EXAM READY GEOGRAPHY

Exam Ready Geography

GRADE 10

Study Guide, Worked Examples and Practice Tests
for the Grade 10 Examination

- 8 units with clear key ideas, worked examples and “Watch out!” boxes
- 64 worked examples and 88 practice questions at three levels
- 160 unit-quiz questions and 3 full mock exams (40 MCQ each)
- Diagnostic test · Key Facts Sheet · Top 20 Mistakes · teacher notes

Follows the units and order of the Ethiopian Grade 10 Geography textbook

ERMIAS WEDAJE TEGBARU

Exam Ready Geography

Grade 10 · Study Guide, Worked Examples and Practice Tests

By Ermias Wedaje Tegbaru
Civil engineer and author, Addis Ababa
First edition, 2026

© 2026 Ermias Wedaje Tegbaru. All rights reserved. This book is licensed to its reader for personal study on the Exam Ready Ethiopia website. It may not be copied, photographed, shared or sold, in whole or in part, without the author's written permission.

This is an independent study guide. It follows the units and order of the Ethiopian Grade 10 Geography student textbook but is not published or endorsed by the Ministry of Education. All explanations, examples and questions are original. Keep your textbook and your teacher's notes beside this book.

The answers were calculated and checked before printing, but no book is free of errors. If you find a mistake or disagree with an answer, please tell the author on Telegram (@Ermias_Wedaje) and it will be reviewed for the next edition.

How to Use This Book

Each unit follows the same pattern, so you always know where to look.

Key ideas
The rules and facts of the section, short and clear.

Worked examples
Step-by-step solutions. Cover the solution and try first.

▲ Watch out!
The mistakes students make most often, and the right way.

Practice
Level 1 Basic · Level 2 Standard · Level 3 Challenge.

Unit quiz
20 multiple-choice questions in the style of the national examination, with reasons.

For the Teacher
Timing, starters and ways to use each part in class.

For students

- Begin with the Diagnostic Test. It shows which units need the most work.
- Read the key ideas, then study each example with the solution covered.
- Do Level 1 and Level 2 practice for every section; try Level 3 when you are ready.
- Take each unit quiz in 20 minutes, mark it, and redo every question you got wrong.
- In the last weeks, learn the Key Facts Sheet and the Top 20 Mistakes page, and sit the three mock exams. Their answer keys show which unit each question comes from.

For teachers

- Use the unit quiz as a 20-minute class test and the answer key to mark it. Each answer has a short reason for corrections.
- Use the three levels of practice as a differentiated worksheet: Level 1 for review, Level 2 for the whole class, Level 3 for extension.
- Ask students to define each key term in their own words before reading the unit.
- Use the 'Watch out!' tables as a warm-up: read the wrong statement aloud and ask students to correct it.
- Mock exams have 40 multiple-choice questions each, with 5 to 6 questions per unit, for 45 minutes.

For parents

- Ask your child to explain one worked example to you each day. Teaching is the best way to learn.
- Look at the quiz score after each unit, and celebrate progress, not only high marks.

Contents

Start	Diagnostic Test · Where Should I Start?	5
Unit 1	Landforms of Africa	6
Unit 2	Climate of Africa	11
Unit 3	Natural Resource Base of Africa	16
Unit 4	Population of Africa	21
Unit 5	Major Economic and Cultural Activities of Africa	26
Unit 6	Human–Natural Environment Interactions	31
Unit 7	Geographic Issues and Public Concerns in Africa	36
Unit 8	Geospatial Information and Data Processing	41
Reference	Key Facts Sheet	46
Reference	Top 20 Mistakes to Avoid	48
Reference	Exam Strategy	49
	Mock Examination 1	50
	Mock Examination 2	52
	Mock Examination 3	54
	Answers to the Mock Examinations	56

Page numbers are the numbers shown at the foot of each page (and in the online reader).

Diagnostic Test · Where Should I Start?

16 questions · 15 minutes. Take this test before you start the book. There are two questions on each unit. Your score only shows you where to spend your time.

1. The largest hot desert in the world is the

A. Sahara
B. Kalahari
C. Karoo
D. Namib

2. The Rift Valley is formed mainly by

A. rivers
B. wind
C. glaciers
D. faulting

3. Climate is the average of weather over

A. a week
B. a day
C. one season
D. 30 years or more

4. The wind that brings dry, dusty air to West Africa is the

A. Harmattan
B. Sirocco
C. Monsoon
D. Chinook

5. The longest river in the world is the

A. Niger
B. Congo
C. Zambezi
D. Nile

6. A renewable resource is

A. coal
B. water
C. natural gas
D. petroleum

7. Natural increase is

A. deaths − births
B. births − deaths
C. births + deaths
D. births × deaths

8. A pyramid with a wide base shows

A. low fertility
B. no children
C. high fertility
D. an old population

9. Mining and farming belong to the

A. quaternary sector
B. primary sector
C. secondary sector
D. tertiary sector

10. The number of Sustainable Development Goals is

A. 8
B. 17
C. 25
D. 12

11. Changing the environment by building dams is

A. modification
B. dependence
C. adaptation
D. migration

12. Indigenous knowledge is mostly passed on

A. by word of mouth
B. by satellite
C. by television
D. by law only

13. People leaving because of war is a

A. climate factor
B. pull factor
C. push factor
D. trade factor

14. A crowded poor settlement with weak services is a

A. farm
B. park
C. slum
D. port

15. GIS stands for

A. Geographic Information System
B. Global Image Survey
C. General Input System
D. Geospatial Index Scale

16. Remote sensing collects data

A. only by questionnaires
B. only underground
C. by direct contact
D. without direct contact

Unit 1 · Landforms of Africa

By the end of this unit you will be able to:

- describe the major landforms of the world and how they form
- state the location, size and neighbours of Africa
- name the four landform regions of Africa and their physical regions
- describe the Atlas Mountains, Sahara, Sahel, savanna, rainforest, Rift Valley and Southern African landforms

Before you start — check yourself. (a) Name two hot deserts of Africa. (b) Name the sea along the north of Africa. Answers: (a) Sahara and Kalahari (b) Mediterranean Sea

Key words: landform · internal processes · external processes · Atlas Mountains · Sahara · Sahel · savanna · rainforest · Rift Valley · graben · Kalahari · Namib

How this unit is examined

Question types that appear again and again in Ethiopian model examinations.

- World landforms and the processes that form them
- Location and size of Africa
- Landform regions of Africa
- Rift Valley and African Great Lakes
- Deserts and escarpments of Southern Africa

1.1 Overview of the World's Major Landforms

Key ideas

- A **landform** is a natural feature on the Earth's surface, such as a mountain, plateau, plain or valley. Landforms divide continents and countries into physical regions.
- **Internal processes** (volcanic and tectonic activity such as folding, faulting and volcanism) build up landforms. **External processes** (weathering, erosion and deposition) wear them down and reshape them.
- The Himalayas are **fold mountains**, formed when the Indian plate collided with the Eurasian plate.
- Landforms affect people, climate, soils, vegetation and settlement. Their effect on climate is called **macroclimate** over large areas and **microclimate** over small areas.

1.2 Location and Related Features of Africa

Key ideas

- Africa is bounded by the **Mediterranean Sea** (north), **Red Sea** and **Gulf of Aden** (north-east), **Indian Ocean** (east) and **Atlantic Ocean** (west). The **Equator** divides it into two almost equal halves.
- Africa is the **second largest and second most populous continent** after Asia. Its area is about **30.37 million km²**, about 6% of the Earth's surface and 20% of its land. It has **54 recognised sovereign states**.
- Because the Equator cuts Africa in half, conditions repeat north and south: the **Kalahari** matches the **Sahara**, the **Karoo** matches the **Maghreb**, and the Cape matches the Mediterranean region.

1.3 Major Landforms of Africa

Key ideas

- Africa has **four landform regions**: the **African Alpine System**, the **African massif**, the **East African Highlands and rift system**, and the **Southern Africa platform**. They contain eight physical regions: Atlas Mountains, Sahara, Sahel, savanna, rainforest, Rift Valley and Great Lakes, Ethiopian Highlands, and the mountains and deserts of Southern Africa.
- **Atlas Mountains**: in the north-west, from Morocco to Tunisia, over 2,000 km long. They form the Maghrib region (Morocco, Algeria, Tunisia) and divide the Mediterranean Sea from the Sahara.
- **Sahara**: about 9,200,000 km², the **largest hot desert in the world**, from the Atlantic Ocean to the Red Sea. A great sand sea is an **erg**; a stony pebble surface is a **reg**.
- **Sahel**: from the Arabic word for 'shore', a semi-arid belt about 5,000 km long south of the Sahara. It has grassland with acacia trees and is used for grazing. It is threatened by **desertification**.
- **Savanna**: tropical grassland with scattered drought-resistant trees that shed leaves in the dry season. It lies between the rainforest and the Sahel and has many national parks.
- **Tropical rainforest**: hot and wet all year, rainfall of more than 2,000 mm, a thick canopy 25–35 m high. The **Congo Basin** (Cameroon, CAR, Congo, DR Congo, Gabon, Equatorial Guinea) is the main area. Soils are acidic and poor in nutrients because of heavy leaching.
- **Rift Valley**: formed by normal faulting; the land between two faults sinks to form a **graben**. It runs about **5,600 km** from the Red Sea to Mozambique and is 32–80 km wide. In Ethiopia it splits the highlands into north-western and south-eastern halves.
- **Lake Victoria** (68,800 km²) is the largest lake in Africa. It is **not** on the rift floor; it lies in a depression between the eastern and western rifts.
- **Southern Africa**: the **Drakensberg (Ukhahlamba) escarpment** (about 3,000 m), the **Kalahari** (mainly Botswana), the **Namib** (coast of Namibia, formed partly by the cold **Benguela** current), the **Highveld** and the **Great Karoo**.

Worked Examples

Example 1.1 — Define

What is a landform?

Solution. A natural feature of the Earth's surface such as a mountain, plateau, plain or valley.

Example 1.2 — Classify

Is erosion an internal or external process?

Solution. External. It wears down and moves rock material.

Example 1.3 — Locate

Name the four seas and oceans that border Africa.

Solution. Mediterranean Sea, Red Sea, Indian Ocean and Atlantic Ocean.

Example 1.4 — Size

Give the area of Africa.

Solution. About 30.37 million km², roughly 20% of the Earth's land.

Example 1.5 — Exam Booster · Region

Which landform region contains the Sahara and the Sahel?

Solution. The African massif.

Example 1.6 — Compare

What is the difference between an erg and a reg?

Solution. An erg is a sea of sand dunes; a reg is a flat surface covered with pebbles.

Example 1.7 — Explain

Why is the Namib Desert dry although it lies on the coast?

Solution. The cold Benguela current cools the air above it, so little rain falls.

Example 1.8 — Exam Booster · Strategic

Why is Lake Victoria not counted as a rift valley lake?

Solution. It lies in a depression between the eastern and western rifts, not on the rift floor.

▲ Watch out!

× Wrong	✓ Right
The Sahara is a rainforest.	The Sahara is the largest hot desert.
Lake Victoria is a rift valley lake.	It lies between the two arms of the rift.
Africa is the largest continent.	Africa is the second largest, after Asia.

Practice 1

Level 1 · Basic

1. Name the continent that is larger than Africa.
2. Write the meaning of 'Sahel'.
3. Name two deserts in Southern Africa.
4. Define 'graben'.

Level 2 · Standard

5. Describe the location of the Atlas Mountains.
6. Explain how the Rift Valley is formed.
7. State two features of the tropical rainforest.
8. Why is the Sahel at risk of desertification?

Level 3 · Challenge

9. Compare the savanna with the tropical rainforest.
10. Explain how landforms influence climate.
11. Discuss why the northern and southern parts of Africa have similar landscapes.

Unit 1 Quiz · 20 questions · 20 minutes

1. Africa is the ___ largest continent in the world.

A. first B. second
C. third D. fourth

2. The Equator divides Africa into

A. two almost equal halves B. three equal parts
C. a large north and tiny south D. no parts

3. Which of these is an internal process that forms landforms?

A. Weathering B. Erosion
C. Volcanism D. Deposition

4. The Himalayas are an example of

A. fold mountains B. a rift valley
C. a desert D. a delta

5. How many recognised sovereign states does Africa have?

A. 24 B. 54
C. 104 D. 12

6. The sea that borders Africa in the north is the

A. Red Sea B. Black Sea
C. Mediterranean Sea D. Arabian Sea

7. The Atlas Mountains are found in

A. Southern Africa B. East Africa
C. North-western Africa D. Central Africa

8. The largest hot desert in the world is the

A. Kalahari B. Namib
C. Sahara D. Karoo

9. A large area of sand dunes in the Sahara is called an

A. erg B. reg
C. oasis D. wadi

10. The word 'Sahel' means

A. sand B. shore
C. forest D. mountain

11. The Sahel is mainly threatened by

A. glaciers B. desertification
C. earthquakes D. floods only

12. The savanna lies between

A. the sea and the desert B. the rainforest and the Sahel
C. the Atlas and the Rift D. the Namib and the Kalahari

13. Trees in the savanna shed their leaves in the dry season to

A. attract animals B. reduce water loss
C. get more light D. grow taller

14. The main area of tropical rainforest in Africa is the

A. Congo Basin B. Sahel
C. Highveld D. Atlas

15. Soils of the tropical rainforest are

A. rich in nutrients
B. poor in nutrients and acidic
C. salty
D. always sandy

16. The Rift Valley is formed mainly by

A. glaciers
B. faulting
C. wind erosion
D. river deposition

17. The total length of the Rift Valley system is about

A. 560 km
B. 5,600 km
C. 56,000 km
D. 56 km

18. The largest lake in Africa is

A. Lake Tanganyika
B. Lake Malawi
C. Lake Victoria
D. Lake Chad

19. The Namib Desert is partly caused by the cold

A. Canary current
B. Benguela current
C. Gulf Stream
D. Agulhas current

20. The Drakensberg is a(n)

A. desert
B. escarpment
C. lake
D. island

Answers and reasons · Unit 1 quiz

1. B · Asia is the largest; Africa is second.

2. A · The Equator runs through the middle of the continent.

3. C · Volcanic and tectonic activity come from inside the Earth.

4. A · They formed when the Indian and Eurasian plates collided.

5. B · Africa has 54 recognised states.

6. C · The Mediterranean Sea lies north of Africa.

7. C · They run from Morocco to Tunisia.

8. C · The Sahara covers about 9,200,000 km².

9. A · A reg is a stony surface.

10. B · The Sahel is the 'shore' of the Sahara.

11. B · Overgrazing and climate change turn grassland into desert.

12. B · It is a transitional grassland belt.

13. B · Leaf-shedding is an adaptation to dryness.

14. A · It covers six countries in Central Africa.

15. B · Heavy rain washes the nutrients out (leaching).

16. B · Land between two faults drops down.

17. B · It runs from the Red Sea to Mozambique.

18. C · Lake Victoria covers about 68,800 km².

19. B · Cold currents bring dry air to the coast.

20. B · It is a great escarpment in Southern Africa.

Unit 2 · Climate of Africa

By the end of this unit you will be able to:

- distinguish weather from climate and describe how world climates are classified
- describe the climate zones of the world
- describe the climate types of Africa and explain the factors that control them
- explain the benefits of climate and the challenges of climate change for Africa

Before you start — check yourself. (a) What is the difference between weather and climate? (b) Name the hottest part of Africa. Answers: (a) Weather is short-term, climate is the long-term average (b) the Sahara region

Key words: weather · climate · Köppen · climate zone · equatorial · tropical wet-and-dry · Mediterranean · ITCZ · Harmattan · ocean current · altitude · climate change

How this unit is examined

Question types that appear again and again in Ethiopian model examinations.

- Weather and climate; Köppen classification
- World climate zones by latitude
- Climate types of Africa
- Factors controlling Africa's climate
- Climate change and Africa's development

2.1 Overview of World Climatic Regions and Types

Key ideas

- **Weather** is the short-term state of the atmosphere (temperature, rain, wind, cloud) at a place on a given day. **Climate** is the **average of weather over a long period, 30 years or more**.
- The ancient Greeks divided the world into three zones: **torrid, temperate and polar**. Today the best-known scheme is by the German climatologist **Wladimir Köppen (1846–1940)**, who used temperature and precipitation and believed natural vegetation was the best expression of climate.
- Köppen recognised **five principal groups**: **A** humid tropical, **B** dry, **C** humid middle-latitude with mild winters, **D** humid middle-latitude with severe winters, **E** polar. Group B uses **precipitation** as its main criterion; the other four use temperature.
- By latitude there are four major climate zones: **Tropical (0°–23½°)**, **Subtropical (23½°–40°)** where most deserts lie, **Temperate (40°–60°)** and **Cold (60°–90°)**.
- The sun's rays strike the Equator almost vertically but reach the poles at a low angle, so the Equator is much warmer. In mountains, temperature falls rapidly with altitude.

2.2 Climate Types and Zones of Africa

Key ideas

- Africa lies mainly between the Tropic of Cancer and the Tropic of Capricorn and is crossed by the Equator, so it is the **most tropical continent**. Climate zones repeat almost as mirror images north and south of the Equator.
- Climate types: **equatorial**, **tropical wet-and-dry (savanna)**, **tropical monsoon**, **semi-arid (steppe)**, **hot desert**, **Mediterranean**, **humid subtropical (marine)**, **warm temperate upland** and **mountain**. Africa is divided into **eight climatic regions** by air-mass movement.
- **Equatorial**: within about 5° N and S of the Equator (DR Congo, Gabon, Cameroon, southern Nigeria, Ghana). Temperature about **26 °C** all year, daily range only about 3 °C, heavy rain and cloud all year.
- **Tropical wet-and-dry (savanna)**: covers a little less than half of Africa. Rain falls in the high-sun season (up to six months), the rest is dry. Found in Sudan, Ethiopia, Kenya, Tanzania and Somalia.
- **Hot desert**: the Sahara, Kalahari and the northern Kenya–Somali desert. Very little rain, clear skies, very hot days and cold nights; the highest temperature recorded was **58 °C at Azizia, Libya**.
- **Mediterranean**: northern and south-western tips of Africa. **Dry summers, mild wet winters** (about 10 °C in winter) because moist westerly winds blow in winter.
- **Humid subtropical**: south-eastern coast of South Africa, under the warm Mozambique current; rainfall 1,000–1,500 mm. **Mountain**: Kenya, Ethiopia and East African highlands; relief rainfall on windward slopes and rain shadow on leeward slopes.
- **Factors controlling Africa's climate**: angle of the sun and **latitude**, **air pressure and winds**, the **ITCZ**, **ocean currents**, land and water influence, and **altitude**.
- The **ITCZ** is where trade winds from both hemispheres meet. It moves north in June and south in December, bringing rain with it. The **Harmattan** is the dry, cool north-east trade wind of West Africa (November–April); the **monsoon** is the moist south-west wind that brings rain.
- **Warm currents** (Guinea, Mozambique) bring rain to coasts; **cool currents** (Canary, Benguela) cause dry coasts and rich fishing grounds.

2.3 Benefits of Climate for Life of People of Africa

Key ideas

- Climate affects food, farming, transport, clothing, settlement, health and recreation. Reliable rain supports crops, grazing, hydroelectric power and forests.
- Sunny climates give **solar energy** and attract tourists; mild highland climates are suited to coffee, tea and dense settlement.

2.4 Climate Change and its Challenges to Africa's Development Vision

Key ideas

- Africa is among the continents **most vulnerable to climate change** because it has **low adaptive capacity** and many people depend on rain-fed farming.
- Effects include drought, floods, falling crop yields, water shortage, disease and conflict over resources. Climate change threatens Africa's ability to reach its development goals, including **Agenda 2063**.
- Responses: **mitigation** (reducing greenhouse gases, planting trees, clean energy) and **adaptation** (drought-resistant crops, irrigation, early warning systems).

Worked Examples

Example 2.1 — Define

What is climate?

Solution. The average weather of a place over a long period, 30 years or more.

Example 2.2 — Distinguish

Give one difference between weather and climate.

Solution. Weather is a short-term condition; climate is a long-term average.

Example 2.3 — Classify

Which Köppen group uses precipitation as its main criterion?

Solution. Group B, the dry climates.

Example 2.4 — Locate

Name the climate zone from 0° to 23½°.

Solution. The tropical zone.

Example 2.5 — Exam Booster · Explain

Why is the Equator warmer than the poles?

Solution. The sun's rays strike the Equator almost vertically, but reach the poles at a low angle.

Example 2.6 — Describe

State two features of the equatorial climate.

Solution. Temperature about 26 °C all year and heavy rain all year.

Example 2.7 — Exam Booster · Cause

Why is the Namib coast dry?

Solution. The cool Benguela current cools the air so it holds little moisture and brings little rain.