for each transportation method and explain why it occurs. This could refer sediment size or energy levels required.

|  |  |  |
| --- | --- | --- |
| **Traction** |  |  |
| **Saltation** |  |  |
| **Suspension** |  |  |
| **Solution** |  |  |

What are the two factors that will influence which of the above transportation methods is likely to take place?



**Longshore Drift**

Longshore drift is …

**Ingredients for Longshore Drift**



**Sequencing Longshore Drift**







**Coastal Deposition**

* To deposit means …

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* For deposition to occur what must already be happening?

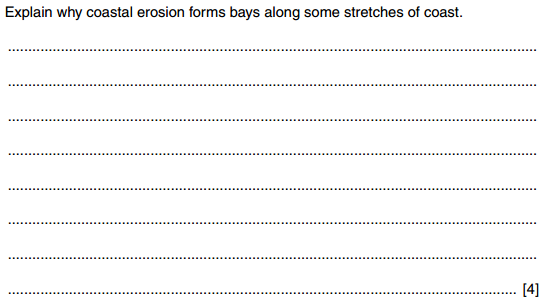
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* For deposition to occur what must change?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Identify four reasons why this would occur

**Exam Questions**



**Depositional Landforms**

1. **Spit**

A spit is ….

Describe the appearance of Hurst Castle Spit

Using your map skills and knowledge of longshore drift, explain how Hurst Castle Spit is formed.

1. **Beach**

A beach is ….

Where does beach material come from?

What are the features of a beach?

Sand Dunes

**Mangrove Swamps**

***What are Mangroves and where are they?***

Mngrvs (gnrlly) r trs nd shrbs tht grw n sln (brcksh) cstl hbtts n th trpcs nd sbtrpcs.

Thy r fnd n ntrtdl zns lng strs nd mrn shrlns.

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Thy fc prblms f frqnt sbmrsn, sln nvrnmnt tht trs nd shrbs gnrlly cnnt srvv nd lck f xygn.

Dffrnt plnts hv dffrnt wys f dlng wth ths prblms

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**How mangroves adapt to their environment**

* **Salty conditions**
* **Lack of oxygenated waters**
* **Nutrients**

**What are the benefits of mangroves forest?**

Watch video and read through the BBC article



**Coral Reefs**

What is coral?

What is needed for it to form?

Where does it form (distribution)?

Threats to Coral Reefs

**Coastal Opportunities**

1. **Identify** **/ describe** three opportunities coastal environments offer



1. **Explain** these three opportunities



1. State three **located examples** where these coastal opportunities exist



**Exam Questions**

Describe and explain the conditions required for the development of a coral reef (5 marks)

For a location you have studied, explain the opportunities the coastline presents (7 marks)

**Coastal Hazards**