

## **Climates Revision Notes**

(Hint: You should be aware of all the different climates, but you only need to study one in detail from each of the hot, temperate and cold climates.)

(Hint: This chapter is often linked to tourism in Tertiary Economic Activities.)

Climate is the average weather of a large area over a long period of time.

### Factors affecting climates

(Marking Scheme: Explain two factors @ 4 marks each, 2 marks statement and 2 marks development.)

#### **1. Latitude**

Latitude is shown as lines on a map that join places of equal distance from the equator.

The further away from the equator the cooler it is, nearer to the equator is hotter.

#### **2. Distance from the sea**

Maritime climates are beside the sea. The sea takes longer to heat up in the summer (cooler) but stays warm for longer in the winter (warmer). Small temperature range.

Continental climates are inland. The land heats up very quickly in the summer (warmer) but lose heat very quickly in the winter (cooler). Large temperature range.

#### **3. Prevailing winds**

A prevailing wind is the most common wind in an area, e.g. Ireland = Southwesterly. Winds can influence the area over which they blow.

Northerly winds = cold, dry.

Southerly winds = warm, some rain.

Westerly winds = cool in summer, mild in winter, brings rain.

Easterly winds = warm in summer, cool in winter, dry.

#### **4. Altitude**

Altitude is height above sea level. As altitude increases temperatures get colder.

Upland areas are also open to wind chill factor (reduces temperatures) as they are more exposed.

#### **5. Aspect**

Aspect is the direction that a place faces

North facing slopes are colder as they are exposed to northerly winds.

South facing slopes are warmer as they get more direct sunlight.

### Natural Regions

A natural region is a part of the world that has its own unique characteristics: climate, vegetation, wildlife and human activities.

### World Climates

World climates can be divided into three main types: Cold, Temperate and Hot.

Cold: Tundra (e.g. Lapland) Boreal (e.g. Sweden)

Temperate: Cool Temperate (e.g. Ireland) Warm Temperate (e.g. Spain)

Hot: Equatorial (e.g. Brazil) Savanna (e.g. Angola) Desert (e.g. Sahara Desert)

### Hot Climates

Equatorial Climate: One season, rainfall 2,000 mm, humid, rainforest and monkeys.

Savanna Climate: Two seasons, wet summers dry winters, grassland with a few trees and lions.

Desert Climate (Detailed account):

(Marking Scheme: 10 marks, 2 points @ 3 marks each 2 marks statement and 1 mark development, one point @ 4 marks 2 marks statement and 2 marks development.)

Location: Found between 15° and 30° north and south of the equator, western side of landmasses.

Temperature: 30 °C- 50 °C (day), 5 °C (night), cloudless skies very hot during the day but heat escapes during the night.

Precipitation: Rare less than 100 mm, drought also due to dry trade winds. Winds blow in over cold ocean currents, cold air holds little moisture = dry winds.

Plant Adaptations: Cactus (1) Plants widely spaced less competition  
(2) Radial roots spread out to collect rainfall.  
(3) Needles give protection from animals.  
(4) Spongy interior to hold water.  
(5) Thick, waxy skin to prevent moisture loss.

Animal Life: Camel (1) Wide hooves to prevent them from sinking into the sand.  
(2) Long eyelashes to stop the sand blowing into their eyes.  
(3) Hump to store fat for times of drought.  
(4) Thick skin on knee – pads to protect against hot sand.

Case Study: Desertification

(Marking Scheme: 10 marks)

What? Spreading of the deserts onto fertile land. (2 marks define terms)

Where affected? The Sahel, Southern edge of the Sahara Desert.

Causes? Climate change: due to global warming temperatures have increased and rainfall has decreased. Leading to severe drought.

Rapid population growth: this lead to an increase demand for wood and food and in turn caused deforestation, overgrazing and over - cropping of vulnerable land.

Soil erosion: The soil was left exposed and was eroded by wind and water.

(4 marks outline main causes) (2 statement, 2 explaining it)

Effects? Negative? Vast areas of land unable to support agriculture.

People died as a result of famine.

People were forced to migrate in search of aid.

Rural people moved to cities leading to the growth of slums.

(2 marks effects @ 1 statement, 1 explaining it)

Solutions? Digging deeper wells to provided water for irrigation.

New breeds of animals to allow farmers increased production with smaller herds.

Plant trees and grasses to help bind the soil.

(2 marks define a solution)

## Temperate Climates

Cool Temperate Oceanic: Summers warm winters mild (5 - 17°C), rainfall 800 – 2,000mm, deciduous forest.

### Warm Temperate Oceanic/Mediterranean Climate (Detailed account):

(Marking Scheme: 10 marks, 2 points @ 3 marks each 2 marks statement and 1 mark development, one point @ 4 marks 2 marks statement and 2 marks development.)

Location: Western edges of landmasses, 30° and 40° north and south of the equator.

Summers: Hot 30 °C, dry due to trade winds that blow over land.

Winters: Mild 4 – 6 °C, rainfall 400 – 700 mm due to prevailing winds, south – westerly, brings in some depressions.

Plant Adaptations: Cork tree (1) Widely spaced to prevent competition.

(2) Water loss prevented by thick bark and waxy leaves.

Human Activities: Woodland has been cleared for agriculture.

Irrigation schemes set up to prevent drought.

Overgrazing has led to soil erosion.

Tourism is a large industry bringing wealth and pollution.

## Cold Climates

Tundra: Summers short cold, winters long below freezing, snow, little vegetation, wildlife mostly migrates.

### Boreal Climate (Detailed account):

(Marking Scheme: 10 marks, 2 points @ 3 marks each 2 marks statement and 1 mark development, one point @ 4 marks 2 marks statement and 2 marks development.)

Location: Found between 55° north and the arctic circle.

Temperature: Summers are short and cool (10 °C) with long hours of daylight, winters are very cold (-25 °C) with long hours of darkness.

Precipitation: In the form of snow.

Plant Adaptations: Coniferous forest called taiga e.g. Pine Trees

(1) Needles instead of leaves to prevent moisture loss.

(2) Cone shape to allow snow to fall off the branches.

(3) Thick bark to keep the tree warm.

(4) Radial shallow roots to gather moisture above the permafrost.

Wildlife: Artic Fox (1) Hibernate in the winter.

(2) Fur changes colour for camouflage.

(3) Thick fur to keep warm.

Human activities: People that live in these regions have a nomadic lifestyle e.g. Lapps, Sami. They live in Lapland, Northern Scandinavia and herd reindeer.