Geography Transition Work 2025

Year 12 Geographers! We are very glad you have chosen to study A Level Geography and we look forward to starting the course with you in September. Hopefully you are ready to get started on a fantastic A-level course where you will have the chance to really enhance your understanding of the world around you. The work in this booklet is designed to help you make the best possible start to the course, please complete it ready for your first Geography lesson in September. So that you can see how useful this work will be (and so you can follow relevant events in the news), it is important that you are aware of the topics you will cover as part of the A-level Geography course. These are shown in the table below:

Course Topic	Overview of what you will study:
Tectonic Processes and Hazards	The distribution and causes of volcanoes, earthquakes and tsunamis, how to predict and manage them, and specific recent events.
Landscape Systems, Processes and Change (Coasts)	Coastal processes and landforms, coastal ecosystems, climate change and sea level rise, storms and flooding, and managing coastal areas.
Water Cycle and Water Insecurity	Where water comes from, areas of water surplus and water scarcity, issues surrounding sustainable use, inequality and management
Carbon Cycle and Energy Insecurity, Climate Change Futures	Where carbon energy sources come from, energy supplies and politics, sustainable use, carbon emissions, global warming, and alternative energy sources.
Globalisation	Our shrinking world and increasing interconnectedness, industry and its changing locations, de-industrialisation and the post-production countryside, the role of TNCs and globalisation's winners and losers.
Shaping Places (Regeneration)	Culture, sense of place and identity. The decline of areas and the socio-economic consequences (including indicators of deprivation). Subsequent rebranding, reimaging and investment, and the success and failure of projects from the perspective of different stakeholders.
Superpowers	International and national geopolitics, focusing on the past, present and future role of the USA, the BRICs (Brazil, Russia, India and China) and the UK (the British empire). The types of soft and hard power countries (military, economics and culture).
Global Development (Health, Human Rights and Intervention)	The distribution, indicators and reasons for development and development gaps (between and within countries), particularly focusing on health and human rights, and the resolution of using interventions such as military force/presence, aid and charity.

To help you to prepare for the start of the A Level Geography course we would like you to complete a few tasks. These tasks are split by Human and Physical Geography as you will have specific Human and Physical classes at A Level, taught by specialist teachers. The first Human Geography topic you will do is Globalisation and for Physical it is Coasts. Please complete the following tasks:

1. Task 1: Research and complete the key terms list for the Globalisation topic
2. Task 2: Research and complete the key terms list for the Coasts topic (we will continue to add to these key terms lists when you start the course in September)
3. Task 3: Read and highlight geographical articles.
4. Task 4: If you have NOT studied the Coasts topic at GCSE please complete the Additional Coasts tasks.

Task 1 Globalisation Key terms:

Enquiry Question 1: What are the causes of globalisation and why has it accelerated in recent decades? **Key Idea 1** Globalisation is a long-standing process which has accelerated because of rapid developments in transport, communications and businesses **Key Idea 2** Political and economic decision making are important factors in the acceleration of globalisation. **Key Idea 3** Globalisation has affected some places and organisations more than others.	
Key Term	**Definition**
Globalisation	
Trans National Corporations (TNCs)	
Trade Blocs	
Glocalisation	
Virtual Spaces	
Social interconnectivity	
Gross Domestic Product	
Emerging Economies	
Budget airlines	
Remittances	
Interdependency	

Spatial division of labour	
Intermodal containers	
Shrinking World	
Leapfrogging	
Foreign Direct Investment	
IMF	
World Bank	
WTO	
BRICs Group	
New Development Bank	
Offshoring	
Foreign Mergers	
Foreign Acquisitions	
Transfer Pricing	
Free market liberalisation	

Trickle down	
Privatisation	
Sovereign wealth funds	
Business start ups	
Trade Blocs	
Tariffs	
NAFTA	
Special Economic Zones	
China’s Open Door Policy	
Offshoring	
Outsourcing	
Global Production Network	
Reshoring	
Least developed countries	
Switched Off countries	

Task 2 Coasts Key terms:

Enquiry Question 1: Why are coastal landscapes different and what processes are causing these differences?

Key Idea 1 The coast, and wider littoral zone, has distinctive features and landscapes.

Key Idea 2 Geological structure influences the development of coastal landscapes at a variety of scales.

Key Idea 3 Rates of coastal recession and stability depend on lithology and other factors.

Key Term	**Definition**
High energy environment	
Low energy environment	
Lithology	
Morphology	
Submergent coast	
Emergent coast	
Concordant Coast	
Discordant Coast	
Dalmatian coastlines	
Haff coastlines	
Littoral Zone	

Backshore	
Nearshore	
Offshore	
Geological structure	
Terrestrial processes	
Estuarine coasts	
Coastal plain	
Permeable	
Impermeable	
Differential erosion	

Task 3 Read and highlight geographical articles

In A Level Geography we will often use the following synoptic themes (think of these like categories). We would like you to read the two articles and using three different colours highlight examples of the synoptic themes outlined below.

1. Players **(P)**	Who are the different players (individuals, groups and organisations, stakeholders) involved in geographical issues and decisions (interdependence, globalisation, systems)? Why do some players have greater influence than others (inequality)? This includes: international players (intergovernmental organisations (IGOs)), national and local government, large and small private businesses, transnational corporations (TNCs), pressure groups and non-governmental organisations (NGOs) as well as others in particular contexts.
2. Attitudes and actions **(A)**	Why do attitudes to geographical issues (identity) vary so greatly and how does this influence actions (policies and choice of strategy and management methods)? Influences on values and attitudes include identity, political and religious views, priority given to profit, importance of social justice and equality and attitudes towards the natural environment (conservation and sustainability versus exploitation).
3. Futures and uncertainties **(F)**	There are contrasting approaches when making decisions about geographical issues that will affect people in the future. These include business as usual, priority towards more sustainable strategies and radical alternatives (mitigation and adaptation). Choice of objective will affect both people and the environment in very different ways (risk, resilience and thresholds). The outcomes of choices made today are uncertain for a range of reasons, including scientific, demographic, economic and political uncertainty.

Players are individuals, groups, or organizations that influence or are affected by geographical issues and processes.

The opinions, priorities and actions of different players

Examples of what might happen in the future and why the future may be unpredictable.

Article 1 Physical Geography

Geography

www.curriculum-press.co.uk Factsheet 499

Topics: Climate Change Hazards: Climatic

The 2024 Atlantic Hurricane Season: A Signal of Climate Change?

by Dr Debbie Milton

This **Geography Factsheet**:

- Summarises standard hurricane theory.
- Describes the 2024 hurricane season.
- Explains significant physical changes in the context of climate change.
- Explores two case studies - Hurricanes Helene and Milton.
- Explains how climate change's contribution to extreme weather events can be scientifically quantified.

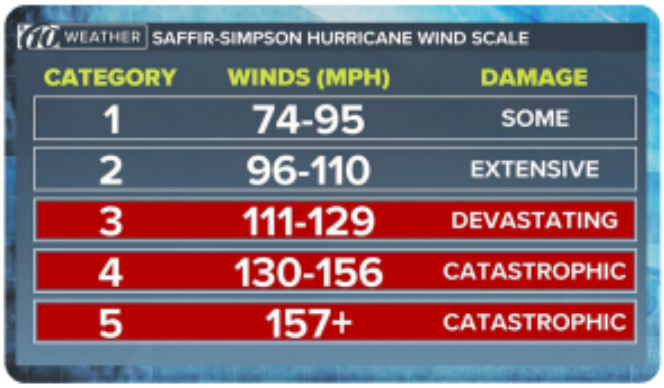
Hurricane Formation

Traditionally, hurricane formation has required the following conditions:

- They develop over ocean surfaces.
- Sea temperatures need to be at least 27°C at a depth of 70m.
- They occur between 5-20° north and south of the Equator, due to the Coriolis effect.
- Low wind shear is required.
- In the northern hemisphere there is a seasonal cycle from June-November, with a peak in September.

Hurricanes turn ocean heat into kinetic energy as they rotate and travel from their source region across oceans. They decay either because their path takes them away from the latitudinal spin effect and tropical temperatures, or sometimes when they make landfall, they immediately start to lose energy as they are no longer supplied with heat and water from below. Hurricane strength is measured on the Saffir-Simpson hurricane scale (see **Figure 1**). Recently, increasing hurricane strength has led to an extended Saffir-Simpson scale being proposed.

Figure 1 Saffir-Simpson hurricane scale



Source: wtsp.com

Ocean temperatures are now at a record high (see *GeoFactsheet 485, Global Extreme Weather: 2023, a Year that Confirmed Climate Change?).* Hurricanes have more energy and are therefore more erratic and dangerous. If their paths make landfall, then wind and flood damage can cause huge damage to communities living in their way (see **Table 1; Figure 2**).

Table 1 Hazards associated with hurricanes

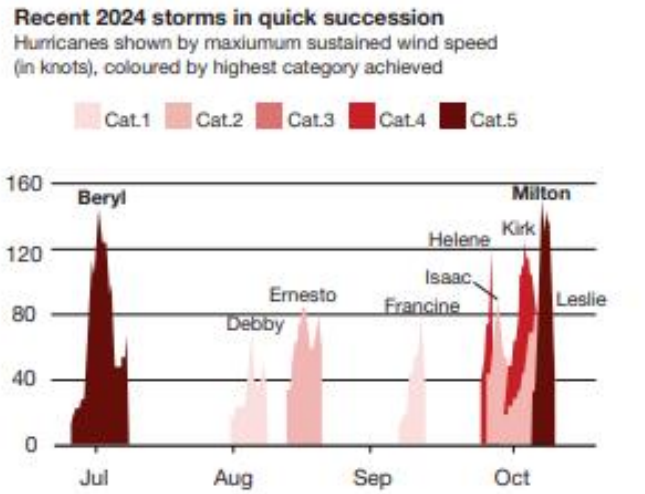
Hazard	Description
Storm surges	Elevated sea levels due to strong winds and low pressure, causing coastal flooding.
Flash floods from heavy rain	Sudden, intense rainfall can overwhelm drainage systems and cause rapid flooding.
River floods from water passing through drainage basins and onto floodplains	Overflow of rivers due to continuous heavy rainfall can result in widespread flooding in adjacent areas.
Wind damage	Winds reaching up to 150mph can severely damage structures, uproot trees, and create dangerous flying debris.

Figure 2 Damage caused by Hurricane Milton October 2024

Major highlights of the 2024 Atlantic hurricane season

During the 2024 Atlantic hurricane season (see **Figure 3**), some significant changes were noted, compared to the general historical record. As of early November, 11 hurricanes had developed in the Atlantic compared to the 30-year average of 5.5. Hurricane Beryl (July 2nd) was the earliest ever recorded to become a Category 5 as well as the strongest recorded in June and July in the Atlantic Basin. There followed an unusual period of inactivity thought to be due to a high-pressure Saharan system that suppressed cyclone development in the eastern Atlantic. Although Hurricane Debby only reached Category 1 on 5th August, it dropped vast amounts of rain due to it slowing down over Florida and causing widespread flooding. At the season's peak in September/October, Florida experienced two major hurricanes in quick succession – Helene and Milton – each setting particular records of intensification and damage caused. It was also the first time that three hurricanes occurred simultaneously across the Atlantic so late in the season (October 2024; see **Figure 4**). Collectively, the hurricanes in 2024 caused at least 376 deaths and nearly $190 billion in damages. Most of the fatalities were due to Beryl and Helene, whilst most of the damage was done by Helene and Milton. (The death toll may be underestimated due to long term knock-on health effects, perhaps over decades).

Figure 3 Atlantic hurricanes in 2024



Source: *US National Hurricane Centre*

Figure 4 Three hurricanes: Milton, Kirk and Leslie - in the Atlantic, October 2024

Source: *NASA*

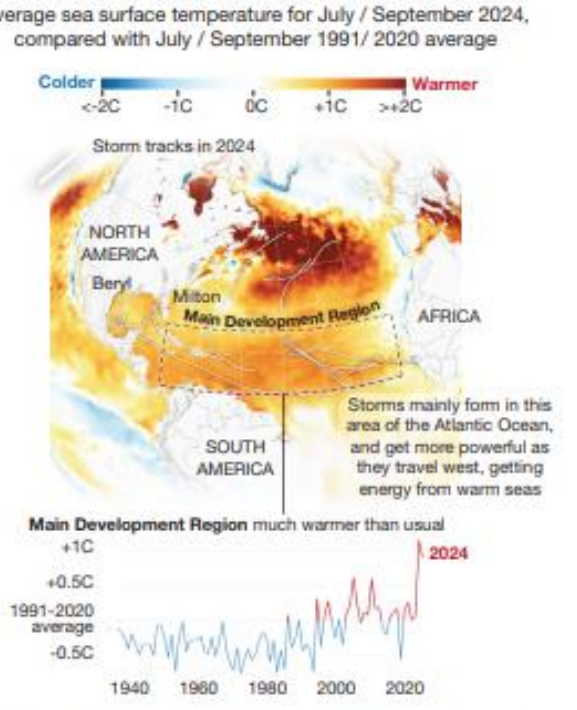
Discussion 1

Do you agree that death statistics should include those associated with the event over the following ten years? What would be the purpose of doing so? What would be the difficulties?

Expected physical changes to hurricanes from climate change

The Atlantic Ocean and connected seas have been warming over the past decades, due to climate change and a natural weather pattern known as the Atlantic Multidecadal Oscillation (see **Figure 5**). It is periodically also affected by El Nino/La Nina cycles. For every 1°C increase in air temperature, the atmosphere holds 7% more water. With both air and sea significantly warming, one might expect to see the following types of change that were displayed in the 2024 Atlantic hurricane season.

Figure 5 Warming of the Atlantic Ocean



Source: *ERA5, C3S/ECMWF, US National Hurricane Centre. October 2024*

1) **Longer season**
Because oceans have warmed, normal June temperatures are now being recorded in April, causing the hurricane season to begin earlier. It is likely that it will also last for longer. Hurricane Beryl was the first major hurricane of the 2024 Atlantic hurricane season, as well as being the first Category 5 ever recorded in June.

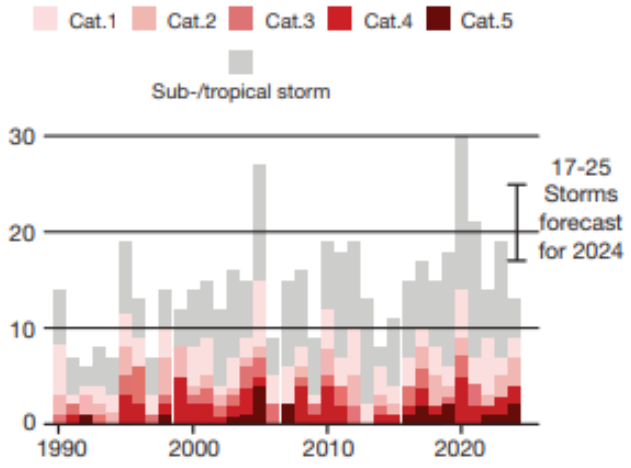
2) **Rapid intensification**
Rapid intensification is defined as a 35mph increase in wind speed in 24 hours. Hurricane Milton strengthened by 90mph in 24 hours. Ocean temperature controls the maximum intensity that a hurricane can reach. Increased sea temperatures mean that more energy is available to convert into a hurricane. The time needed for tropical storms to intensify into powerful hurricanes is decreasing. Beryl, Helene, and Milton all strengthened from fairly weak hurricanes into major hurricanes within 12 hours or less. The major driver of this intensification was exceptionally warm water in the Gulf of Mexico. Four out of five hurricanes became major ones when the historical average is one in four.

3) **Stronger peak intensity**
Between 1979 and 2017, data shows that peak intensity of hurricanes increased by 6% per decade. This means that storms are 25% more likely to reach 110 mph (which classes them as a major Category 3 hurricane) than 40 years ago.

4) **Numbers of hurricanes in a season**
The average number of Atlantic hurricanes per season is seven, with three of these continuing to become either Category 4 and 5, and an **Accumulated Cyclone Energy (ACE)** of 72-111. The 2024 data shows that there have been 11 hurricanes to date, four of which became major ones, with an ACE of 147 (see **Figure 6**).

Numbers in 2024 may have been affected by a La Nina year. This usually increases the numbers of hurricanes. El Nino conditions often create too much wind shear for systems to develop their necessary vertical structure.

Figure 6 Annual changes in the number of Atlantic hurricanes



Source: *US National Hurricane Centre, October 2024*

5) **Slowing down**
Despite hurricanes gaining in strength, movement along their paths over oceans and land is slowing down by an estimated 17-20% since 1900. Winds are driven by temperature gradients – the steeper the gradient, the faster the winds. The Arctic is warming four times faster than the global average and so the temperature difference between here and the tropics is decreasing, causing winds to slow. Hurricane Debby, in August 2024, was a particularly slow moving Category 1 hurricane.

6) **More rain associated with a hurricane**
If hurricanes are moving more slowly, or even stalling over a location, they will release their moisture for a longer time and cause days of inundation. Hurricane Debby caused catastrophic flooding as it moved north from Florida's Gulf Coast on 5 August 2024 into Georgia and South Carolina. Its effects reached as far as Quebec, creating that province's costliest natural disaster.

7) **Churning waters offer less protection**
When hurricanes are over the oceans, they cause mixing of warm surface layers and deeper cooler water, thus having a **negative feedback** on the growth of the hurricane system above. With warmer deeper water, this mixing is suppressed. There is a smaller cooling effect at the surface and so storm development and intensity can continue.

8) **Hurricanes are changing track**
Globally, hurricane paths are changing one degree of latitude per decade. Risk assessment and the need to adapt and mitigate will affect communities under new hurricane tracks.

9) **Sea level rise**
Thermal expansion and increased meltwater entering the oceans are causing sea levels to rise. Therefore, storm surges will have more impact as a hurricane makes landfall. Globally, storm surges have risen by 3% per decade. Higher water levels will inundate areas further inland.

Activity 1

Draw a flow diagram using the nine points above to show how physical changes in hurricanes are linked. Start with "Exceptionally warm sea water".

Case Study 1: Hurricane Helene

Helene made landfall as a Category 4 hurricane on September 26th at Florida's Big Bend, the second major hurricane after Beryl in the 2024 season. It was a large fast-moving system that intensified from Category 1 to Category 4 in 24 hours. Its speed limited the amount of rainfall dropped over Florida but nevertheless, coastal flooding occurred along the entire west coast of Florida with all beaches suffering some erosion. 95% were overtopped, moving sand from the dunes inland. This not only blocked roads but by lowering the height of the dunes made them more vulnerable to future storms.

As Helene progressed north it rapidly weakened and released its rain, badly affecting the south eastern USA. North Carolina received record rainfall amounts in places. Total rainfall in the SE region was equivalent to the flow of Niagara Falls for 1.75 years. Heavy rain and high winds caused river flooding, flash floods and landslides. Land became saturated and surface runoff from the Appalachian Mountains worsened the impact of flooding (see **Figure 10**).

Florida underwent one of its largest evacuations in years and yet the death toll was the greatest in the USA since Katrina in 2005. Billions-worth of damage was done to property and infrastructure and **Figure 7** shows the power loss under the path of Hurricane Helene. The clearance of debris was still in its early days when Hurricane Milton began to form, creating greater urgency to clear it to ensure that debris did not cause excess damage when picked up by Milton. With so many deaths and so much destruction, residents needed more support than perhaps was available and some journalists suggested that the hurricane influenced people to vote against the government in the presidential election in November 2024.

Figure 7 Helene's track and the power outages beneath it

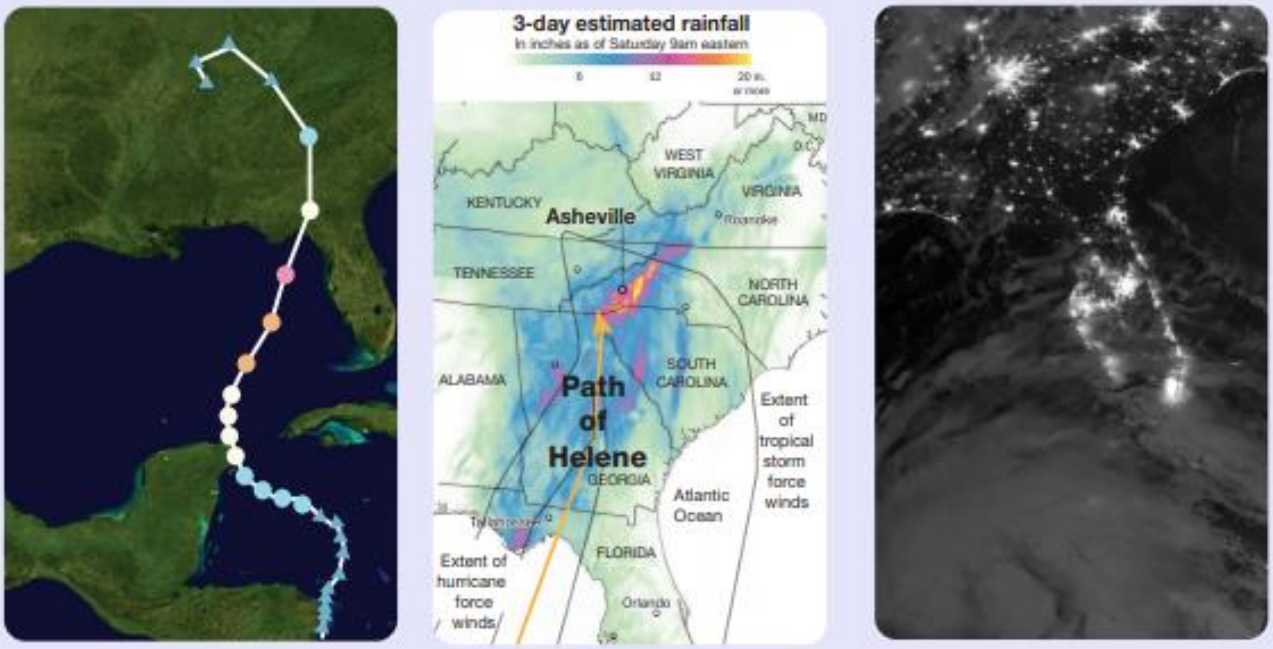


Table 2 Data for Hurricanes Helene and Milton

	Helene	Milton
Lowest pressure	938mb	897mb
Maximum windspeed	140mph	175mph
Saffir-Simpson Category	4	5
Period of intensification	1 to 4 in 24 hours	1 to 5 in 18 hours
Highest rainfall mm	825mm	480mm
Maximum storm surge m	3m	3m
Deaths	232	16
Damage costs	Estimates vary widely ($30-90 billion)	

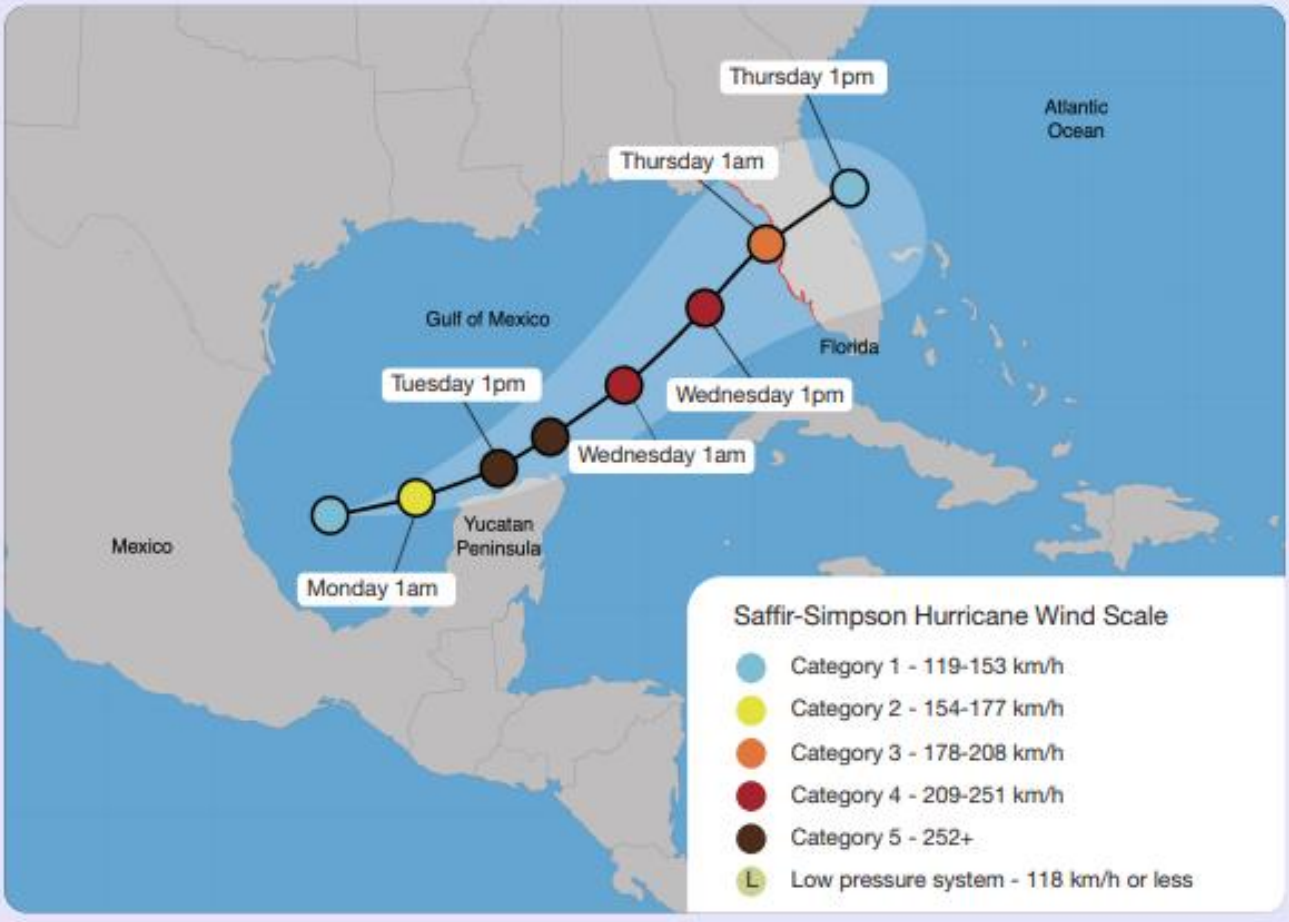
Case Study 2: Hurricane Milton

In the summer of 2024, surface and subsurface waters in the Gulf of Mexico were unusually warm (31°C), and this suppressed upwelling of colder water and maintained energy for the developing hurricane system. With little wind shear Hurricane Milton was able to intensify explosively from Category 1 to 5 (175mph) in less than 24 hours on October 6-7. It was rare for a Category 5 to form over the Gulf (see **Figure 8**). It was the fifth most intense Atlantic hurricane on record and the third fastest intensification. It tracked slowly eastward across the Gulf so it could pick up more energy from the surface and maintain its strength.

However, it had become a Category 3 hurricane when it reached landfall at Florida on October 9th. This made it the second major hurricane to hit Florida within a fortnight and the third in 2024, a record. It was also the strongest recorded hurricane in the world during 2024.

Its strength dropped quickly due to wind shear which interfered with the central eye structure and so it made actual landfall as a Category 3 hurricane. Once it passed over Florida and out on the Atlantic it was a Category 1. Many towns saw several months' rainfall occur in a few days. Seven million people live within the evacuation area and most obeyed the warning to leave. Three million properties were left without power.

Figure 8 Track of Hurricane Milton



Discussion 2

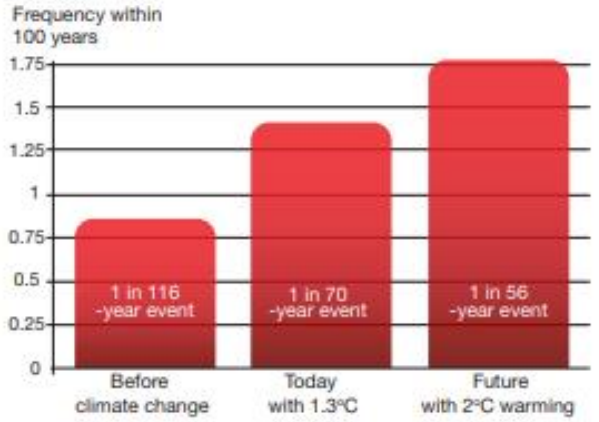
Why did Hurricane Helene cause more deaths than Hurricane Milton? (Refer to **Table 2** and **Figures 7** and **8**).

Is Climate Change to Blame?

Warmer temperatures allow air to hold more moisture and change large scale atmospheric circulations that will alter wind patterns. In doing so, extreme weather events may shift to places which have not experienced them before, or the frequency, intensity and persistence may change. With greater heat there is more climate instability and more disturbances within the atmosphere that seed extreme weather. Whilst there is uncertainty over future intensity and frequency of hurricanes, it is likely that there will be a greater proportion of major hurricanes (Category 3 or higher), and the impacts will be worse due to the greater energy unleashed.

Attribution science is a new branch of climate science. Scientists run models using vast amounts of data related to human pollution levels and past weather events. It enables them to state with some reliability the contribution that climate change has made to recent weather events. It quantifies how much more deadly and expensive extreme weather events have become due to human-induced climate change. Attribution science predicts that hurricanes as intense as Hurricane Helene are now 2.5 times more likely to occur than in pre-industrial times. It also predicts shorter recurrence intervals of extended periods of rainfall to be expected with different degrees of warming (see **Figure 9**).

Figure 9 Expected frequency of major rainfall events linked to climate change



Source: *World Weather Attribution*

Analysis of Helene's data shows:

- Overall, there was 10% more rainfall than expected. In parts of North Carolina, it was more than 50%. This level of rainfall that led to catastrophic flooding in the Appalachians (see **Figure 10**) has decreased from a 1 in 115-year event to a 1 in 70-year event today as a result of climate change.
- The Gulf of Mexico was 1.4˚C warmer due to climate change. The high sea temperatures that powered Hurricane Helene were made 200 to 500 times more likely by climate change.
- Windspeeds were 11% greater due to climate change. Levels of destruction grow by 50% for every 5% increase in windspeed, so Helene's destruction was doubled.
- It is hurricane winds that drive storm surges, so it can be inferred that the destructive surge from Helene was made worse by climate change, alongside sea level rise, also a consequence of global warming.

Figure 10 Floods in Marshall, North Carolina

Source: *nccf.org*

The warm waters of the Gulf that fed Milton to a maximum Category 5 hurricane whilst still offshore in the Gulf were up to 400-800 times more likely to have developed due to climate change. Otherwise, it would have made landfall as a Category 2 instead of a Category 3 storm.

Extreme weather events impose huge costs to lives, health, and finances across the world. Many people cannot afford to insure themselves against weather events. Even the wealthy in Florida and California, the states most vulnerable to changing climate hazards such as hurricanes and wildfires, have faced doubled house insurance costs. Many insurance companies are no longer offering policies as the frequency and scale of impact is unprofitable. The Federal Emergency Management Agency (FEMA), the US government agency that supports communities after disasters, is running out of money.

Quick Question 1

What options do people have if they cannot buy insurance?

Conclusion

Climate change has worsened the impact of hurricanes in three ways.

1) Increased ocean temperatures give extra energy to storms. Consequently, hurricanes undergo rapid intensification and stronger wind speeds.
2) Rising sea levels produce higher storm surges and more flooding inland.
3) One degree rise in temperature allows the atmosphere to hold 7% more water. Greater and more intense rainfall is to be expected.

Most people now accept a scientific link between climate change and human-induced rising temperatures. However, this does not mean that they are prepared, or feel able, to meet the costs of the urgent need to reach **net zero**. But until greenhouse gas emissions are controlled, people need to be prepared for more extreme events and to experience them for the first time as boundaries and physical conditions change.

Geo Factsheet

www.curriculum-press.co.uk # 415

'Switched-Off' from Globalisation: Cuba – A Case Study

Cuba is a nation state and the largest of the islands in the Caribbean Sea, situated just 90 miles from Florida, USA. It has been ruled by the Communist dictatorship of Fidel and then Raul Castro since the Cuban Revolution in 1958.

Figure 1 Map of Cuba

The Influence of Physical Geography

The country is located in tropical latitudes in the Northern Hemisphere, (**Figure 1**) close to a destructive plate boundary (North American and Caribbean Plates). Consequently, the country can be classed as being a multi-hazard zone as it is also in the Caribbean hurricane belt. Surrounded by the warm waters of the Caribbean Sea, it has high levels of annual rainfall (1000–2000mm) which combined with its mixed geology, mountainous topography and widespread occurrence of limestone, makes the landscape prone to experience landslides and rapid erosion. At the same time, there are benefits of Cuba's global position; the tropical climate and fertile volcanic soils give rise to a range of ecosystems and high-quality agricultural land. The erosion of limestone has created dramatic Karst scenery and mountain landscapes and contributes to the turquoise waters and white powder sand beaches on the north coast at Varadero and Cayo Coco. Cuba also has some of the most pristine coral reefs and beaches in the world thanks to limitations imposed on travel to the island by the communist government. It has used these natural advantages to develop a tourist industry which, while relatively modest in scale, has the potential for further development.

Geo-Politics and the Cuban Revolution

Cuba has desirable agricultural land and coastal sites for industrial development. The island is in a strategic position as it has a long coastline and lies at the 'entrance' to the Gulf of Mexico. It is also close to the USA, currently the world's leading superpower. During the first half of the 20th century, Cuba was controlled by a right-wing dictator who sold off much of the country's industries, agricultural land (particularly sugar cane plantations) and tourist resorts to US companies and investors. These early agricultural TNCs paid and treated workers poorly. The country experienced economic leakages and the government was also corrupt, not reinvesting profits from foreign firms into social development. A left wing, Communist revolution, led by Fidel Castro and Che Guevara, occurred between 1953 and 1958, and in January 1959, they overthrew the government after a protracted guerrilla war.

The influence of Communism and Socialism in Cuba and the rest of the world in the latter 20th century

The 1960s saw a 'Cold War' between the bipolar superpowers of the USA (Capitalist Politics) and the USSR (Communist Politics). The space race between them was particularly important, not only in showing the world who was the most advanced and powerful country, but also in developing nuclear, long range missiles. Due to both its politics, and investment and financial support from the USSR, Cuba became an ally of the USSR. During 1962, the USA discovered USSR nuclear weapons on Cuba. It ordered a naval blockade on Cuba and threatened war, as did the USSR in retaliation. This pushed the world to the brink of nuclear war until both sides backed down. The USA then decided to place a trade embargo on Cuba and no country that considered itself an ally of America could trade with Cuba. Any country doing so (such as other Communist nations) was not able to trade with the USA and their trading partners.

In the late 20th century, Communism started to collapse, culminating in the fall of Communist governments across the traditional party stronghold of USSR and a number of Eastern European countries. These communist countries had been key to enabling Cuba to have some level of financial support during the 1960s-80s. As crop failures occurred in west-central USSR (now Ukraine) and overspending on the military and the space race had an impact on the USSR's economy, other countries they supported, such as Cuba, lost their financial support, food supply and a vital trading partner. Eventually, the disgruntled public

across Eastern Europe and some states in the USSR, peacefully rebelled against Communist rule. The system collapsed in a domino effect across those nations after the fall of the Berlin Wall in 1989, reunifying East and West Germany and destroying the divide between left and right, known as the Iron Curtain.

The break-up of the USSR into 14 separate countries (Russia, Ukraine, Belarus, Kazakhstan to name some of the larger territories), with many pursuing capitalist futures meant no support for Communist Cuba. This heightened the effect of the US trade embargo leaving Cuba very much alone.

Figure 2 Poorly maintained buildings and fading pastel coloured facades in Havana, and a renovated 1950's American car

Figure 3 The presidential Neo-classical building in constant disrepair, fronted by colourful 1950s American Cadillacs

The effect of the US trade embargo on Cuba, leading to the country being increasingly switched off from globalisation

Being 'switched off' from an increasingly globalised world means a country may have physical geographical constraints that reduce its connectivity. Cuba is well located yet is switched off in a number of cultural and economic ways. A government may pursue an isolationist policy (reducing contact with other cultures and political systems). Cuba has done this by severing ties with some western powers such as the USA as well as monitoring and limiting internet use and social media access. Reduced connectivity and mobile phone contact lessen a country's Globalisation Index score. A country may also be 'switched off' by not trading with a range of countries, nor entering into trade bloc agreements. Cuba could well have been incorporated into NAFTA given its proximity to Mexico and Cuba and friendlier ties with Canada. However, its relationship with the USA prevents this.

Specifically, Cuba has been affected in the following ways:

- The trade embargo reduced the number of Cuba's trading partners. Countries tied politically and economically to the USA and its allies would lose a powerful alliance should they defy the embargo. Any countries that continued economic or political ties with Cuba were seen, in the eyes of the USA government, as endorsing Communism and going against the democratic values of the west and capitalist politics of America.
- Countries that did trade with Cuba were largely Communist states, particularly the USSR and later China, both of whom provided resources to the country. However, the collapse of Communism in USSR in 1989 and a decade of famine and recession before that reduced the support Cuba received from this ally, and the increasing difference in Communist ideology between China and Cuba reduced support from the East Asia.
- The lack of trade partners had multiple effects. The overwhelmingly negative effect was to reduce access to natural resources and a wider range of food commodities. During the 1980s and early 1990s, once the support of other Communist nations declined, food shortages were regular, and rationing needed to be enforced.
- New and updated technologies were not easily imported and, with a reduced GDP due to limited exports, importing technology proved more difficult. As a result, the population had limited access to improved methods of transportation and access to mobile and internet connections. A lack of disposable GDP resulted in low levels of investment in housing and infrastructural improvements. Cuba's socialist politics meant that a large percentage of GDP was committed to education and free healthcare, which proved successful, with some of the highest literacy rates and life expectancies across the Americas (in 2012 Cuban literacy was at 99%, above the USA and life expectancy stood at 79, one year more than the USA). Conversely, the amount of GDP committed to these aspects of social welfare, combined with the effects of the trade embargo left the government with little to invest in transport systems and housing. Consequently, it is still difficult for many Cubans to travel widely to access potential employment, and many live in poor standard housing, without running water and with intermittent electricity supplies, even in Havana.
- Poorly maintained housing and business properties are ubiquitous across Cuban cities. However, the age and range of architecture, along with the faded (often pastel) colours and eroded facades due to the lack of investment in maintenance has given a number of cities a unique character. In Havana (see **Figures 2** and **3**) the architectural landscape is largely made up of Spanish colonial Neo-Classical (modernised versions of Greek and Roman buildings) and Baroque buildings from 1750–1850, along with Art-Deco styles showing the influence of American architectural trends during the early 20th century when Cuba was allied to the USA. In Cienfuegos, which was a major French trading post when French and Spanish colonists ruled the country, the styles are French Neo-Classical. The buildings in these cities were not removed and replaced by Communist Brutalist architecture as in parts of Europe, but neither were they maintained.

Consequently, Havana, Cienfuegos and other urban centres are uniquely Cuban in their look; Instagrammable, crumbling, historic mosaics of faded pastel colours that have created a particular place identity. Havana and Trinidad both enjoy World Heritage Status (cultural) as a result of their architecture.

- The lack of imported transport technology meant that the population had to rely largely on vehicles imported from the USA before the revolution, such as 1950's Chevrolets and the General Motors Cadillac (see **Figure 2**). Over time commuters and taxi drivers alike have added spare parts from other vehicles to ensure their mode of transport remains in working condition, if not road worthy. Although unsafe, these cars are now an iconic image of Cuba due to their bright colours and retro-vintage status. They create some of the most popular Instagram images for today's travellers, ensuring a unique characteristic for this country.
- Many of these situations seem problematic. However, urban Cuba has gained a unique visual identity because it is, in a sense, preserved in time. As a result, this has made the country attractive to tourists.
- The natural environment was also well preserved for many decades after the Cuban revolution. The lack of connections with countries whose populations had the disposable income to travel meant that a range of ecosystems have been until recently very well preserved. The Isle of Juvetud (**Figure 1**), and beaches of Varadero and the Cocos archipelago have well preserved coral reefs, teeming with wildlife, and unspoilt, white sand beaches. The Bay of Pigs (named after a failed invasion there by the US army) is a huge wetland swamp and mangrove system (a wetland forest with trees that are highly adapted to saltwater conditions), untouched by tourism and development. It is still well protected and caiman alligators thrive there. Cuba has a diverse bird population with some endemics. Hummingbirds, vultures, parrots and other exotic species are common. This is largely due to the protection of forested areas and re-use of agricultural land which has reduced deforestation.
- During the 1980s, Castro's government realised that the combined attractions of a pristine environment, crumbling, photogenic urban landscapes and an interesting political history (made all the more intriguing by the iconic image of 'Che' Guevara – **Figure 4**) could provide the country with a potential income from tourists. It opened up borders to foreign tourists from some developed nations, including Canada, but not US citizens.

Figure 4 The often exploited images of Cuban revolutionary, Che Guevara

The image is displayed as a national icon on a parliamentary building. With globalisation, this image has been increasingly used to market t-shirts and posters to younger members of western society.

The Impact of becoming more connected over the coming decades.

'The world was getting smaller it seemed. Resultantly, it felt like to me, that everywhere was getting to be a little more like everywhere else. Everywhere that is, apart from Havana, Cuba'.

This excerpt from '*Cuba*' by Stephen Smith suggests a place that had not, during the 2000s, been homogenised by global culture in an increasingly connected world.

- The thawing of US-Cuba relations during 2014–2017 provided hope that the embargo would end. US president Barack Obama and Cuban ruler Raul Castro entered into negotiations to remove the embargo and encourage tourism between the countries. In August 2017, the first cruise ship brought passengers from Miami, Florida to Havana. However, Donald Trump replaced Obama as US President in 2018 and reversed these decisions. Relations are frosty once more.
- This may change with a change in politics likely in both countries in the coming years. During the 2000s and 2010s tourism has been increasingly embraced by Cuba and consequently developments to accommodate tourists are emerging in Varadero, Cayo Coco and in southern resorts such as updated and expanding hotel complexes and all-inclusive resorts with full facilities such as golf courses.
- Increasingly tourists are demanding access to the wetlands, coral reefs and beaches. This threatens the diversity created by being 'switched off' from tourism. There have recently been reports of high levels of plastic pollution, littering and fuel pollution in Cienfuegos Bay, near to the tourist hotspots of Cienfuegos and Trinidad. There is the ever-present issue of nutrients in sun-tan lotions washing off beaches into the Caribbean waters and potentially creating algal blooms atop of the coral reefs that are prominent around the island. This can block out light and cause the coral, an important breeding ground for many marine creatures, to die.
- The rise in power and production of new technologies in a number of Asian countries, particularly China, has meant that these countries are powerful enough to ignore threats imposed by America. Consequently, Cuba has now introduced mobile technology and Wi-Fi hotspots into its key cities. In Havana, people need to find a Wi-Fi hotspot to connect to the internet. The government screens the content and social media that people use, though doesn't entirely block connections with the western world.
- One of the main exports to many developing countries has been medical, with doctors to help with development, as in Venezuela.
- The increased connectivity with the west via social media means that younger generations are demanding western products, material goods, music and sports. Manchester United FC and Barcelona are now the most popular football teams in Cuba. US Hip-Hop is increasingly heard in Havana with artists like Kanye West very popular. In 2016 demand for western live music led to the government allowing the Rolling Stones to play the first ever gig in Cuba by a foreign band since the Revolution.

- Such western influences are desired by young Cubans. What may happen in future is a change in musical and artistic direction from salsa and ballet to rock, pop and hip-hop. Popular sports like baseball (an American import from before the revolution) may be replaced by soccer. Coca Cola is already the most popular soft drink in the country, and one would assume that other imports will follow, and that food and drink culture will be increasingly homogenised.
- The influx of tourists over time make it likely that buildings and transportation will be upgraded to accommodate the wealthier tourist. Catering more for the young, Instagram obsessed, budget traveller may be a better way of preserving the iconic look of these crumbling cities. The wealthy, tourists demanding 'creature comforts' will eventually see the cities of Cuba change. Will these improvements trickle down to the poorer urban communities? Often the few high-end hotels in the city are the last places to lose electricity during a grid failure. This suggests that while visitors will be looked after and tourism workers may benefit, the poorest may continue to suffer.

Cuba is still largely 'switched off' in contrast to its Caribbean neighbours but is becoming increasingly connected over time via tourism and the internet. It remains to be seen if it can retain its unique cultural and its built and natural characteristics with the onslaught of globalisation.

Key Words:

Switched Off – When a location is lacking global connectivity, due to reduced trade, technological, political links.

Globalisation Index – a method of measuring and presenting how connected a country is.

Communism – a type of politics that is often used by oppressive governments, that also aims to spread wealth equally across a population, not allowing for individual gain and provide elements of social welfare.

Capitalism – a type of economic politics pursued in the democratic world, but increasingly in oppressive countries such as China and Russia. Individuals can be entrepreneurial and there is freedom for people to earn based on their skills. Often creates large divides in wealth

Task 4 Additional Coasts tasks

There are 4 types of marine erosion. Find a detailed explanation of each:

Corrasion (Abrasion):

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Attrition:

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Corrosion (Solution):

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Hydraulic Pressure (Hydraulic Action):

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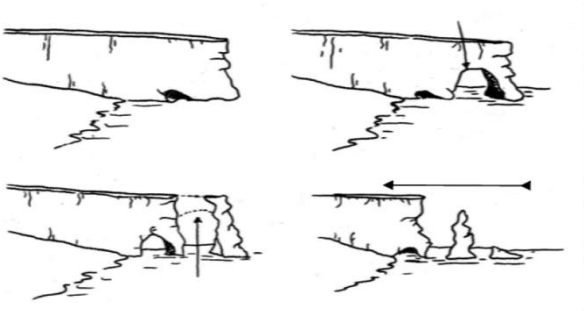
Once material is eroded it is transported along the coast in 4 ways. Find out what solution, suspension, saltation and traction mean. Write and draw a diagram of each in the boxes below.

Traction	Saltation
Suspension	Solution

When material is moved laterally (sideways) along the coast it is called longshore drift. Draw an accurate diagram of how longshore drift works, and write detailed labels to explain each step.

The above are all known as marine processes. This is because they are done by the action of the sea. Some processes occur on the coast that are not done by the sea. These are known as sub-aerial processes and includes weathering and mass movement. Try to find out about the type of weathering and mass movement that happens in coastal areas and create a detailed mind map in the space below:

Sub-aerial processes



Coastal erosion creates different landforms and features. Examples of these include: cliffs, caves, arches, stacks and stumps, and wave cut-notches and platforms.

In the space below, give a detailed description of how a stump is formed.

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Now explain the formation of a wave-cut notch and wave-cut platform. Add your own diagrams in the space below:

Explain, using diagrams, how headlands and bays form and change over time.

Headlands and bays can form when differential erosion occurs. Find out what differential erosion means:

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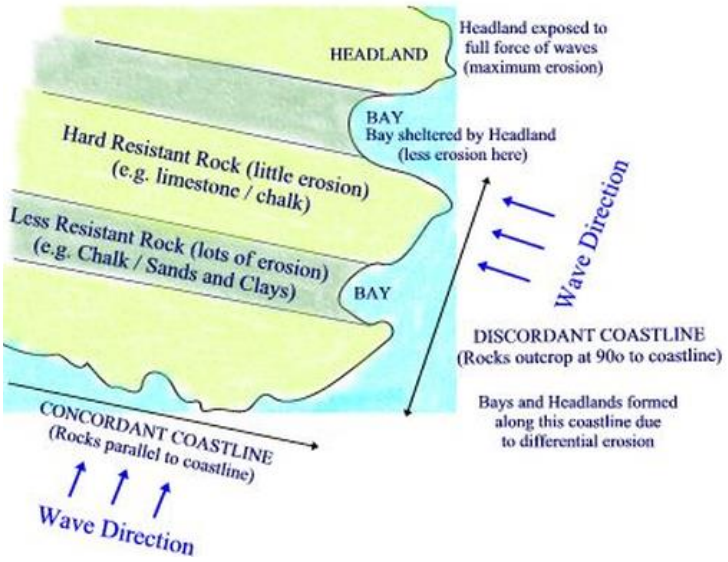
Differential erosion is clear to see on discordant coastlines (see diagram below). Explain in your own words how headlands and bays are formed on discordant coastlines:



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Headlands and bays can also form on concordant coastlines. Find out how this happens and explain in the space below.

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The following are depositional landforms created when the waves deposit sand in a certain way. Fill in the table below:

Sketch	**Short description and explanation**	**Example (name and location)**
Spit		
Recurved spit		
Double spit		

Offshore bar		
Barrier beach (also known as a bar)		