

GEOGRAPHY HANDOUT FOR GRADE 11

Regional Division of Africa

- ❖ Based on **similar physical, economic and socio-cultural characteristics Africa** has **five major regions**. These are

- A. Eastern Africa**
- B. Northern Africa**
- C. Western Africa**
- D. Central Africa**
- E. Southern Africa**

1. Eastern Africa

- ❖ Located between **18°N – 27°S** latitudes and **22°E – 51°28'E** longitudes.
- ❖ The **third largest** in terms of its area 21%.
- ❖ A total of **18 countries**, of which **seven** are **landlocked**. Namely, **Djibouti, Eritrea, Ethiopia, Burundi, Comoros, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Reunion, Rwanda, Seychelles, Somalia, Tanzania, Uganda, Zambia, Zimbabwe**
- ❖ Characterized by diverse relief, climate, very high volcanic mountains, extensive plateaus, great rift valleys and low depressions
- ❖ Drained by the Nile, Wabishebele and Genale river basins.
- ❖ Most of Africa's highland and rift valley lakes are found.
- ❖ The **most populous** for **(31.3% of Africa's total population in 2009)**.

- ❖ Nearly **22%** of the region's population is urban.
- ❖ Life expectancy averages **51** years.
- ❖ **Agriculture** is the most dominant economic activity.
- ❖ The **mining** and **industrial** sectors are **little developed** in the region.

2. Northern Africa

It is found between **3°N-37°33' N** and **15°N-36°E**

- The **largest region in terms of areal coverage** (1/3rd of the continent's total area)
- It consists **seven** countries. Namely **Algeria, Egypt, Libya, Morocco, Sudan, Tunisia and Western Sahara.**
- **Sudan and Algeria are the largest**, while **Tunisia** is the **smallest**.
- All the states of this region have **direct access to the sea**.
- Characterized by desert climate.
- **Mediterranean climate dominates**. In 2009, the population is **20.5%**
- **Nearly 50%** of the region's population is **urban** and **life expectancy averages 69 years**.
- Dominated by **agriculture, industry and mining**.

3. Western Africa

- Stretched between **4°N – 25°N** latitudes and **17°33'W – 16°E** longitudes.
- **20% of** Africa's total area and constitutes **17 countries**. Namely, ***Benin, Burkinafasso , Niger, Cape Verde, CoteD'Ivoire, Gambia, Ghana, Guinea, Guinea-***

bissau, Liberia, Mali, Mauritania, Nigeria, Senegal, Sierra Leon and Togo.

- **Niger is the largest while Cape Verde is the smallest.**
- Highlands and lowlands make up a good part of the relief.
- The Guinea highlands, the Fouta Djallon and Jos plateau form higher parts of the region. The Niger, Benue, Volta, Gambia and Senegal rivers drain the region.
- **Diverse vegetation due to climate variation**
- The **second most populous (29.7% in 2009)**. Africa's most populous country, **Nigeria**
- **42%** of the region's population lives in urban areas and **life expectancy averages 51 years.**
- dominated by **agriculture**
- **Industrial development** is limited to coastal areas. In some countries like **Nigeria, Ghana and Guinea**, mining is the **most important** economic activity.

4. Central Africa

- ✓ Located between **23°30'N – 15°30'S latitudes** and **8°E – 32°E longitudes.**
- ✓ **22%** of Africa's total area and possessing **9 countries** ,namely, **Angola, Cameroon, Central Africa republic Chad, Congo, Zaire equatorial Guinea, Gabon, and Sao Tome.**
- ✓ **Zaire is the largest** while **Sao Tome** is the **smallest.**
- ✓ **Second largest in term of area.**
- ✓ Experiences almost all types of climates of the content, except the **Mediterranean type.**

- ✓ **The diverse climatic and rich in bio-diversity.**
- ✓ Equatorial rainforests, Savanna woodland, Gallery (Riverine) vegetation, Desert and semi-desert vegetation.
- ✓ **12.5%** of the total population of Africa (**41% urban**).
- ✓ **Average life expectancy =51 years.**
- ✓ Economic activities, **Agriculture, forestry, mining and manufacturing.**
- ✓ **Angola, Gabon and Cameroon** are the richest countries in **petroleum resources.**

5. Southern Africa

- Located between **18°S – 34°52'S latitudes** and **7°E – 32°E longitudes.**
- Constitutes **5 sovereign states.** Namely, **Botswana, Lesotho, Namibia, RSA, and Swaziland.**
- **RSA is the largest** while **Swaziland is the smallest.**
- **8.9%** of Africa's total area.
- **the smallest region in term of area coverage**
- Topography is dominated by high plateaus of over 300 m high, **Drakensberg mountains.**
- Major river basins (Limpopo, Orange, and Vaal) and inland basins (Ngami Kalhari, Makarikari and Okovango).
- Diverse climate i.e **tropical, desert, alpine** and **Mediterranean climates.**
- It is the **least populous** region in the continent.

Geological History and relief structure of Africa

Geological History Africa

Geology- refers a science that deals about the **composition, structure** and **History of the earth**.

Geological time scale (GTS) - is a time scale that records the earth's history from the origin up to the present.

The earth's surface is always in continuous change.

The **Geological Time Scale** shows the age of the earth. The earth is known to the **4.6 billion** years.

- ❖ The major geological events which occurred in each of the major eras since the existence of the **super single continent called Pangaea**. In the **Jurassic period** of **Mesozoic era Pangaea** was broken up in to **two(2) big ancient continents** known as **laurasia** and **Gondwanaland**
- ❖ **Laurasia** was located in the **north** while **Gondwanaland** was located in the **south** separated by a narrow sea called **Tathys**.
- ❖ **Africa** was part of **Gondwanaland** .Through the long period of time Laurasia and Gondwanaland were further split into the present day major continents.
- ❖ Different theories and views have been formulated to find out how and when African structure was formed.
- ❖ Among such **theories the most popular and widely accepted** one is **Alfred Wegener theory Continental drift or Continental Displacement** .According to Wegener Africa had been part of Gondwanaland.
 - The geological history of the Africa shows **four major** geological eras.
 - Each **era** is divided into **periods**, and each **period** is sub divided in to **epochs**.
 - Each geological era is different from the others based on:

- ✓ The relative position of the continent
- ✓ The characters of the prevailing climate
- ✓ The predominant life form

❖ There are **four** eras. These are:

1. Precambrian era
2. Paleozoic era
3. Mesozoic era
4. Cenozoic era

1. Precambrian Era (4.5 billion - 600 million).

- The **oldest** and **largest** division of the geological time scale.
- It covers almost **88% (5/6th)** of the geological history).

Major events

- The **formation of the basement complex rock** or **crystalline basement complex**.
- Vast areas are observed with **Precambrian rocks exposed to the surface** such are known as **shields** or **cartons**.
- **orogenesis** (a series of mountain-forming processes) and
- **Metamorphism**-Formation of the Basement Complex Rocks or Precambrian or crystalline basement complex rock.

2. Paleozoic Era (600 - 250 million).

- ✓ It is the **second longest and oldest era** in geological history of the earth.

Major events

- ✓ **Series denudation and peneplanation.**
- ✓ **Heavy erosion**
- ✓ **Formation of coal during Carboniferous period**
- ❖ **Denudation** is the lowering of the earth's surface.
- ❖ **peneplanation** refers to the formation of almost level surfaces as a result of lowering in altitude.
- ❖ Divided in to 6 periods(Cambrian, Ordovician, Silurian, Devonian, carboniferous and Permian)

3. Mesozoic Era (250-70 million)

- ✓ **It is the third largest oldest era in geological time scale.**
- ✓ **It is a time of sinking and uplifting of the land.**

Major events

- ✓ **Sinking of the horn Africa resulted in gradual transgression of the sea during the years of Triassic period**
 - ✓ **Formation of sedimentary rock**
 - ✓ **Uplifting (rising) of the in the horn of Africa resulted regression of the sea during cretaceous period.**
- It is divided into 3 periods
- I. **Triassic**
 - II. **Jurassic**
 - III. **Cretaceous).**

- During **Triassic** (sinking of the land in the eastern part of the continent).
- During **Jurassic** (the land remained under the sea).
- During **cretaceous** (rising or uplifting of the land and regression of the sea).

4. Cenozoic Era (70 million - present) or living era

- The most recent era
- It sometimes called **living era**.
- Formation of the present surface configuration or landform or relief of the African continent
- Divided in to **2 periods** (Tertiary and Quaternary).
- Tertiary divided in to epochs(Paleocene, Pliocene,Miocene, Oligocene and Eocene)
- Quaternary divided in to 2 epochs(Pleistocene and Holocene or recent)
- Formation of the Mediterranean Sea, Great East African Rift Valley, the Red Sea and the Gulf of Aden.
- Formation of volcanic mountains and Fold Mountains of Africa.
- Climatic change i.e cooling due to Pluvial (Fluvial) rains in tropical Africa caused heavy erosion and warming of the climate resulted in heavy evaporation and drying up of many water surface.

The Relief Structure of Africa

- ❖ Relief is **the difference** in altitude.
- ❖ the relief feature of Africa highly diverse such as extensive plateaus, deep valley and gorges, plain

- ❖ Africa relief consists, **71% plateaus, 25% plains** and **4% mountains**.
- ❖ **Africa** is the only continent predominantly **covered by plateau land** and small **proportion of plains**.
- ❖ Relief of **Africa ranges from 132 m below sea level (at the Qattara Depression in Egypt) to 5,895 m above sea level (at Mt. Kilimanjaro in Tanzania)**. This makes the maximum relief of Africa to be **6027 m**.
- ❖ The relief of African broadly classified **in to 4**.
 - o plateau
 - o mountain (high plains)
 - o plains(coastal lowlands)
 - o rift valley

Plateau

- ✓ Most part of Africa land is **plateau**.
- ✓ In most part of Africa, areas above **300 m** above sea level **altitude** are **considered to be as plateau**. .
- ✓ Africa average altitude **700m** is dividing line for **plateau types**.
- ✓ The continent landmasses can be classified in **two types**. these are:

A. High plateau

B. low plateau

A. High plateaus

- o **They are** extensive plateaus **that lie above 700 m** and their general elevation is

above 2000m.

- o They are found in the **southern and eastern part of Africa.**
- o They includes Ethiopian highlands, East African plateau, the Bihe (Bie') plateau, the Southwest African highlands and the Malagacy highlands etc
- o They are two major basins namely, Kalahari **basin** in the **west** and **Great Karroo** basin in the **south.**

B. Low Plateaus

- ❖ **They generally lie 300 - 700 masl).**
- ❖ They are extensively found in **northern and western. Part** of Africa.
- ❖ They includes the Chad, Libyan and Sudd basins and congo basin..

Mountains–

- ✓ **it is a high land with steep slopes and a peak.**
- ✓ Africa's landform is dominated by **two major types of mountains.** These are **volcanic and fold mountains.**

A. Volcanic mountains (>4000masl): were formed as a result of the **great volcanic activities that took place in the Tertiary period of the Cenozoic era.**

- ✓ Many of the volcanic mountains of the continent are concentrated in **Eastern Africa.**

Eg. Killimanjaro 5895m in Tanzania ,Kenya 5200m in Kenya, Ras Dejene/Dashen 4620m in Ethiopia, Meru 4567m in Tanzania, Elgon 4321m in Uganda and Kenya border, Cameroon 4070 Cameroon.

B. Fold Mountains

- ✓ They are found in the **northern and southern extremes of Africa.**

- ✓ Formed due to **compression forces**.

There are two **types of Fold Mountain**: **young** and **old**.

1. **Young fold mountains** are located in **northwestern Africa**, particularly in the **Maghreb region (Morocco, Algeria and Tunisia)**. They are called the **Atlas Mountains**. These mountains are contemporary to the Alps of Europe and the Himalayas of Asia, and they were formed during the Alpine orogenesis during the Cenozoic era.
2. **Old Fold Mountains** are found in **South Africa**. They were formed during the **Hercynian orogeny** in the **Mesozoic era**. They are contemporary to the Australian Alps. They are called the **Cape Ranges**.

Plains

- They are areas of **low relief with more or less flat surface configurations**.
- They generally **lie below 300m amsl**.
- They are confined to the coastal areas of **eastern, north eastern, south eastern** and **western** Africa,
- They are very narrow structure and they account **25%** of Africa's relief.

Generally Africa **coastal plains** are:

- ✓ Found in east, north east, south east and west coasts of the continent.
- ✓ Very small in size
- ✓ Very low area and elevation is below 300m.
- ✓ Extremely narrow
- ✓ Hot and dry
- ✓ Sparsely populated and vegetated,

Great East African Rift Valley (GEARV)

- o It is part of the world's **Great Rift Valley system**.
- o Stretches from **Syria, in the Middle East, to Mozambique, in Southeastern Africa**.
- o Total distance of about **7,200 km**. Of which, **5600km** in Africa.
- o Formed in the **Tertiary period** due to **faulting**.
- o Touching **15** African countries.
- o It has four trenches (branches). These are:-
 1. **Ethio-Eritrea-Djibouti-Northern Somalia Branch**-runs through the 4 countries of the Horn of Africa. It is the northern most part of the African Rift Valley, extending north from Lake Turkana in Kenya. It branches out into three trenches at the Afar Triangle, forming the Red Sea and the Gulf of Aden. It has many lakes, including Ethiopian Rift Valley lakes like Lakes Hawassa, Langano, Shalla, Abijata, and Ziway.
 2. **Western Branch** - runs from Uganda in the north, southwards through the Democratic Republic of the Congo, Rwanda and Burundi to Tanzania. Hosts the continent's highest block (horst) mountain, Mount Ruwenzori, and also lakes such as Lake Edward, Kivu and Tanganyika.
 3. **Eastern (Gregory) Branch** - runs from Lake Turkana in northern Kenya, crossing Tanzania to the east of Lake Victoria. Lakes such as Turkana, Naivasha, Norton, Manyari and Eyasi are located in it.
 4. **Malawi Rift Valley**- exists where the Western and Eastern Branches converge. It runs through Tanzania and Mozambique, and ends at port Biera of Mozambique. Lakes Malawi, Rukuwa and Chilwa are among the major lakes.

Africa's largest lake, Lake Victoria (83,000 km²) is found trapped between the western and eastern trenches of the Rift Valley.

Major characteristics of Great East African Rift Valley

- Bounded by steep escarpments (edges).
- It has numerous active and dormant volcanoes.
- Unstable due to earthquakes, volcanism and landslides.
- Has a hot and dry climate.

Climate of Africa

What is the difference between weather and climate?

- ✓ Africa has varied climatic condition due the intervention of weather and climate controls.

Controls of Weather and Climate in Africa

Climate controls –refers regulate the conditions of the elements to produce different weather and climatic conditions. These factors responsible for the spatial-temporal variation and distribution of climate in Africa,

a. Latitudes

- ❖ Indicate the distance of places N or S of the equator.
- ❖ It affects the amount of incoming solar radiation.
- ❖ Much of Africa (nearly 2/3rd) lies within the tropical latitudes (the hottest).

b. Altitude

- ✓ It plays a major role in modifying temperature over extensive areas.
 - Plateaus and high mountains reduce maritime influence (reduces temperature).
 - Temperature is low in higher altitudes is that the air is very thin. When air rises,

it cools.

- In Africa the impact of altitude on climate is highly pronounced in area of atlas mountain Cape Range Mountain, and extensive east Africa highlands.

C. Distance from the Sea

- ✓ Water bodies adjacent to land masses have great impacts on temperature and rainfall conditions.
- ✓ Africa in its northern part is very wide. This makes much of the area far from the sea.
- ✓ Extensive plateaus of Africa, which almost reach the coast with steep edges, form barriers greatly reducing the influence of the sea. Furthermore, the continent's relatively straight and smooth coastline also reduces the impact of the sea in the interior areas.

d. Ocean Currents

- Refers the horizontal movement of oceanic water.
- Oceanic water moves in two dimensions, **vertically** and **horizontally**.
- Based on origin there are **2 types** ocean current. These are :

- ✓ **warm**

- ✓ **Cold.**

A. Warm ocean currents

- ✓ Have **high temperatures** and **high moisture content**.
- ✓ They have **warming effect**.
- ✓ They **bring moisture to** the coastal areas.

B. Cold ocean currents

- ✓ Have **cool temperatures** and **low moisture content**.
- ✓ They **have cooling effects**.
- ✓ They cannot bring **rain to adjacent areas**, making places over which they blow very dry and desert.

3 major ocean currents affect the African continent. These are

- ✓ **Canary Cold ocean Current,**
 - ✓ **Benguela Cold ocean Current and**
 - ✓ **Mozambique Warm Ocean Current.**
- ❖ **Canary Cold ocean Current and Benguela Cold ocean Current** makes the **northwestern and southwestern parts of Africa both cool and dry.**
 - ❖ On the other hand, **the Mozambique warm ocean current makes Southeastern Africa warm and wet.**

e. Major Planetary Winds and Atmospheric Pressure

- ✓ The distribution and variation of temperature and rainfall depends on the pattern of atmospheric circulation over the continent.
- ✓ **All winds blow from high pressure to low pressure. Wind system and air pressure also** affect the distribution temperature and rainfall in Africa.
- ✓ Most of Africa lies within the **tropics**. Hence, much of it lies within the **trade wind (SE and NE) belts**.
- ✓ The **westerly winds** from the **sub polar high-pressure belts** of the world reach the **southern and northern tips** of the continent. The **Guinea monsoon winds (equatorial westerlies)** also have impacts on equatorial Africa.
- ✓ Of the global pressure belts, the **subtropical highs (around 30°N and S)** and **equatorial lows (doldrums) (between 5°N and 5°S latitudes)** are the main

pressure belts that affect the climate of the continent.

- ✓ **ITCZ (Inter Tropical Convergence Zone)**-refers the zone of convergence **between trade winds**, regulate the winds that blow into Africa at different seasons.
- ✓ The **ITCZ** moves **between the tropics of Cancer and Capricorn**, following the overhead sun, pulling winds towards it. Hence it controls the distribution of rainfall in Africa.

Temperature Conditions in Africa

- Spatially, lowlands (coastal areas) and the desert and semi desert areas of Africa experience the highest temperatures in the continent. Example, Sahara - largest desert in the world, and Kalahari desert in south has cooler temperature as result Benguela cold ocean current.
- The Ethiopian and East African highlands, Atlas of Morocco and Cape ranges of South Africa have lower temperature due to high altitude.
- **In Africa temperature condition varies with in seasonal change mainly because apparent movement of the overhead sun north and south of the equator.**
- The months of December, January and February constitute the summer season in southern hemisphere. during this time the sun is overhead south of the equator .as a result ,areas of high temperature are found in southern Africa. The northern and northeastern parts of the content remain relatively cool and dry at this time.
- **Similarly, the summer season in the northern hemisphere crosses ponds with the months of June, July and August.** This season is a season of high sun angle in Africa north of the Equator. Hence, the Sahara and other part of North Africa experience high temperature condition. In contrast, the areas of south of the equator are characterized by lower temperature at this time.

Rainfall Distribution in Africa

- o Controlled by the **Inter Tropical Convergence Zone (ITCZ)**. The position of ITCZ is, in turn, determined by the position of the overhead sun. For instance, in **July** the overhead sun is located near the **Tropic of Cancer**. Hence, **winds that carry moisture** from the **Atlantic and Indian Oceans**, the **Guinea monsoon (equatorial westerly)** and the **southeast trade winds**, invade parts of Africa north of the equator, causing the region to **receive high rainfall**. In this season, **West African coastal areas, the Ethiopian highlands, and eastern Madagascar** get their **heavy rainfall**.
- o In **January**, the sun is overhead near the **Tropic of Capricorn**, pulling the **northeast trade winds southward** over Africa. **These winds** are continental in origin, carrying **limited or no moisture**. In this season, therefore, **Northern Africa** remains **dry**, except for the **Maghreb region**, where the Mediterranean type of climate dominates. Southern Africa, however, gets its **maximum rainfall from the southeast trades of the Indian Ocean**. The **Congo Basin** gets rainfall from the **moist winds of the Atlantic Ocean**

Geography is the memory of the earth!!!!

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ከ9-12 ላላችሁ ተማሪዎች

እንደሚታወቀው ከ2015 ዓ.ም ጀምሮ የዩኒቨርሲቲ መግቢያ ፈተና ከ9ኛ-12ኛ ክፍል ያለውን የሚያጠቃልል ነው። ይህም ተማሪዎች ላይ ጫና መፍጠሩ የማይቀር ነው። እኛም ከ2015

ዓ.ም የት/ት ዘመን ጀምሮ በነፃ Mathematics ትምህርትን ከ9ኛ-12ኛ ክፍል ላላችሁ ተማሪዎች Example & Exercise Solution ጨምሮ ቀለል ባለ እና በሚገባችሁ መንገድ ለየት ያሉ YouTube video እያዘጋጀን የምናግዛችሁ መሆኑን ስናሳውቃችሁ በታላቅ አክብሮት ነው።

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Thank You

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