Fantastic and Forbidden Places

What do we mean?

There are many different definitions but fantastic and forbidden places are areas of the world that can trigger inspiration, intrigue, danger and excitement. Many have been shaped by nature, some created by humans. Everyone has places they consider to be fantastic; what are yours?

Las Vegas

Las Vegas is located in the south east of the Nevada State in the Nevada desert. It has a dry desert climate which makes it particularly difficult for humans. However, engineering of huge dams and diversion of surrounding rivers have enabled settlements to form. It was officially established as city in 1905 Las Vegas is also known as the 'city of sin' due to the number of casinos and bars that have been built in the area.

The fast population growth has put enormous strain on water and food resources. In 1972 the population was less than 300,000 but by 2010 it was more than 2 million

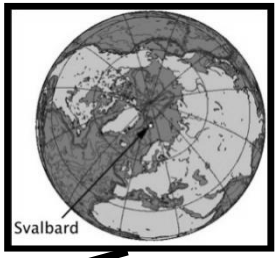
Death Valley

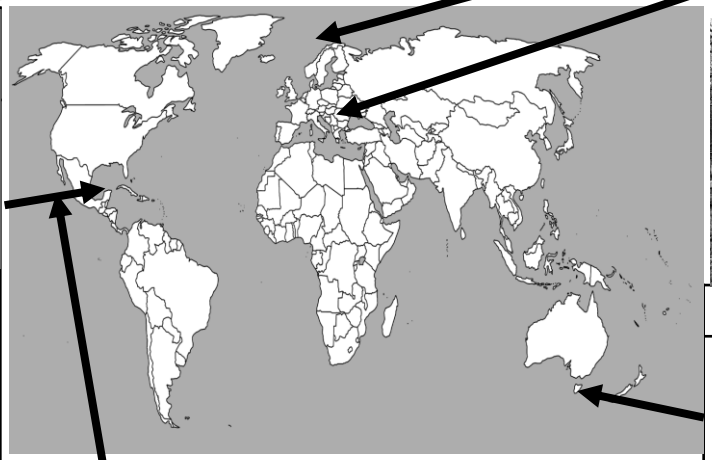
Death Valley is located in western USA in the state of California. It got its name from those people who crossed it during the Gold Rush as it is the lowest, driest and hottest valley in the United States. For many years scientists were baffled by strange rocks that appeared to have moved across the floor leaving trails behind the.
The mysterious moving rocks are also known as sailing stones. They move when ice and water build around and underneath the rock. This allows the wind to push them along the dry, cracked surface of the desert floor.

Arctic - Svalbard

Svalbard is a remote Norwegian Island located in the Arctic Ocean. The population of Svalbard is only 2600. Most people are employed in mining or tourism.

Due to its location, Svalbard experiences polar night in winter when there is no sunlight for 84 days. The sun stays below the horizon and creates a cold, dry arctic desert. It is so cold because it has very little solar radiation. The area is a breeding ground to many birds, polar bears, reindeers and marine mammals.





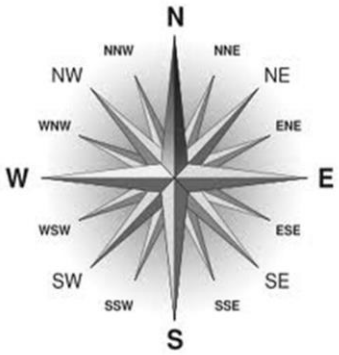
Chernobyl

Chernobyl is located in the Ukraine.
The disaster was a catastrophic nuclear accident that occurred on 26 April 1986 at the Chernobyl Nuclear Power Plant in Ukraine which was under the jurisdiction of the Soviet Union. An explosion and fire released large quantities of radioactive particles into the atmosphere, which spread over much of the western USSR and Europe.
Since the disaster it has become a no go zone. Populations of people were forced to move away due to the contamination. Nature has since reclaimed the land affected and some species of animals such as Eurasian lynx, wild boar, grey wolf, elk, red deer, moose, brown bear, turtle, have thrived in the absence of humans.

Totem pole and the tooth fish

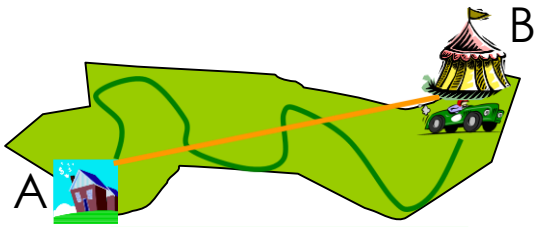
The Totem Pole is a sea stack at popular amongst rock climbers in the Tasman National Park, Tasmania off the south coast of Australia. It is part of the many miles of rugged coastline and diverse forest ecosystems, which contain several species of rare plant. The park also includes many small islands and the southern end of the park has some of the highest and most spectacular cliffs in Australia. The National Park is a very popular area for tourism as it is within a few hours drive of the main city on the island, Hobart.
The overfishing and conservation of the endangered Tooth fish are also linked to the totem pole as activists from Greenpeace have used the pole to try and raise public awareness about the fishing industry in this area.

The Compass Rose

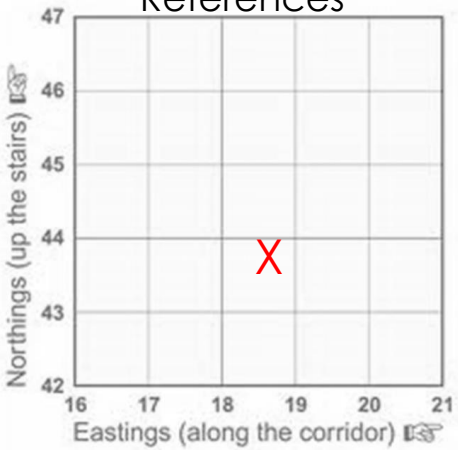


Distance can be measured in 2 ways:-

1. As the crow flies (in a straight line) - this is the direct and shortest distance from A to B
2. Actual distance following every twist and turn in the road or path



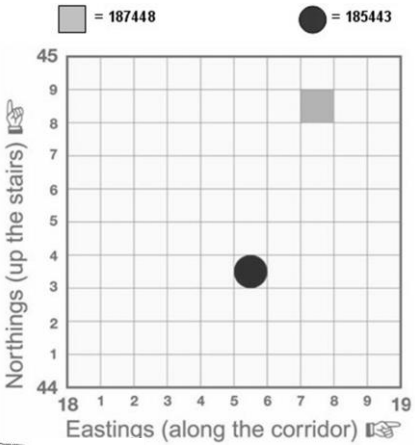
Four Figure Grid References



A four figure reference will point you to a square on the map.
X = 1844

Map Skills

Six Figure Grid References

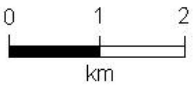


Six figure grid references are used to pin point a location within a square.

Scale

1:25,000

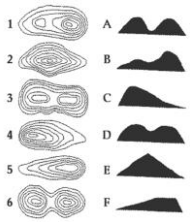
One inch to one mile



1: 25,000 This means 1 centimetre/ metre/kilometre on the map represents 25,000 centimetres/ metres/kilometres on land

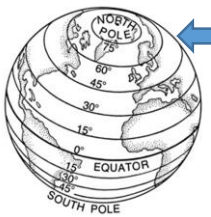
Contour Lines

- They show the **height** and **relief** (**shape**) of land.
- On most OS maps the lines are drawn every 10m.
- Several contours together make up a pattern which show the **steepness** and **shape** of the land.
- **Remember** the **closer** the **contour lines**, the **steeper** the **slope**.



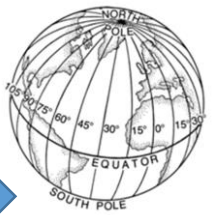
Important Lines of Latitude and Longitude

Equator 0° Latitude
Greenwich Meridian 0°Longitude

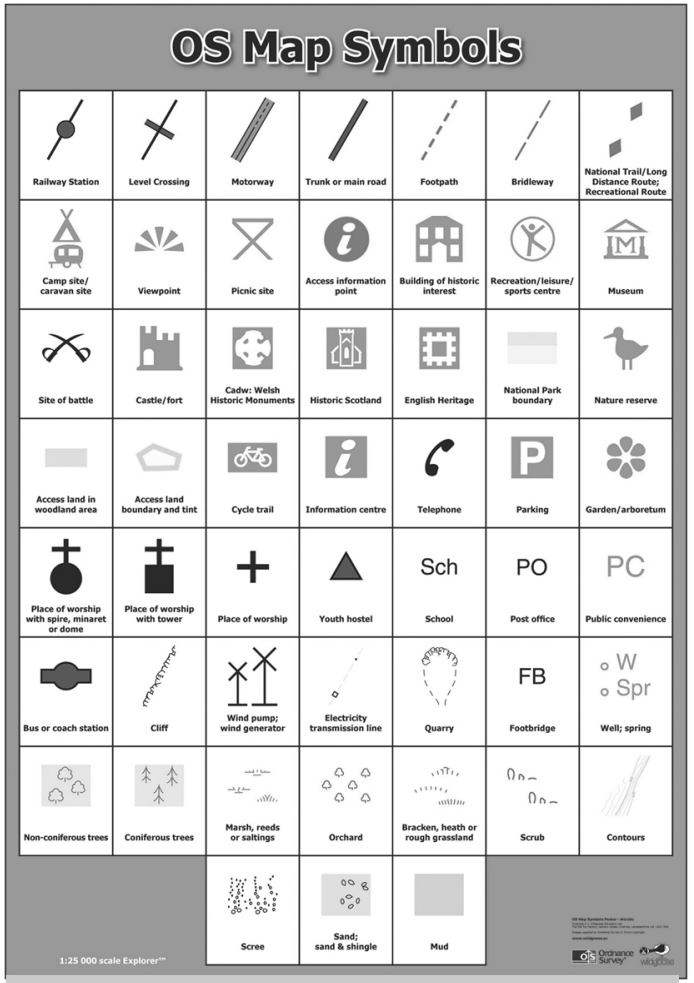


LATITUDE
Lines Around the earth!

LONGITUDE
Lines Over the top of the earth!



OS Map Symbols



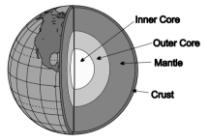
Ordnance Survey Map Symbols

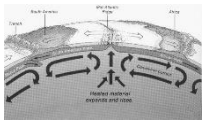
Maps give us a lot of information and there is not much room for labels. So we use symbols to save space and make the map easier to read. Symbols may be simple drawings, letters, shortened words or coloured shapes or areas.

Restless Earth

Structure of the Earth

The earth has 4 layers:
Inner core – Solid
Outer core – Liquid
Mantle – Semi-liquid
Crust- Solid

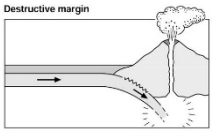




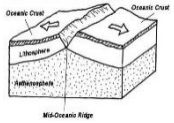
The crust is split into major sections called tectonic plates. These plates move due to convection currents in the mantle. They move in different directions causing various processes and different landforms to occur.

There are 2 types of crust:

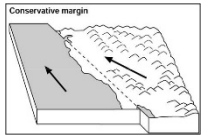
Oceanic	Continental
Thinner	Thicker
Younger	Older
More dense	Less dense
Made of Basalt	Made of Granite



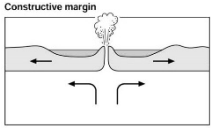
The heavier oceanic crust gets pushed underneath the lighter continental crust. The rock jolts and grinds as it's pushed down, causing earthquakes. Some of the rock gets so hot it melts and forces its way through cracks to form a volcano.



When two continental plates move towards each other the crust gets pushed and folded upwards to form mountain ranges.

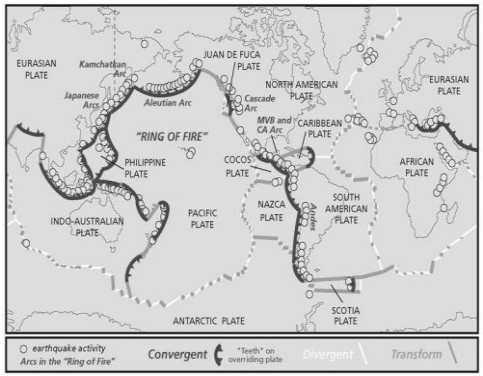


Two plates move past each other either in the same or opposite direction. Parts of the plates get stuck, then lurch free causing earthquakes.



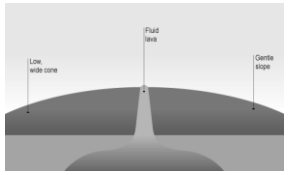
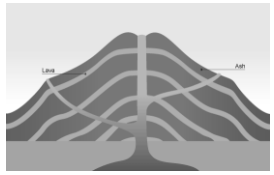
Two oceanic plates move apart, magma rises between the plates to form new ocean floor.

Distribution of tectonic activity	Along plate boundaries. On the edge of continents. Around the edge of the Pacific.



Volcanoes

A volcano is an opening or vent in the earth's surface through which molten material erupts and solidifies as lava.

Shield Volcano	Composite Volcano
	
Form at Constructive plate margins. They are made up of layers of lave. Shield like shape – Wide & gentle slopes Eruptions are frequent and non-violent.	Form at destructive plate margins. Made up of layers of lava and ash. Steep sided, cone shape. Very violent eruptions.

Active volcano = likely to erupt
Dormant volcano = hasn't erupted for many years
Extinct volcano = hasn't erupted for thousands or millions of years.

Montserrat Volcanic Eruption

Before the eruption:
11,000 people lived on the island of Montserrat in the Caribbean.
In 1995 the volcano became active after 400 years of being dormant.
Most people left the southern part of the island, moving to the north or abroad.
On the 25th June 1997 the volcano erupted killing 19 people who had stayed behind.
The capital city (Plymouth) and airport was destroyed

After the eruption:
Only 4,500 people are left on Montserrat, based in the north of the island.
The south of the island is completely restricted (exclusion zone)– fines are given if people go there.
They are now promoting tourism again as there is little land left to farm.
New capital city (Little Bay) and airport built.

Earthquake	The shaking of the Earths crust caused by the release of pressure which builds up as tectonic plates move.
Shockwaves	Pulses of energy that make the ground shake
Focus	The point where the Earthquake happens underground
Epicentre	The point on the surface above the focus
Richter Scale	A scale for measuring the energy given out in an Earthquake - Scientific
Mercalli Scale	A scale (1-12) used to measure the effects caused by an Earthquake

Reducing the impact of tectonic hazards

Monitoring	Prediction
Seismometers and Tilt meters measure earth movements. Volcanoes give off gases. Animals may act strangely.	By observing monitoring data, this can allow evacuation before event.
Protection	**Prepare**
Reinforced buildings and making building foundations that absorb movement. Building regulations. Automatic shut offs for gas and electricity. Items screwed to walls.	Avoid building in at risk areas. Training for emergency services and planned evacuation routes and drills.

Haiti Earthquake

Epicentre: Near the town of Leogane, 25km from capital of Port-au-Prince
Focus: 13km below ground When: 12th January 2010 Magnitude: 7.0

Primary Effects	Secondary Effects	Immediate Responses	Long term Responses
Several hospitals collapsed 3 million people affected Over 220,000 deaths and 300,000 injured Airport and port badly damaged. Roads blocked 30,000 buildings collapsed, many of which were government buildings.	1.3 million people made homeless. Aid supplies delayed because of airport and port closures. 2 million people left without food or water, so looting became a big problem. Lack of government buildings limited the control government had within the country. There were frequent power cuts. There were many dead bodies in the street causing a health hazard.	Neighbouring Dominican Republic provided emergency water and medical supplies and heavy machinery to help with search and rescue efforts. Most people dug through the rubble by hand. Emergency rescue teams arrived from many countries E.g. Iceland Temporary field hospitals were built to treat injured people. (Red Cross) GIS was used to provide satellite images and maps of the areas to help assist aid organisations. People from all over the world pledged money after seeing the disaster reports on the news or via social media. United Nations troops and police were sent to help distribute aid and keep order.	Money was pledged by organisations and governments to assist with rebuilding (slow progress was made). After 1 year there were still 1,300 temporary camps. 'Cash for work' programmes were set up to pay locals to clear the rubble. Small farmers were supported – so crops could be grown to feed the population. Schools were rebuilt.

Year 7 - Coasts

How do waves form?

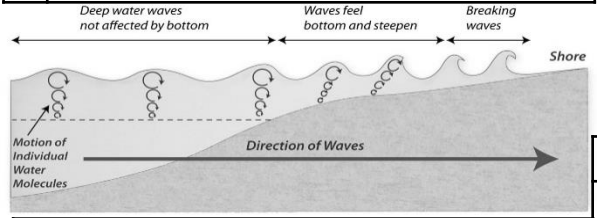
Waves are created by wind blowing over the surface of the sea. As the wind blows over the sea, friction is created - producing a swell in the water.

Size of waves

Affected by: - Fetch how far the wave has travelled
- Strength of the wind.
- How long the wind has been blowing for.

Why do waves break?

1	Waves start out at sea.
2	As waves approaches the shore, friction slows the base.
3	This causes the orbit to become elliptical.
4	Until the top of the wave breaks over.



Types of Erosion

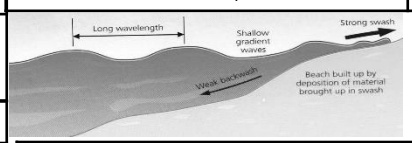
The break down and transport of rocks – smooth, round and sorted.

Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolves rocks.
Abrasion	Rocks hurled at the base of a cliff to break pieces apart or scraped against the banks and bed of a river.
Hydraulic Action	Water enters cracks in the cliff, or river bank, air compresses, causing the crack to expand.

Types of Waves

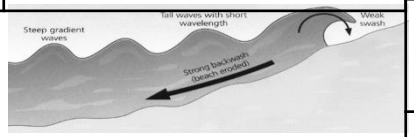
Constructive Waves

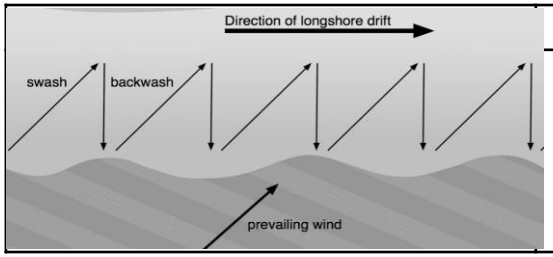
This wave has a swash that is stronger than the backwash. This therefore builds up the coast.



Destructive Waves

This wave has a backwash that is stronger than the swash. This therefore erodes the coast.



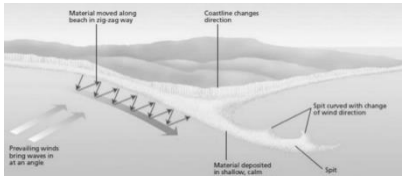


What is Transportation?

A natural process by which eroded material is carried/transported. Material is carried along the coastline via a process called Longshore Drift.

What is Deposition?

When the sea loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition. Heaviest material is deposited first.



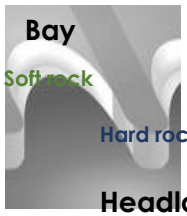
Formation of Coastal Spits – Depositional landforms

1) Swash moves up the beach at the angle of the prevailing wind.
2) Backwash moves down the beach at 90° to coastline, due to gravity.
3) Zigzag movement (Longshore Drift) transports material along beach.
4) Deposition causes beach to extend, until reaching a river estuary.
5) Change in prevailing wind direction forms a hook.
6) Sheltered area behind spit encourages deposition, salt marsh forms.

Example: Spurn Head, Holderness Coast.

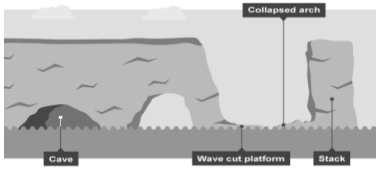
Erosional landforms

Formation of Bays and Headlands



1) Waves attack the coastline.
2) Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition.
3) More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.

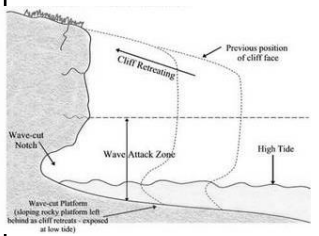
Formation of Coastal Stacks



Example: Old Harry Rocks, Dorset

1) Hydraulic action widens cracks in the cliff face over time.
2) Abrasion forms a wave cut notch between high tide and low tide.
3) Further abrasion widens the wave cut notch to from a cave.
4) Caves from both sides of the headland break through to form an arch.
5) Weather above/erosion below –arch collapses leaving stack.
6) Further weathering and erosion eaves a stump.

Formation of Wave cut notches and platforms



1) Waves attack the coastline.
2) Waves cut a notch into the bottom of the cliff face
3) The rock above collapses.
4) This process repeats, leaving a wave cut platform

Coastal Defences

Hard Engineering Defences

Groynes	Wood barriers prevent longshore drift, so the beach can build up.	✓ Beach still accessible. ✗ No deposition further down coast = erodes faster.
Sea Walls	Concrete walls break up the energy of the wave . Has a lip to stop waves going over.	✓ Long life span ✓ Protects from flooding ✗ Curved shape encourages erosion of beach deposits.
Gabions or Rip Rap	Cages of rocks/boulders absorb the waves energy, protecting the cliff behind.	✓ Cheap ✓ Local material can be used to look less strange. ✗ Will need replacing.

Soft Engineering Defences

Beach Nourishment	Beaches built up with sand, so waves have to travel further before eroding cliffs.	✓ Cheap ✓ Beach for tourists. ✗ Storms = need replacing. ✗ Offshore dredging damages seabed.
Managed Retreat	Low value areas of the coast are left to flood & erode.	✓ Reduce flood risk ✓ Creates wildlife habitats. ✗ Compensation for land.

Case Study: Holderness Coastline

Location and Background
Located on the North East coast of England. It has one of the highest rates of coastal erosion in Europe. The coast is made up of mainly Boulder clay, with a chalk headland to the north.

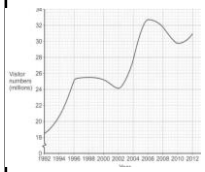
Geomorphic Processes
-1.8m of land is lost to the sea every year.
-In Great Cowden the rate of erosion is 10m per year due to management strategies further north.
-Longshore drift travels from south from Flamborough Head to Spurn Head where it forms a spit. .

Management - Over 11km of the coastline is managed
Mappleton – 450m of coastline protected costing £2million.
- 2 rock groynes to create beach and protect town.
- rock armour along base of cliff to absorb wave power
Hornsea – Seawall and groynes
Withernsea – Sea wall, groynes and rock armour.

What is tourism?

Tourism is the business or act of people visiting a different place for pleasure or recreation.

Is tourism growing?



Tourism is generally growing around the world. However there are some anomalies to this trend- some times external factors have caused small dips in tourism such as terrorism, economic crashes.

Tourism

Why is tourism growing?

1. More holidays. All countries in the developing world have increased the number of holidays a person can expect to receive by law.

2. Elderly population. Numbers of retired people in the developed world are higher than ever before. They have cash and are living longer than ever before. Early retirement, pensions and better health care has meant that the pensioner pound is a very important

3. Income. We earn more than ever before. Prices are comparatively cheaper than ever before. Consequently we have a greater disposable income than ever before

4. Communication. The communications revolution is the next big thing in tourism. Companies like GO and Last minute.com are already developing the Internet as a tool for booking holidays.

5.) Technology- Improvements in technology such as computers have revolutionised the way we shop for holidays. Price comparison sites and the internet are replacing the high street travel agent, lowering prices.

6.) Media- This has also revolutionised our tourism tastes and trends. Travel blogs

Extreme tourism

Extreme tourism, is a type of tourism which involves visiting a place that is difficult to get to, dangerous or has certain challenges.

Tourism in Antarctica - Extreme tourism

Why do people go on extreme tourism holidays?
Risk; Physical challenge; Adrenaline rush; showing off to their mates

Why do people visit Antarctica?
Glacier Walks; Wildlife Watching; Sight Seeing; historical visits

Positive Impacts:	**Negative Impacts**
• Helps scientists to discover vital information about wildlife. • Increase the appreciation of the nature in Antarctica.	• Cruise ships have struck icebergs causing oil spills which damages the environment and poisons the wildlife • Discharge of sewage into the sea and leaving rubbish behind - pollution • Animals become stressed because of the crowds of people causing them to abandon eggs – impact on breeding patterns • Penguins in Antarctica are frightened by large numbers of people and this interrupts their breeding.

Managing Antarctica tourism

The Antarctic Treaty is an international agreement that came into force in 1961 and has now been signed by 47 countries. The Treaty is designed to protect and conserve the area and its plant and animal life.

New limits on tourism in Antarctica:

- Only ships with fewer than 500 passengers are allowed to land there and a maximum of 100 passengers are allowed on shore at a time.
- Specially protected areas- these are off limits to tourists
- Wildlife- wildlife must not be disturbed when being observed.
- Litter- nothing can be left behind by tourists and there must be no smoking during shore landings
- Supervision- tourists must stay with their group and each group must have a qualified guide
- Waste- sewage must be treated biologically and other waste stored on board the ships

Ecotourism

Ecotourism, is a type of tourism which involves protecting the environment and the way of life of local people. E.g. Yachana lodge, in the Amazon.
People camp or stay in single storey lodges. Buildings are environmentally friendly. There is limited transport available. Only small sized groups stay at any one time. Local guides are used and the wages they get improve the local economy. Activities are nature based e.g. walking tours, cultural experiences, animal experiences, river rafting.

Mass tourism

Mass tourism is a type of tourism which involves lots of people visiting a destination in great numbers. They are often cheap places to visit.

Tourism in Kenya- Mass tourism

Background: Kenya is in East Africa. It has 333 miles of coastline on the Indian Ocean. It has a GNI per capita of $760.	Attractions: The Big 5 animals for safaris, Mt Kenya, Mombasa coast for white, sandy beaches and coral reefs Hot climate. Cultural tours of the Maasai Mara tribe and hot air balloon rides over the savannah
Positive Impacts:	**Negative Impacts**
Economic impacts: Tourism contributes 15% of the country's GNP In 2003, around 219,000 people worked in the tourist industry Social impacts: The culture and customs of the native Maasai tribe are preserved because things like traditional dancing are often displayed for tourists Environmental impacts: There are 23 national parks in Kenya, e.g. Nairobi National Park. Tourists have to pay entry fees to get in. This money is used to maintain the National Park which help protect the environment and wildlife	Economic impacts: Only 15% of the money earned through tourism goes to locals. The rest goes to big companies Social impacts: Some Maasai tribespeople were forced off their land to create National Parks for tourists Some Muslim people in Kenya are offended by the way female tourists dress. Environmental impacts: Safari vehicles have destroyed vegetation and caused soil erosion Wild animals have been affected e.g. cheetahs in the most heavily visited areas have changed their hunting behaviour to avoid the crowds Coral reefs in the Malindi marine national park have been damaged by tourist boats anchoring

Managing Kenya's tourism

Kenya is trying to reduce the negative impacts of tourism through:
- Walking or horseback tours are being promoted over vehicle safaris
-Alternative activities that are less damaging than safaris are also being encouraged e.g. climbing and white water rafting
- Kenya is also trying to maintain tourism
- Kenya's tourist board and ministry of tourism have launched an advertising campaign in Russia called 'Magical Kenya'
- Kenya Wildlife Service is planning to build airstrips in Ruma National Park and - Mount Elgon national Park to make them more accessible for tourists. It also plans to spend £8 million improving roads, bridges and airstrips to improve accessibility
- Visa fees for adults were cut by 50% in 2009 to make it cheaper to visit the country. They were also scrapped for children under 16 to encourage more families to visit.