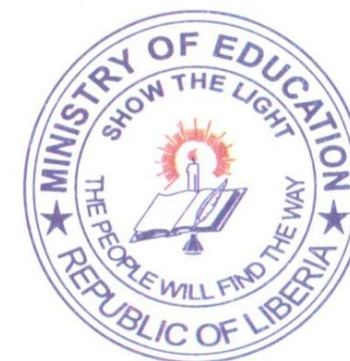


REPUBLIC OF LIBERIA

MINISTRY OF EDUCATION



NATIONAL CURRICULUM FOR GRADES 10 TO 12

GEOGRAPHY

February 2011

MESSAGE FROM THE MINISTER OF EDUCATION

I wish to extend my thanks and appreciation to ECSEL, UNESCO and all our partners for their immense contribution to this important task of revising and strengthening of the National Curriculum. Special thanks to USAID through LTTP for their funding and technical support in the harmonization or realignment of the curriculum. We extend sincere thanks and appreciation to the Bureau of Curriculum Development and Textbook Research, the National Curriculum Taskforce, and the subject specialists from various institutions for the level of professionalism that went into this exercise.

The revision and strengthening of our National Curriculum comes at a time when our nation is faced with the Herculean task or challenge of education transformation, national reconstruction, recovery and renewal in the aftermath of a devastating civil war. Hence, critical to this national challenge is the rebuilding of the education sector as Liberians can not achieve the desired socio-economic progress in the absence of a strong, vibrant and productive education and training system.

The revised national curriculum has two features which include the regular core subject areas of Mathematics, Science, Language Arts and Social Studies and emphasis is being given to the global challenge of HIV/AIDS, Peace, Citizenship, Human Rights and Environmental education. Secondly, the new curriculum is developed in line with international standards especially those practiced and enshrined in the curriculum of our sisterly Republic of Nigeria and Ghana who are also members of the West African Examinations Council (WAEC) .

We wish to urge all our education partners including students, teachers, principals, proprietors of schools and members of school boards to use this curriculum in our schools to enhance quality and relevant instruction and to enable our students to be adequately prepared to take the West African Senior Secondary Certificate Examinations (WASSCE) come 2013 as envisaged by us in the education sector.

May I conclude by once again saying big thank-you to all those who contributed to make this project a success.

Hon. E. Othello Gongar
MINISTER

INTRODUCTION

The study of Geography is essential for the proper understanding of the interaction between man and his physical and cultural environments. The activities of human beings on earth are continually influenced by the physical environment, just as the physical environment is also profoundly influenced by human activities. For sustainable living on our planet, therefore, we need to obtain a deeper understanding of this human-environment interaction, and how best to manage it. Geography is also about how human beings interact with each other, and the social, cultural, economic, and political institutions that are established to regulate this interaction. This curriculum in Geography for Liberian Senior High School students has been designed, therefore, to develop the requisite knowledge, skills, competencies, values and attitudes that would make for a sustainable existence on our planet, as well as lay a solid foundation for the more advanced study of Geography.

A student-centred approach is emphasized in this curriculum. This is based on the firm belief that learning becomes more permanent, meaningful, and exciting when students themselves take ownership of the learning process. Teachers are, therefore, urged to contrive those classroom strategies that would engage students actively in the teaching/learning process.

AIMS AND OBJECTIVES

Upon the completion of this course of study, students will be able to:

1. Acquire and improve their skills and techniques for accurate and orderly geographical investigations to be carried out both in the classroom, and on the field.
2. Explain facts about the earth – its shape, structure and evolving characteristics.
3. Examine the facts that shape the earth's surface, and its interior.
4. Understand the concepts of water cycle and their interrelationships.
5. Explain human-environment interrelationship.
6. Analyze and discuss human activities that threaten environment safety.
7. Interpret in practice map-land relationships.
8. Apply geographical theories and concepts in real life problem solving.

SEMESTER: ONE

PERIOD: I

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – THE EARTH AS A PLANET

TOPIC: THE SOLAR SYSTEM

GENERAL OBJECTIVES: Upon completion of this Unit, students will be able to:

1. Discuss the components of the solar system and their relevance to life on earth.
2. Describe how the planets move through space.
3. Describe the shape of the earth.
4. Analyze the effects of the earth's movements.
5. Determine, by calculation and demonstration, local time and standard time differences between places on different meridians.
6. Determine, through demonstration and calculation, linear distances using latitudes.

SPECIFIC OBJECTIVES: Upon completion of this topic, students will be able to:

1. Define the term *Solar System*.
2. List planets in the order of their distances away from the sun.
3. Identify the planetary position of earth in space.
4. State and relate the earth's position to the existence of animal and plant life.
5. Demonstrate a full understanding of the rotation, and the revolution of the earth.
6. Analyze the effects of the earth's rotation and revolution on human activities on earth.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	EVALATION
Students will be able to clearly relate life on the earth to its planetary position in space.	1. The Solar System a) Definition b) Galaxy c) Milky way 2. The Planets a) Definition b) Characteristics c) Natural Satellites	<ol style="list-style-type: none">1. Give demonstrative exercises on time calculation.2. Compare various time zones.3. Demonstrate the concept of rotation	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i>	<u>- Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Define the term <i>Solar System</i>.2. List planets in the order of their distances away from the sun.3. Identify the planetary position of earth in space.4. State and relate the earth's position to the existence of animal and plant

	<p>3. The Sun</p> <ul style="list-style-type: none"> a) Definition b) Characteristics c) Importance of the sun <p>4. The Moon</p> <ul style="list-style-type: none"> a) Definition b) Characteristics c) Phases d) importance of the moon as a satellite of the earth 	and revolution by separate groups of students.	<p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	<p>life.</p> <ul style="list-style-type: none"> 5. Analyze the effects of the earth's rotation and revolution on human activities on earth. 6. Reports on visual observations made at clear night of the sky. 7. Demonstrate the earth's rotation and revolution <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Quizzes • Demonstrations • Oral questions & answers • Assignments • Written observations
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SEMESTER: ONE

PERIOD: I

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – THE EARTH AS A PLANET

TOPIC: SIZE AND SHAPE OF THE EARTH

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define the concepts *Equatorial Circumference, Equatorial Diameter, Polar Circumference, and Polar Diameter*.
2. With the use of a string, ruler and orange or egg, measure:
 - a) Equatorial circumference
 - b) Polar circumference
 - c) Polar diameter
 - d) Equatorial diameter
3. Provide proof of the shape of the earth.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/RESOURCES	EVALATION
Appreciate the earth's position and movements in space, and their effects on and kind.	<p>1. Earth's Dimension</p> <ol style="list-style-type: none"> Equatorial circumference Equatorial diameter Polar circumference Polar diameter Differences in length between equatorial circumference Differences in length between equatorial diameter and polar diameter <p>2. Shape of the Earth</p> <ol style="list-style-type: none"> Description Proof of the Earth's spherical shape. Inferential, Aerial photographs. Circumnavigation of the earth Lunar Eclipse, earth's curved Horizon, sunrise Sunset Bedford canal experiment 	<ol style="list-style-type: none"> Using a string, ruler and orange or egg, students will measure: <ol style="list-style-type: none"> Equatorial circumference Polar circumference Polar diameter Equatorial diameter 	<p>A. Primary Text <i>General Geography in Diagrams</i> (Pearson)</p> <p>B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p>C. Other Resources/Supplementary Readings</p> <ul style="list-style-type: none"> Globe Football Flashlight Pictures of the solar system Planetarium 	<p>Essential tasks students should be able to do:</p> <ol style="list-style-type: none"> Upon completion of this topic, students will be able to: Define the concepts <i>Equatorial Circumference</i>, <i>Equatorial Diameter</i>, <i>Polar Circumference</i>, and <i>Polar Diameter</i>. With the use of a string, ruler and orange or egg, measure: <ol style="list-style-type: none"> Equatorial circumference Polar circumference Polar diameter Equatorial diameter Provide proof of the shape of the earth.

SEMESTER: ONE

PERIOD: I

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – THE EARTH AS A PLANET

TOPIC: THE EARTH'S MOVEMENTS

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define the concepts *rotation* and revolution of the earth.
2. Explain the differences between the two concepts.
3. Explain the terms associated with the rotation and revolution of the earth.
4. Describe the effects of the earth's rotation and revolution
5. State Ferrell's law on the deflection of winds and ocean currents

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the earth's position and movements in space, and their effects on and kind.	<p>1. The Rotation of The Earth</p> <ol style="list-style-type: none">a) Definitionb) Effect of rotation, day and night, different time, daily rising and falling of the tides, deflection of winds and ocean currents.c) Ferrell's law on the deflection of winds and ocean currents <p>2. The Revolution of the Earth</p> <ol style="list-style-type: none">a) Definitionb) Terms associated with the revolution of the earth (axis orbital plane, hemisphere equinoxes, solstices, dawn twilight etc.)c) Effect of revolution	<ol style="list-style-type: none">1. Practical demonstration of finding the altitude of the mid-day sun.	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none">• Globe• Football	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none">1. Define the concepts <i>rotation</i> and revolution of the earth.2. Explain the differences between the two concepts.3. Explain the terms associated with the rotation and revolution of the earth.4. Describe the effects of the earth's rotation and revolution5. State Ferrell's law on the deflection of winds and ocean currents6. Practical demonstration of finding the attitude of the midday sun.

	d) Similarities and Differences between rotation and revolution		<ul style="list-style-type: none"> Flashlight Pictures of the solar system Planetarium 	
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SEMESTER: ONE

PERIOD: I

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – THE EARTH AS A PLANET

TOPIC: LATITUDE LONGITUDE AND TIME

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define the terms *latitudes* and *longitudes*.
2. Name the major latitudes and longitudes.
3. State the uses of longitudes and latitudes.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the earth's position and movements in space, and their effects on and kind.	1. Latitudes <ol style="list-style-type: none"> Definition Major latitudes: <ol style="list-style-type: none"> Equator (0^0) Tropic of Cancer ($23 \frac{1}{2}^0$N) Tropical of Capricorn ($23 \frac{1}{2}^0$ S) Arctic Circle ($66 \frac{1}{2}^0$N) Antarctic Circle ($66 \frac{1}{2}^0$S) 2. Uses of Latitudes <ol style="list-style-type: none"> Calculation of linear distances Determination of climatic zones, natural vegetation, types of flora or 	<ol style="list-style-type: none"> 1. Students in their small groups with the globe will identify and show the importance of the lines, longitude and latitude. 2. Students will compare and contract great circles and small circles 	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>C. Other</u>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> 1. Define the terms <i>latitudes</i> and <i>longitudes</i>. 2. Name the major latitudes and longitudes. 3. State the uses of longitudes and latitudes. 4. Problem solving

	<p>fauna etc.</p> <p>3. Longitudes</p> <ol style="list-style-type: none"> Definition Major longitudes – Greenwich or prime meridian, the international date line, central meridians <p>4. Uses of Longitudes</p> <ol style="list-style-type: none"> Calculation of time difference Determining the position of a place on the globe or map. Great circles and small circles <p>5. Fraticuleless</p> <ol style="list-style-type: none"> Finding positions on maps <p>6. North And South Poles</p> <ol style="list-style-type: none"> Values (in degrees) Types of north: <ol style="list-style-type: none"> True North Magnetic north Grid north Magnetic declination 		<p><u>Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> Globe Football Flashlight Pictures of the solar system Planetarium 	<p>on the calculation and linear distances.</p> <p>5. Discuss the similarities and differences between lines of latitude and longitude.</p>
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SEMESTER: ONE

PERIOD: II

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – THE EARTH AS A PLANET

TOPIC: THE EXTERNAL STRUCTURE OF THE EARTH

GENERAL OBJECTIVES: Upon completion of this Unit, students will be able to:

1. Account for the importance of the structure of the earth.
2. Discuss the distinguishing external and internal features of the earth.
3. Discuss the mode of formation of the three classes of rocks.
4. Explain clearly the importance of rocks to man.

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Distinguish between the external and internal layers of the earth.
2. Name the main layers of the external structure of the earth.
3. Name the main layers of the internal structures of the earth.
4. Discuss the distinguishing features of the geologic layers of the earth's surface.
5. Discuss the distinguishing features of the external layers of the earth's surface.
6. Name the three classes of rocks.
7. Describe the mode of formation of each rock type.
8. States the main characteristics of each rock type.
9. States the main uses of rocks, using specific examples for illustration.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Acknowledge the importance of the earth's structure.</p> <p>Appreciate the importance of rock types.</p> <p>Analyze the living effects of the geologic zones of the earth.</p>	<p>1. Lithosphere:</p> <ol style="list-style-type: none"> Definitions of lithosphere Characteristics and components Importance of the lithosphere Problems and solutions <p>2. Hydrosphere:</p> <ol style="list-style-type: none"> Definition of hydrosphere Characteristics and components Importance of the hydrosphere Problems and solutions <p>3. Atmosphere</p> <ol style="list-style-type: none"> Definition of atmosphere Characteristics and composition Importance of the atmosphere Problems and solutions <p>4. Biosphere</p> <ol style="list-style-type: none"> Definition of biosphere Characteristics and components. Importance of the atmosphere Problems and solutions 	<ol style="list-style-type: none"> Group discussion on rock texture. Hardness and color of rock pieces / samples. Draw a simplified diagram of the earth's internal and external structure. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> Globe Football Flashlight Pictures of the solar system Planetarium 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> Distinguish between the external and internal layers of the earth. Name the main layers of the external structure of the earth. Name the main layers of the internal structures of the earth. Discuss the distinguishing features of the geologic layers of the earth's surface. Discuss the distinguishing features of the external layers of the earth's surface. Name the three classes of rocks. Describe the mode of formation of each rock type. States the main characteristics of each rock type. States the main uses of rocks, using specific examples for illustration. Chalk board demonstration of the four shapes of the earth. State the importance of the external and internal structure of the earth. Describe the interaction between the four spheres of the earth.

SEMESTER: ONE

PERIOD: II

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – THE EARTH AS A PLANET

TOPIC: THE INTERNAL STRUCTURE OF THE EARTH

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define and locate the following:
 - a) The Crust
 - b) The Mantle
 - c) The Core
2. Describe the composition of each.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Acknowledge the importance of the earth's structure. Appreciate the importance of rock types. Analyze the living effects of the geologic zones of the earth.	1. The Crust: <ol style="list-style-type: none">a) Definition and locationb) Parts of the crust layer (upper (sial), and lower (Sim)).c) Importance of the crust 2. The Mantle: <ol style="list-style-type: none">a) Definition and locationb) Description and compositionc) Importance of the crust 3. The Core <ol style="list-style-type: none">a) Definition and locationb) Description and compositionc) Parts of the core (outer and inner)d) Importance of the core 4. Diastrophism	<ol style="list-style-type: none">1. Group discussion on rock texture. Hardness and color of rock pieces / samples.2. Draw a simplified diagram of the earth's internal and external structure.3. Stretch a rubber band to illustrate faulting.4. Students will compress their face towels to illustrate folding.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1 Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>C. Other Resources/Supplementary Readings</u> <ul style="list-style-type: none">• Globe• Football• Flashlight	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Chalk board demonstration of the four shapes of the earth.2. Explain the importance of the external and internal structure of the earth.3. Identify different rock samples.4. Define and locate the following:<ol style="list-style-type: none">a) The Crustb) The Mantlec) The Core

	a) Plate tectonic and the theory of continental draft b) Effects c) Faulting and folding		<ul style="list-style-type: none"> • Pictures of the solar system • Planetarium 	5. Describe the composition of each.
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SEMESTER: ONE

PERIOD: II

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – THE EARTH AS A PLANET

TOPIC: ROCKS AND THEIR FORMATION

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define rocks and minerals.
2. Classify rock types.
3. List the characteristics of rocks.
4. Define the Mantle and describe its location.
5. Describe its composition, and the importance of the crust.
6. State the uses of rocks.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Acknowledge the importance of the earth's structure.</p> <p>Appreciate the importance of rock types.</p> <p>Analyze the living effects of the geologic zones of the earth.</p>	<p>1. Rocks and Minerals:</p> <p>a) Definition</p> <p>b) Classification of rock into types</p> <ol style="list-style-type: none"> i. Igneous ii. Metamorphic iii. Sedimentary iv. Formation of rock <p>2. The Mantle:</p> <p>a) Definition and location</p> <p>b) Description and composition</p>	<ol style="list-style-type: none"> 1. Group discussion on rock texture. Hardness and color of rock pieces / samples. 2. Draw a simplified diagram of the earth's internal and external structure. 3. Collection and identification 	<p>A. Primary Text <i>General Geography in Diagrams</i> (Pearson)</p> <p>B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p>	<p>Essential tasks students should be able to do:</p> <ol style="list-style-type: none"> 1. Chalk board demonstration of the four shapes of the earth. 2. State the importance of the external and

	c) Importance of the crust <ul style="list-style-type: none"> i. Igneous ii. Metamorphic iii. Sedimentary d) Characteristics of rock: <ul style="list-style-type: none"> i. Texture ii. Structure iii. Color iv. Permeability 3. Uses of Rock <ul style="list-style-type: none"> a) Igneous b) Metamorphic c) Sedimentary 		<i>Certificate Physical and Human Geography</i> <u>C. Other Resources/Supplementary Readings</u> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	internal structure of the earth. 3. Collect and correctly classify rock samples. 4. Students will match rock samples with their types and uses respectively.
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SEMESTER: ONE

PERIOD: III

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – MAJOR LANDFORMS

TOPIC: MOUNTAINS

GENERAL OBJECTIVES: Upon completion of this Unit, students will be able to:

1. Understand that the structure of the earth is changing all the time.
2. Examine the processes of mountain formation.
3. Account for the importance of major landforms.

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Identify the types of major landforms.
2. Describe and use diagrams to illustrate the formation of major landforms.
3. Account for the formation of each major landform.
4. Analyze the importance of major land forms.
5. Discuss the problems of major landforms.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Develop the ability to distinguish between one landform and another</p> <p>Cope with the two-way influence of landforms and people.</p> <p>Appraise the dual effects of forces that produce landform</p>	<p>1. Fold Mountains</p> <p>a) Definition and Description Definition</p> <p>b) Types: Simple folds, and Complex folds</p> <p>c) Formation of fold mountains</p> <p>d) -Importance of fold mountains</p> <p>e) Source of minerals, source of timber and wood, HEP production, Tourism, Communication masts, Climatic modification, etc.</p> <p>f) Disadvantages of fold mountains</p> <p>2. Volcanic Mountains</p> <p>a) Definition and description</p> <p>b) Formation of Volcanic Mountains</p> <p>c) Importance of Volcanic mountains</p> <p>i. Source of minerals</p> <p>ii. source of timber and wood</p> <p>iii. HEP Harnessing</p> <p>iv. Tourism</p> <p>v. Communication masts</p> <p>vi. Moderation of Climate, etc.</p> <p>d) Disadvantages of volcanic mountains</p> <p>3. Block Mountains</p> <p>a) Definition and Description</p> <p>b) Formation of Block Mountains</p> <p>c) Importance of Block Mountains</p> <p>i. Mineral deposits</p> <p>ii. Moderation of climate</p> <p>iii. Communication masts</p> <p>iv. Tourism, etc</p> <p>d) Disadvantages of Block Mountains</p>	<p>1. Organize field trips to observe various landforms in Liberia.</p> <p>2. Let students make sketches of the landforms they observed.</p> <p>3. The location of Fold Mountains, Volcanic Mountains, Residual Mountains and Block Mountains on the world physical maps.</p>	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	<p><u>Essential tasks students should be able to do:</u></p> <p>1. Sketch various landforms and classify them.</p> <p>2. Compare pairs of mountains with their types</p> <p>3. Identify the types of major landforms.</p> <p>4. Describe and use diagrams to illustrate the formation of major landforms.</p> <p>5. Account for the formation of each major landform.</p> <p>6. Analyze the importance of major land forms.</p> <p>7. Discuss the problems of major landforms.</p>

	4. Residual Mountains a) Definition and description b) Formation of Residual mountains c) Importance of Residual mountain i. Mineral deposits ii. Communication masts iii. Tourism iv. Agriculture (Transhumance). d) Disadvantages of Residual mountains			
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SEMESTER: ONE

PERIOD: III

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – MAJOR LANDFORMS

TOPIC: PLATEAUS

GENERAL OBJECTIVES: Upon completion of this Unit, students will be able to:

1. Understand that the structure of the earth is changing all the time.
2. Examine the processes of mountain formation.
3. Account for the importance of major landforms.

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define and describe the following:
 - a) Tectonic Plateaus
 - b) Intermont Plateaus
 - c) Lava Plateaus
 - d) Dissected Plateau.
2. State how the different plateaus are formed

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Develop the ability to distinguish between one landform and another</p> <p>Cope with the two-way influence of landforms and people.</p> <p>Appraise the dual effects of forces that produce landform.</p>	<p>1. Tectonic Plateaus</p> <p>a) Definition and description</p> <p>b) Formation of Tectonic Plateaus</p> <p>2. Intermont Plateaus</p> <p>a) Definition and description</p> <p>b) Formation of Lava Plateaus</p> <p>3. Lava Plateaus</p> <p>a) Definition and description</p> <p>b) Formation of Lava Plateaus</p> <p>4. Dissected Plateaus</p> <p>a) Definition and description</p> <p>b) Formation of Dissected Plateaus</p> <p>c) Importance of Plateaus:</p> <p>i. Mineral deposits</p> <p>ii. Climate moderation</p> <p>iii. Communication masts, etc.</p> <p>d) Disadvantages Of Plateaus</p>	<p>1. Organize field trips to observe various landforms in Liberia</p> <p>2. Let students make sketches of the landforms they observed.</p>	<p>A. Primary Text <i>General Geography in Diagrams</i> (Pearson)</p> <p>B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p>C. Other Resources/Supplementary Readings</p> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	<p>Essential tasks students should be able to do:</p> <p>1. Sketch various landforms and classify them.</p> <p>2. Define and describe the following:</p> <p>e) Tectonic Plateaus</p> <p>f) Intermont Plateaus</p> <p>g) Lava Plateaus</p> <p>h) Dissected Plateau.</p> <p>3. State how the different plateaus are formed</p>

SEMESTER: ONE**PERIOD: III****GRADE: 10****UNIT: GEOGRAPHY (PHYSICAL) – MAJOR LANDFORMS****TOPIC: PLAINS****GENERAL OBJECTIVES:** Upon completion of this Unit, students will be able to:

1. Understand that the structure of the earth is changing all the time.
2. Examine the processes of mountain formation.
3. Account for the importance of major landforms.

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Name and describe the characteristics of the different types of plains.
2. State how the plains are formed.
3. State the importance and disadvantages of the types of plains.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Develop the ability to distinguish between one landform and another</p> <p>Cope with the two-way influence of landforms and people.</p> <p>Appraise the dual effects of forces that produce landform.</p>	<p>1. Coastal Plains</p> <p>a) -Definition and Description</p> <p>b) -Formation</p> <p>c) -Importance of Coastal Plains:</p> <p>i) Agriculture</p> <p>ii) Tourism</p> <p>iii) Mineral deposits</p> <p>iv) Quarrying</p> <p>v) Settlement</p> <p>vi) Communication, etc.</p> <p>d) Disadvantages of Coastal Plan</p> <p>2. Outwash Plains</p> <p>a) Definition and Description</p> <p>b) Formation</p>	<p>1. Organize field trips to observe various landforms in Liberia</p> <p>2. Let students make sketches of the landforms they observed.</p>	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p>	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Name and describe the characteristics of the different types of plains. 2. State how the plains are formed. 3. State the importance and disadvantages of the types of plains. 4. Sketch various landforms and

	c) Importance of Outwash plains: i) Tourism ii) Agriculture iii) Mineral deposits iv) Settlement, etc. d) Disadvantages of Outwash plains. 3. Alluvial Plains a) Definition and Description b) Formation c) Importance of alluvial plains: d) Disadvantages of alluvial plains		<u>C. Other Resources/Supplementary Readings</u> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	classify them.
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SEMESTER: ONE

PERIOD: IV

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – MAJOR LANDFORMS

TOPIC: INTERNAL PROCESSES OF LANDFORM DEVELOPMENT

GENERAL OBJECTIVES: Upon completion of this Unit, students will be able to:

1. Understand the processes that cause the development of the hydrological cycle.
2. Analyze the effects of the various agencies that modify landforms.
3. Describe the effects of erosion, and ways to minimize its impact on the environment.

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Describe the processes that cause the development of the hydrological cycle.
2. Explain the Hydrological Cycle.
3. Define groundwater, and explain the terms associated with it.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Students will appreciate the importance of underground water to man.</p> <p>Examine the destructive effects of earthquakes and Vulcan city on both artificial features.</p> <p>Students will develop strategies to harness fulcanicity to the benefit of man.</p>	<p>1. Hydrological Cycle</p> <p>a) Definition</p> <p>b) Terms associated with hydrological cycle:</p> <p>i. Overland flow</p> <p>ii. Infiltration through flow</p> <p>iii. Evaporation, condensation, etc</p> <p>c) Importance of the hydrological cycle</p> <p>2. Groundwater</p> <p>a) Definition</p> <p>b) Terms associated with groundwater:</p> <p>i. Zone of permanent saturation</p> <p>ii. Springs</p> <p>iii. Wells</p> <p>iv. Artesian basins etc.</p> <p>c) Features produced by groundwater: stalagmites, stalactites, pillars, etc</p>	<p>1. Students will draw diagrams to illustrate hydrological cycle.</p> <p>2. Students will collect samples and identify permeable and impermeable rocks.</p> <p>3. Conduct experiment to practicalize water table.</p>	<p>A. Primary Text <i>General Geography in Diagrams</i> (Pearson)</p> <p>B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p>C. Other Resources/Supplementary Readings</p> <ul style="list-style-type: none"> Globe Football Flashlight Pictures of the solar system Planetarium 	<p>Essential tasks students should be able to do:</p> <ol style="list-style-type: none"> 1. Observation and writing reports 2. Field practices on the effect of underground water 3. Name and identify external and internal agencies that produce landforms. 4. Describe the processes that cause the development of the hydrological cycle. 5. Explain the Hydrological Cycle. 6. Define groundwater, and explain the terms associated with it.

SEMESTER: ONE**PERIOD: IV****GRADE: 10****UNIT: GEOGRAPHY (PHYSICAL) – MAJOR LANDFORMS****TOPIC: EXTERNAL AGENTS****GENERAL OBJECTIVES:** Upon completion of this Unit, students will be able to:

1. Analyze the effects of the various agencies that modify landforms.
2. Describe the effects of erosion, and ways to minimize its impact on the environment.

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define the terms *weathering, mass wasting, and weathering*.
2. Name the types of each external agent.
3. Explain what causes each.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Examine the destructive and constructive effects of the agents that produce landform.</p> <p>Create ways of limiting the negative impacts of the agents that produce landform.</p>	<p>1. Weathering</p> <ul style="list-style-type: none"> i) Definition ii) Type : Mechanical and Chemical iii) Pro changes, frost action, repeated writing and drying, biotic action solution, hydration, hydrolysis, oxidation, and carbonation. iv) Effects of weathering v) Importance of weathering, breakdown of soil nutrients, aeration, etc. <p>2. Mass Wasting</p> <ul style="list-style-type: none"> i) Definition ii) Types of mass wasting, soil creep, mud flow, land slide, rock fall (rock 	<ol style="list-style-type: none"> 1. Organize field trips to observe the effects of soil creep. 2. Group discussion on the ways of controlling land-use patterns. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other</u></p>	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Define the terms <i>weathering, mass wasting, and weathering</i>. 2. Name the types of each external agent. 3. Explain what causes each. 4. Write a report on the destructive effects of earthquakes and

	<p>avalanche)</p> <p>iii) Features of mass wasting scar altered slope, Deloris, etc.</p> <p>iv) Effect of mass wasting.</p> <p>3. Earthquakes</p> <p>i) Definition and terms epicenter focus, magnitude, intensity, seismograph, seismic waves, tsunamis, etc</p> <p>ii) Causes</p> <p>iii) Effect of earthquakes, migration, destruction of infrastructure, Displacement of population, etc.</p>		<p><u>Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	<p>volcanic eruption on disc.</p> <p>.</p>
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SEMESTER: TWO

PERIOD: IV

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – PROCESSES OF LANDFORM DEVELOPMENT

TOPIC: INTERNAL AGENTS (VULCANICITY)

GENERAL OBJECTIVES: Upon completion of this Unit, students will be able to:

1. Analyze the effects of the various agencies that modify landforms.
2. Contrive ways of limiting the negative impacts of the agents that produce landform

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define vulcanicity.
2. State the causes of vulcanicity.
3. Describe the features produced by volcanic action.
4. State the effects of vulcanicity.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Examine the destructive and constructive effects of the agents that produce landform. Create ways of limiting the negative impacts of the agents that produce landform.	1. Vulcanicity i) Definition and terms ii) Causes iii) Features produced by vulcanicity actions (intrusive): Batholiths, dykes, Skills, Laccoliths, Geysers, etc. iv) Features produced by volcanic actions (intrusive): Composite cone, ash and cinder cone, lava plateau, lava plain, crater, caldera, etc. v) Effects of vulcanicity: Tourist attraction, mineral deposits, fertile soils.	<ol style="list-style-type: none">1. Group discussion on the ways of controlling land-use patterns.2. Use of video clips on earthquakes and vulcanicity.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1 Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>C. Other Resources/Supplementary</u>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Observation and writing report on the destructive effects of earthquakes and volcanic eruption on disc.

			<u>Readings</u> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	
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SEMESTER: TWO

PERIOD: V

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – AGENTS MODIFYING LANDFORMS

TOPIC: RUNNING WATER

GENERAL OBJECTIVES: Upon the completion of this topic, student will be able to:

1. Examine the work of the agents that effect changes on landforms.
2. Analyze the effects and control of agents that modify landforms.
3. Understand the various processes that cause the development of ground water.

SPECIFIC OBJECTIVES: Upon completion of this topic, students will be able to:

1. Describe the processes of river erosion.
2. Name and describe the types of river erosion.
3. Analyze the factors influencing river deposition.
4. Explain the components of drainage.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Examine the destructive effects of river erosion. Create ways of limiting	1. River Erosion i) Process: Corrosion Hydraulic Action, and Solution ii) Types of River Erosion: Headward,	1. Organize field trips to observe the impacts of wave erosion along the beaches of Liberia.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)	<u>Essential tasks students should be able to do:</u> 1. Observation and

the impacts of coastal erosion.	<p>vertical, and Lateral.</p> <p>iii) Features produced by River Erosion: V-valley, Interlocking Spurs, Pot Holes, Waterfalls and Rapids, Gorges and Canyons, etc.</p> <p>2. River Transport</p> <p>i) Process: Traction, Siltation, Suspension, and Solution.</p> <p>3. River Deposition</p> <p>i) Factors Influencing River Deposition.</p> <p>ii) Feature produced by River Deposition: Flood plain, Braided river, ox-bow lake, Levee, Deferred tributary, and Delta.</p> <p>4. Drainage</p> <p>i) Components of drainage</p> <p>ii) Drainage Patterns: Dendritic, Trellis, Radial, etc.</p> <p>iii) Features produced by super imposed drainage.</p>	<p>2. Discuss, in groups, ways of controlling erosion by water.</p>	<p><u>B. Secondary Texts</u></p> <p>Abegunde, et al. <i>Senior Secondary Geography Bk. 1 Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	<p>written reports on river erosion.</p> <p>2. Describe the processes of river erosion.</p> <p>3. Name and describe the types of river erosion.</p> <p>4. Analyze the factors influencing river deposition.</p> <p>5. Explain the components of drainage.</p>
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SEMESTER: TWO

PERIOD: V

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – AGENTS MODIFYING LANDFORMS

TOPIC: ACTIONS OF WINDS

SPECIFIC OBJECTIVES: Upon completion of this topic, students will be able to:

1. Define wind erosion and describe its processes.
2. Describe the depositional features of wind.
3. Analyze the destructive and productive effects of wind.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Examine the destructive effects of wind and river erosion. Create ways of limiting the impacts of coastal erosion.	1. Wind Erosion i) Definition ii) Processes: Attrition. iii) Erosion Features: Deflation Hallows, Rock Pedestals, Zeugens , Yardans, Mesas, Buttes, Ventifacts, and DreikanTERS 2. Wind Deposition i) Depositional Features: Dunes, Barchan, Seifs, and Loess. ii) Features produced by water in desert regions.	Organize field trips to observe the impacts of wave erosion along the beaches of Liberia. Discuss, in groups, ways of controlling erosion by wind.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>C. Other Resources/Supplementary Readings</u> <ul style="list-style-type: none">• Globe• Football• Flashlight	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Define wind erosion and describe its processes.2. Describe the depositional features of wind.3. Analyze the destructive and productive effects of wind.4. Observation and written reports on wind erosion.

			<ul style="list-style-type: none"> • Pictures of the solar system • Planetarium 	
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SEMESTER: TWO

PERIOD: V

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – AGENTS MODIFYING LANDFORMS

TOPIC: ACTIONS OF WAVES

SPECIFIC OBJECTIVES: Upon completion of this topic, students will be able to:

1. Define waves, and describe their characteristics.
2. State the types of coasts, and describe their distinguishing features.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Examine the destructive effects of wind and river erosion.</p> <p>Create ways of limiting the impacts of coastal erosion.</p>	<p>1. Waves</p> <p>i) Definition</p> <p>ii) Characteristics</p> <p>iii) Erosional Processes: Corrosion Attrition, Hydraulic Actions Solvent actions</p> <p>iv) Features produced by Wave Erosion: Cliff, Wave cut platform, Caves, Geos, Arches, and Stacks.</p> <p>v) Features produced by wave Deposition: Beach, spit, Bar, Tombolo, and mudflat.</p> <p>2. Types of Coasts</p> <p>i) Submerged Coasts: High type and Lowland type.</p>	<ol style="list-style-type: none"> 1. Organize field trips to observe the impacts of wave erosion along the beaches of Liberia. 2. Discuss, in groups, ways of controlling erosion by wind. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other</u></p>	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Define waves, and describe their characteristics. 2. State the types of coasts, and describe their distinguishing features. 3. Write a report on the observed effects of wave erosion.

	ii) Emerge Coast: Highland type, and, Coral coasts iii) Origin of Coral Reefs: Daly's theory and Darwin' theory. iv) The Coastline of West Africa		<u>Resources/Supplementary Readings</u> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	
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SEMESTER: TWO

PERIOD: VI

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – LAND AND WATER DISTRIBUTION

TOPIC: LAND DISTRIBUTION

GENERAL OBJECTIVES: Upon completion of this unit students will be able to:

1. Identify the effects of natural phenomena on the environment.
2. Discuss the effects of human activities on the environment.
3. Develop pragmatic solutions to limit the impact of human activities on the environment.

SPECIFIC OBJECTIVES: Upon the completion of the topic, students will be able to:

1. Give the ratio of land to water.
2. Determine how much land is suitable for agriculture.
3. Identify the various forms of water masses.
4. Explain the importance of land masses to man.
5. Explain the importance of water masses to man.
6. Explain the major environmental hazards occurring as a result of human activities.
7. Explain the major environmental hazards occurring as a result of natural phenomena.
8. Suggest pragmatic solutions to minimize the negative impacts of human and natural phenomena on the environment as a resource of great importance that must not be misused.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Appraise the wealth of the continents and the oceans to the world's economy.</p> <p>Realize their importance, and how best to care for them.</p> <p>Recognize the need to manage and conserve the forest, water and land as environmental resources that must not be misused.</p>	<p>1. THE CONTINENTS</p> <p>i) Definition</p> <p>ii) Location and size</p> <p>iii) Importance</p> <p>2. THE ISLANDS</p> <p>i) Definition</p> <p>ii) Types</p> <p>iii) Importance</p> <p>3. VEGETATION RESOURCES</p> <p>i) Definition</p> <p>ii) Types of vegetation resources- timber, wood leaves, barks, latex, fruits, etc</p> <p>iii) Importance: food, medicine, fuel, housing, furniture, game reserve, etc.</p> <p>4. MINERAL RESOURCES</p> <p>i) Definition</p> <p>ii) Types of mineral resources: metallic-ferrous, alloys, mineral fuels, e.g. petroleum, uranium, Coal, etc.</p> <p>iii) Importance of mineral resources: power generation, gem stones, aircraft industry, construction, etc.</p> <p>5. CASE STUDY</p> <p>i) Mineral resources of Liberia, West Africa and other parts of Africa.</p>	<p>1. Have students recall the names of the continents and oceans.</p> <p>2. Students should be guided to arrive at definitions of continents, oceans, and islands.</p> <p>3. Group discussion on the importance of the continents and oceans.</p> <p>4. Invite Maritime Bureau officials to lecture students on Liberia's maritime affairs.</p> <p>5. Students should identify the vegetation resources of the country. Teacher to provide fuller explanation.</p> <p>6. Recap lesson on the mineral resources of Liberia.</p>	<p>A. Primary Text <i>General Geography in Diagrams</i> (Pearson)</p> <p>B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i></p> <p>C. Other Resources/ Supplementary Readings</p> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	<p><u>Essential tasks students should be able to do:</u></p> <p>1. Use the globe to identify the continents and oceans. Give the ratio of land to water.</p> <p>2. Determine how much land is suitable for agriculture.</p> <p>3. Identify the various forms of water masses.</p> <p>4. Explain the importance of land masses to man.</p> <p>5. Explain the importance of water masses to man.</p> <p>6. Explain the major environmental hazards occurring as a result of human activities.</p> <p>7. Explain the major environmental hazards occurring as a result of natural phenomena.</p> <p>8. Suggest pragmatic solutions to minimize the negative impacts of human and natural phenomena on the environment as a resource of great importance that must not be misused</p>

SEMESTER: TWO

PERIOD: VI

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – LAND AND WATER DISTRIBUTION

TOPIC: WATER DISTRIBUTION

SPECIFIC OBJECTIVES: Upon completion of this unit students will be able to:

1. Identify the effects of natural phenomena on the environment.
2. Discuss the effects of human activities on the environment.
3. Identify pragmatic solutions to limit the impact of human activities on the environment.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Appraise the wealth of the continents and the oceans to the World's economy.</p> <p>Realize their importance, and care for them.</p> <p>Recognize the need to manage and conserve the forest, water and land as environmental resources that must not be misused.</p>	<p>1. The Oceans</p> <p>i) Definition</p> <p>ii) Location and size</p> <p>iii) Topography of the Oceans</p> <p>iv) Importance</p> <p>2. Water Resources</p> <p>i) Rivers:</p> <p>ii) Definition</p> <p>iii) Source,</p> <p>iv) Major Rivers of the World</p> <p>v) Importance</p> <p>vi) Problems and Solutions</p> <p>3. ria - Definition</p> <p>I. Lakes</p> <p>i) Definition</p> <p>ii) Major Lakes</p> <p>iii) Importance</p> <p>iv) Problems and Solutions</p> <p>II. Spring Water and Wells</p>	<ol style="list-style-type: none"> 1. Have students recall the names of the Continents and Oceans 2. Group discussion on the importance of the Continents and Oceans. 3. Invite a Maritime Bureau Officials to lecture students on Liberia's Maritime affairs 4. Burning of Sheets of Paper in the Classroom. 5. Spraying of insecticides on selected plants and other organisms. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Globe • Football 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Use the globe to identify the continents and oceans. 2. Identify the effects of natural phenomena on the environment. 3. Discuss the effects of human activities on the environment. 4. Propose some pragmatic

	i) Definition ii) Importance iii) problems and Solutions iv) Case Study: Wells of Liberia.		<ul style="list-style-type: none"> Flashlight Pictures of the solar system Planetarium 	solutions to limit the impact of human activities on the environment.
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SEMESTER: TWO

PERIOD: VI

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – LAND AND WATER DISTRIBUTION

TOPIC: LAND AND WATER POLLUTION

SPECIFIC OBJECTIVES: Upon completion of this unit students will be able to:

1. Name the different kinds of pollution and briefly describe them.
2. State the effects of pollution on human activities.
3. Suggest ways by which to control pollution.
4. Discuss land ecosystem.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appraise the wealth of the continents and the oceans to the World's economy Realize their importance, and care for them. Recognize the need to manage and conserve the forest, water and land as environmental resources that must not be misused.	1. Land Pollution <ol style="list-style-type: none"> Definition Sources of land pollution Effects of land pollution Prevention/Control 2. Water Pollution <ol style="list-style-type: none"> Definition Sources of Water Pollution: River contamination(used of D.D.T and others), industrial waste etc, Effects of water pollution. Prevention/Control 	<ol style="list-style-type: none"> 1. Have students recall the names of the continents and oceans 2. Group discussion on the importance of the continents and oceans. 3. Invite a Maritime Bureau officials to lecture students on Liberia's maritime affairs 4. Spraying of insecticides on selected plants and other organisms. 	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> 1. Name the different kinds of pollution and briefly describe them. 2. State the effects of pollution on human activities. 3. Suggest ways by which to control pollution. 4. Use the globe to identify the

	3. Land Ecosystem i) Meaning and components ii) Food chain iii) Land reclamation iv) Nutrient Cycle v) Problem and Solution		<u>C. Other Resources/Supplementary Readings</u> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium	continents and oceans of the world..
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SEMESTER: TWO

PERIOD: VI

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – ENVIRONMENTAL BALANCE

TOPIC: SOILS

SPECIFIC OBJECTIVES: Upon completion of this unit students will be able to:

1. Name the different soil types, and describe their characteristics.
2. Discuss the factors involved in soil formation.
3. Identify and discuss the influences on soil fertility.
4. Critically discuss the importance of soil to human and animal life.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the importance of soil to plant and animal life.	1. Soil Types i) Local and characteristics 2. Soil Formation i) Factors ii) Relief iii) Time iv) Decomposition of organic	1. Have students recall the names of the continents and oceans 2. Group discussion on the importance of the continents and oceans. 3. Invite a Maritime Bureau Officials	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i>	<u>Essential tasks students should be able to do:</u> 1. Name the different soil types, and describe their characteristics. 2. Discuss the factors

	<p>matter, etc.</p> <p>v) Processes of Soil formation</p> <p>vi) Humidification</p> <p>vii) Mineralization</p> <p>viii) Leaching</p> <p>ix) Eluviations</p> <p>x) Eluviations</p> <p>xi) Lateralization, etc</p> <p>3. Soil Fertility</p> <p>4. Importance of Soil</p> <p>i) Plant life</p> <p>ii) Provision of Minerals</p> <p>iii) Source of raw materials</p> <p>iv) Base for construction</p> <p>v) Habitant for fauna and Flora</p>	<p>to lecture students on Liberia's Maritime affairs</p> <p>4. Burning of Sheets of Paper in the Classroom.</p> <p>5. Spraying of insecticides on selected plants and other organisms.</p>	<p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	<p>involved in soil formation.</p> <p>3. Identify and discuss the influences on soil fertility.</p> <p>4. Critically discuss the importance of soil to human and animal life.</p> <p>5. Use the globe to identify the continents and oceans.</p>
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SEMESTER: TWO

PERIOD: VI

GRADE: 10

UNIT: GEOGRAPHY (PHYSICAL) – ENVIRONMENTAL INTERVENTION

TOPIC: ENVIRONMENTAL HAZARD

SPECIFIC OBJECTIVES: Upon completion of this unit students will be able to:

1. List and describe the different kinds of environmental hazards.
2. State ways in which to avoid or manage such hazards.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	# OF DAYS	EVALUATION
Demonstrate a greater understanding of the causes and effects of	<p>1. Meaning and Types of Environmental Hazard</p> <p>i) Types: Soil erosion, floods,</p>	Let students recall incidents of environmental hazards locally and elsewhere that they know of.	<p><u>A. Primary Text</u></p> <p><i>General Geography in Diagrams</i> (Pearson)</p>	- Four days per	<p><u>Essential tasks students should be able to do:</u></p>

environmental hazards, and the ways in which they could be avoided or controlled.	<p>deforestation, desertification, drought, etc</p> <p>2. Soil Erosion and Depletion</p> <p>i) Types of Soil erosion: Sheet, gully</p> <p>ii) Effect of soil erosion and depletion: removal of top soil, reduction of food, loss of farmlands, etc</p> <p>iii) Prevention/Control</p> <p>3. Drought</p> <p>i) Meaning of Drought</p> <p>ii) Causes of Drought</p> <p>iii) Deforestation, global warming, etc</p> <p>iv) Effects of Drought</p> <p>4. Desertification</p> <p>i) Meaning</p> <p>ii) Causes:</p> <p>iii) Deforestation, global warming, unsound farming practices, forest fire, etc</p> <p>iv) Effects: Loss of farmlands, Aridity, change in pattern of agriculture, etc</p> <p>vi) Prevention/Control</p> <p>vii) Plant life</p> <p>viii) Provision of Minerals</p> <p>ix) Source of raw materials</p> <p>x) Base for construction</p> <p>xi) Habitant for fauna and Flora</p> <p>5. Flooding</p> <p>i) Meaning</p> <p>ii) Causes:</p> <p>iii) Precipitation</p> <p>iv) Melting of ice, etc</p> <p>v) Effects:</p> <p>vi) Displacement of population, loss</p>	<p>Guide students to categorize these hazards.</p> <p>Guide students to arrive at acceptable definitions of the terms associated with environmental hazards.</p> <p>Let students brainstorm the causes, effects, and means of prevention of the identified hazards.</p> <p>Teacher to provide a summary of the information related to the steps above.</p>	<p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Globe • Football • Flashlight • Pictures of the solar system • Planetarium 	week	<ol style="list-style-type: none"> 1. List and describe the different kinds of environmental hazards. 2. State ways in which to avoid or manage such hazards. 3. Engage in measures to control local environmental hazards.
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	of life and property, etc vii) Prevention and control				
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SEMESTER: ONE

PERIOD: I

GRADE: 11

UNIT: GEOGRAPHY (PHYSICAL) – ENVIRONMENTAL INTERVENTION

TOPIC: ENVIRONMENTAL HAZARD

SPECIFIC OBJECTIVES: Upon completion of this unit students will be able to:

UNIT / TOPIC: THE ATMOSPHERE: (Climatology and Human Geography)

GENERAL OBJECTIVES: Upon completion of the unit, students will be able to:

1. Interpret the world's natural phenomena persisting in the human environment in relation to atmospheric changes and patterns.
2. Relate geographical concepts and factors that influence human activities and climatic differences.
3. Analyze the role of climate to the economic development of a country.
4. Sustainably exploit atmospheric resources for national development.
5. Relate climatic change to various unsound human activities.

SPECIFIC OBJECTIVES: upon completion of the topic, students will be able to:

1. Define the term 'atmosphere'.
2. Describe and discuss the composition and layers of the atmosphere.
3. Analyze the importance of the atmosphere to man.
4. Account for the various ways of polluting the atmosphere by man.
5. Suggest ways of limiting the impact of air pollution.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
<p>Appraise the reliance of man on the atmosphere.</p> <p>Acknowledge the consequences of misusing it.</p>	<p>1. The Atmosphere</p> <p>i) Definition</p> <p>ii) Composition</p> <p>iii) Layers:</p> <p>iv) Troposphere,</p> <p>v) Stratosphere,</p> <p>vi) Mesospheric,</p> <p>vii) Ionosphere, and Exosphere</p> <p>viii) Importance of the layers.</p> <p>2. Greenhouse Effect</p> <p>i) Definition</p> <p>ii) Causes,</p> <p>iii) Industrial smoke,</p> <p>iv) Deforestation,</p> <p>v) Forest fires, Gas emissions, etc.</p> <p>vi) Effects:</p> <p>a) Climatic changes</p> <p>b) Global, warning, etc.</p>	<p>1. Group discussion on the effects of smoky environment, especially on health.</p> <p>2. Group discussion on air pollution.</p> <p>3. Invite an expert on environmental pollution to give a lecture on air pollution and control.</p>	<p>A. Primary Text <i>General Geography in Diagrams</i> (Pearson)</p> <p>B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i></p> <p>C. Other Resources/Supplementary Readings</p> <ul style="list-style-type: none"> • Pictures of smoggy environments in urban areas. 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Define the term 'atmosphere'. 2. Describe and discuss the composition and layers of the atmosphere. 3. Analyze the importance of the atmosphere to man. 4. Account for the various ways of polluting the atmosphere by man. 5. Suggest ways of limiting the impact of air pollution. 6. Draw a diagram of the atmosphere. 7. Identify the importance of each layer.

SEMESTER: ONE

PERIOD: II

GRADE: 11

UNIT: GEOGRAPHY (PHYSICAL) – ENVIRONMENTAL INTERVENTION

TOPIC: ATMOSPHERIC RESOURCES, AND AIR POLLUTION: (Climatology and Human Geography) – THE ATMOSPHERE OF LIBERIA

SPECIFIC OBJECTIVES: Upon completion of this unit students will be able to:

1. Identify and classify the different types of atmospheric resources,
2. State the importance of atmospheric resources.
3. Analyze the causes of air pollution.
4. Suggest ways of limiting the impact of air pollution.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
Appraise the reliance of man on the atmosphere. Acknowledge the consequences of misusing it.	1. Atmospheric Resources i) Definition ii) Types of atmospheric resources : a) Solar energy, b) Wind, c) Biomass, d) Atmospheric gases, etc. iii) Importance: a) Power supply b) Life sustenance c) Communication, transport, etc. iv) Problems and Solutions 2. Air Pollution i) Definition and terms, e.g. a) Pollutants,	<ol style="list-style-type: none">1. Group discussion on the effects of either smoky environment, especially on their health.2. Group discussion on air pollution.3. Invite an expert on environmental pollution to give a lecture on air pollution and control.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>C. Other Resources/Supplementary Readings</u> <ul style="list-style-type: none">• Pictures of smoggy environments in urban areas.	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Identify and classify the different types of atmospheric resources,2. State the importance of atmospheric resources.3. Analyze the causes of air pollution.4. Suggest ways of limiting the impact of air pollution.

	b) Ozone layer, c) Global warming etc. ii) Causes of air pollution iii) Effects of air pollution: a) Global warming b) Changes in the patterns of climate c) Melting of ice d) Holes in Ozone Layer e) Acid rain, f) Flooding, g) Drought, h) Deterioration of physical Man-made structures, i) Displacement of people, etc. iv) Control of air pollution. v) Case Study: Liberia's Industrial Plants (Cemenco Fishing companies, Monrovia Breweries, etc.).			
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SEMESTER: ONE

PERIOD: II

GRADE: 11

UNIT: GEOGRAPHY (PHYSICAL) – ENVIRONMENTAL INTERVENTION

TOPIC: WATER AND CLIMATE: (Climatology and Human Geography)

GENERAL OBJECTIVES: Upon completion of the unit, students will be able to:

1. Observe weather and climatic elements and the way they change, using simple activities and experiments.
2. Understand and make use of daily and seasonal weather reports.

- Account for the pattern of pattern of human activities as dictated by weather and climate.

SPECIFIC OBJECTIVES: upon completion of the topic, students will be able to :

- Differentiate between weather and climate.
- Describe the components of a weather station.
- Discuss the factors that affect weather and climate.
- Demonstrate how the elements of weather and climate are measured and recorded.
- Distinguish between the Greek's classification and Koppen's classification of climates into regions.
- Plot linear and bar graphs to represent temperature and rainfall distribution.
- Analyze climatic statistical data.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
<p>Gain basic knowledge and skills to interpret weather records and relate them to the pattern of human activities.</p> <p>Appraise climate as a prime environmental resource for development.</p> <p>Analyze climatic data and graphs for investigative comparison.</p>	<p>1. Weather</p> <ol style="list-style-type: none"> Definition. Observing the weather, The weather station, <p>2. Climate</p> <ol style="list-style-type: none"> Definition Factors affection weather and climate Measuring and recording the elements of weather and climate Classification of climates <ol style="list-style-type: none"> Greek's classification Koppen's classification Advantages and disadvantages Climatic regions <ol style="list-style-type: none"> Equatorial , Tropical, Hot desert, and Mediterranean. 	<ol style="list-style-type: none"> Collect daily or monthly temperature and rainfall records from various communities for comparison. Group students and assign each to prepare a wind vane or rain gauge. List some animal and plant species associated with each climatic or vegetation region. Plot climatic graphs for given data. Solving given problems involving range, and mean temperatures or total rainfall. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> Pictures of smoggy environments in urban areas. 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> Differentiate between weather and climate. Describe the components of a weather station. Discuss the factors that affect weather and climate. Demonstrate how the elements of weather and climate are measured and recorded. Distinguish between the Greek's classification and Koppen's classification of climates into regions. Plot linear and bar graphs to represent temperature and rainfall distribution. Analyze climatic statistical data. compare two given climatic types under the following headings: <ul style="list-style-type: none"> rainfall temperature natural vegetation primary economic activities. Plot graphs from given climatic statistical data Group students to do the following :

				<ul style="list-style-type: none"> calculate mean annual rainfall, and annual range of temperatures.
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SEMESTER: ONE

PERIOD: II

GRADE: 11

UNIT: EFFECT OF CLIMATIC ELEMENTS – (Climatology and Human Geography)

TOPIC: WEATHER AND CLIMATE

SPECIFIC OBJECTIVES: upon completion of the topic, students will be able to :

1. Define temperature.
2. State the effects of temperature on humans.
3. Identify and describe the types of rainfall.
4. Discuss each of the processes of rainfall.
5. Analyze climatic statistical data.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
<p>Gain basic knowledge and skills to interpret weather records and relate them to the pattern of human activities.</p> <p>Appraise climate as a prime environmental resource for development. analyze climatic data and graphs for investigative comparison.</p>	<p>1. Temperature i) Effects of temperature on human comfort: a) shelter b) food, and clothing</p> <p>2. Rainfall i) Types: a) conventional b) Relief c) frontal cyclonic. ii) Other forms of precipitation: dew, hail, frost, etc. iii) Processes a) insulation, b) evaporation,</p>	<ol style="list-style-type: none"> 1. Collect daily or monthly temperature and rainfall records from various communities for comparison. 2. Group students and assign each to prepare a wind vane or rain gauge. 3. List some animal and plant species associated with each climatic or vegetation region. 4. Plot climatic graphs for 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p>	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Define temperature. 2. State the effects of temperature on humans. 3. Identify and describe the types of rainfall. 4. Discuss each of the processes of rainfall. 5. Analyze climatic statistical data. 6. Compare two given climatic types under the following headings: <ul style="list-style-type: none"> • rainfall • temperature

	c) evapo-transpiration, d) water vapor formation, e) humidity, f) saturation, g) dew point, h) condensation, and i) cloud formation	given data. 5. Solving given problems involving range, and mean temperatures or total rainfall.	<ul style="list-style-type: none"> • Pictures of smoggy environments in urban areas. 	<ul style="list-style-type: none"> • natural vegetation • primary economic activities. 7. Plot graphs from given climatic statistical data. 8. Group students to do the following : <ul style="list-style-type: none"> • calculate mean annual rainfall, and annual range of temperatures.
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SEMESTER: ONE

PERIOD: II

GRADE: 11

UNIT: WEATHER AND CLIMATE – (Climatology and Human Geography)

TOPIC: ATMOSPHERIC PRESSURE AND WIND

SPECIFIC OBJECTIVES: upon completion of the topic, students will be able to:

1. Define temperature.
2. State the effects of temperature on humans.
3. Identify and describe the types of rainfall.
4. Discuss each of the processes of rainfall.
5. Analyze climatic statistical data.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
<p>Gain basic knowledge and skills to interpret weather records and relate them to the pattern of human activities.</p> <p>Appraise climate as a prime environmental resource for development.</p> <p>Analyze climatic data and graphs for investigative comparison.</p>	<p>1. Atmospheric Pressure and Wind</p> <p>i) Temperature differences as a result of :</p> <p>a) Wind direction</p> <p>b) Wind speed</p> <p>c) Pressure belts</p> <p>d) Zones of convergence</p> <p>e) Zones of divergence</p> <p>ii) Planetary wind system</p> <p>iii) Deflection of winds</p> <p>iv) Land and sea breezes</p> <p>v) Warm and cool/ cold</p> <p>vi) Currents, shape of coastline, etc.</p>	<p>1. Collect daily or monthly temperature and rainfall records from various communities for comparison.</p> <p>2. Group students and assign each to prepare a wind vane or rain gauge.</p> <p>3. List some animal and plant species associated with each climatic or vegetation region.</p> <p>4. Plot climatic graphs for given data.</p> <p>5. Solving given problems involving range, and mean temperatures or total rainfall.</p>	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Pictures of smoggy environments in urban areas. 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Define temperature. 2. State the effects of temperature on humans. 3. Identify and describe the types of rainfall. 4. Discuss each of the processes of rainfall. 5. Analyze climatic statistical data.

SEMESTER: ONE**PERIOD: III****GRADE: 11****UNIT: WEATHER AND CLIMATE – (Climatology and Human Geography)****TOPIC: PRESENTATION OF CLIMATIC DATA****SPECIFIC OBJECTIVES:** upon completion of the topic, students will be able to:

1. Calculate temperature (range, annual, monthly, mean, etc.)
2. Plot temperature graphs and charts.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
<p>Gain basic knowledge and skills to interpret weather records and relate them to the pattern of human activities.</p> <p>Appraise climate as a prime environmental resource for development.</p> <p>Analyze climatic data and graphs for investigative comparison.</p>	<p>1. Temperature:</p> <p>i) Range (annual, monthly, etc.)</p> <p>ii) Mean (annual, etc.) rainfall:</p> <p>iii) Total(annual)</p> <p>iv) Mean (monthly)</p> <p>v) Graphs</p> <p>a) linear</p> <p>b) combined</p> <p>c) bars</p> <p>vi) Charts</p> <p>a) pie</p> <p>b) proportional, etc.</p>	<ol style="list-style-type: none"> 1. Collect daily or monthly temperature and rainfall records from various communities for comparison. 2. Group students and assign each to prepare a wind vane or rain gauge. 3. List some animal and plant species associated with each climatic or vegetation region. 4. Plot climatic graphs for given data. 5. Solving given problems involving range, and mean temperatures or total rainfall. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Pictures of smoggy environments in urban areas. 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Calculate temperature (range, annual, monthly, mean, etc.) 2. Plot temperature graphs and charts.

SEMESTER: ONE**PERIOD: IV****GRADE: 11****UNIT: WEATHER AND CLIMATE – (Climatology and Human Geography)****TOPIC: NATURAL VEGETATION AND HUMAN ECONOMIC ACTIVITIES****SPECIFIC OBJECTIVES:** upon completion of the topic, students will be able to:

1. Define vegetation.
2. List and describe the different types of natural vegetation.
3. Analyze the factors that affect vegetation.
4. Describe the economic activities in Liberia that are related to the natural vegetation.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
<p>Gain basic knowledge and skills to interpret weather records and relate them to the pattern of human activities.</p> <p>Appraise climate as a prime environmental resource for development.</p> <p>Analyze climatic data and graphs for investigative comparison.</p>	<p>1. Natural Vegetation</p> <p>i) Definition</p> <p>ii) Types:</p> <p>a) Tropical Rainforest,</p> <p>b) Temperate Forest,</p> <p>c) Tropical Grassland,</p> <p>d) Temperate Grassland,</p> <p>e) Desert,</p> <p>f) Mediterranean,</p> <p>g) Montana, etc.</p> <p>iii) Characteristics</p> <p>iv) Factors affecting the development of vegetation:</p> <p>a) Climatic,</p> <p>b) Biotic,</p> <p>c) Soil, etc.</p> <p>2. Economic Human Activities</p>	<p>1. Collect daily or monthly temperature and rainfall records from various communities for comparison.</p> <p>2. Group students and assign each to prepare a wind vane or rain gauge.</p> <p>3. List some animal and plant species associated with each climatic or vegetation region.</p> <p>4. Plot climatic graphs for given data.</p> <p>5. Solving given problems</p>	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Pictures of smoggy environments in urban areas. 	<p><u>Essential tasks students should be able to do:</u></p> <p>1. Define vegetation.</p> <p>2. List and describe the different types of natural vegetation.</p> <p>3. Analyze the factors that affect vegetation.</p> <p>4. Describe the economic activities in Liberia that are related to the vegetation.</p>

	a) Primary b) Secondary c) Problems And Solutions 4. Case Study: Liberia (Forest, Mountain, Savanna, Mangrove Swamps and Marshlands).	involving range, and mean temperatures or total rainfall.		
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SEMESTER: ONE

PERIOD: IV

GRADE: 11

UNIT: POPULATION

TOPIC: WORLD POPULATION AND SETTLEMENT

GENERAL OBJECTIVES: upon completion of the unit, students will be able to:

1. Interpret the interrelations between population and settlement patterns.
2. Discuss the pattern of world population.
3. Identify reasons for the rapid growth of world population.
4. Highlight world population problems and solutions.

SPECIFIC OBJECTIVES: upon completion of the topic, students will be able to:

1. Define the concept of world population.
2. Identify densely and sparsely populated regions of the world.
3. Explain population distribution patterns of the world.
4. Distinguish between *overpopulation* and *underpopulation*.
5. Account for the merits and demerits of overpopulation and underpopulation.
6. Explain the factors which influence population movements.
7. Explain why and how population census is conducted.
8. Identify the types of settlement, and settlement patterns.
9. Explain the consequences of migration at the source and receiving regions.
10. Define family planning and empowerment.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
<p>Create awareness of the negative effects of rapid population growth.</p> <p>Acknowledge the significance of family planning in decision making.</p> <p>Advocate for the protection and care for a world population explosion in selected regions.</p> <p>Analyze related beliefs and values regarding population that need reorientation.</p> <p>Discover the interaction between population growth factors and settlement problems.</p>	<p>1. World Population</p> <ol style="list-style-type: none"> Definition Size and distribution. Factors affecting population growth: <ol style="list-style-type: none"> Improved health services Industrial activities Low mortality rate, etc. <p>2. Term Associated with Population:</p> <ol style="list-style-type: none"> Overpopulation, Underpopulation, Optimum-population density, Population census, etc. <p>3. Population Problems And Solutions</p> <ol style="list-style-type: none"> Migration: <ol style="list-style-type: none"> Definition Types Effects and control 	<ol style="list-style-type: none"> Guide students to draw maps indicating densely and sparsely population regions. Hold debates to discuss the merits and demerits of overpopulation, and underpopulation List some overpopulated and underpopulated countries. Invite an expert on immigrants to lecture on the challenges of immigrants in Liberia. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> Pictures of smoggy environments in urban areas. 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> Define the concept of world population. Identify densely and sparsely populated regions of the world. Explain population distribution patterns of the world. Distinguish between <i>overpopulation</i> and <i>underpopulation</i>. Account for the merits and demerits of overpopulation and underpopulation. Explain the factors which influence population movements. Explain why and how population census is conducted. Role play the conduct of population census on students' campus.

SEMESTER: ONE**PERIOD: IV****GRADE: 11****UNIT: POPULATION****TOPIC: SETTLEMENT****SPECIFIC OBJECTIVES:** upon completion of the topic, students will be able to:

1. Identify and describe the types of settlement, and settlement patterns.
2. Analyze the factors affecting settlement growth.
3. Explain the functions of settlements.
4. Explain the consequences of migration at the source and receiving regions.
5. Advance possible solutions to migration.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
<p>Create awareness of the negative effects of rapid population growth.</p> <p>Acknowledge the significance of family planning in decision making.</p> <p>Advocate for the protection and care for a world population explosion in selected regions.</p> <p>Analyze related beliefs and values that need reorientation.</p>	<p>1. Types of Settlement</p> <p>i) Urban :</p> <p>i) Cities</p> <p>ii) Towns</p> <p>iii) Metropolis</p> <p>iv) Satellite towns, etc.</p> <p>ii) Rural:</p> <p>a) Villages</p> <p>b) Cottages</p> <p>c) Farmstead, etc</p> <p>2. Factors Affecting Settlement Growth:</p> <p>a) Economic,</p> <p>b) Political,</p> <p>c) Social</p> <p>d) Physical topography, etc.</p>	<ol style="list-style-type: none"> 1. Guide students to draw maps indicating densely and sparsely population regions. 2. Hold debates to discuss the merits and demerits of overpopulation, and underpopulation. 3. List some overpopulated and underpopulated countries. 4. Invite an immigration expert to lecture on the challenges of 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Pictures of smoggy 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Identify and describe the types of settlement, and settlement patterns. 2. Analyze the factors affecting settlement growth. 3. Explain the functions of settlements. 4. Explain the consequences of migration at the source and receiving regions. 5. Advance possible solutions to migration.

Discover the interaction between population growth factors and settlement problems.	<p>3. Settlement Patterns:</p> <ul style="list-style-type: none"> a) Elongated or Ribbon or Linear, b) Nucleated, dispersed etc. <p>4. Settlement Functions:</p> <ul style="list-style-type: none"> a) Administrative. b) Cultural / historical. c) Industrial. d) Mining. e) Commercial. f) Nodal, etc. <p>5. Case Study : Liberia (Forms of Migration)</p> <ul style="list-style-type: none"> a) Rural-Urban, b) Urban-Rural, c) Urban-Urban d) Rural-Rural <p>6. Reasons, Problems and Control.</p> <ul style="list-style-type: none"> i) Human Resources in Liberia (problems of development and solutions). 	immigrants in Liberia.	environments in urban areas.	
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SEMESTER: ONE

PERIOD: IV

GRADE: 11

UNIT: HUMAN GEOGRAPHY - THE WORK OF MAN

TOPIC: PRIMARY INDUSTRIES

GENERAL OBJECTIVES: Upon completion of the unit, students will be able to:

1. Relate economic development to the growth of primary industries.
2. Exploit resources for sound primary industrial development.
3. Analyze the interrelationship between infrastructural development and standard of living through the development and growth of primary industry.

SPECIFIC OBJECTIVES: upon completion of the topic, students will be able to:

1. Define primary industries.
2. Identify factors affecting the development of primary industries.
3. Explain the impact of primary industries on development.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
Create awareness of the negative effects of rapid population growth. Acknowledge the significance of family planning in decision making. Advocate for the protection and care for a world population explosion in selected regions.	1. Definition of Primary Industries 2. Major Primary Industries A. Agriculture: i) Classification a) Subsistence or Commercial b) Crop or Animal Farming ii) Systems Of Farming : a) Shifting cultivation	1. Lead students to identify major primary industries in Liberia. 2. Arrange field trips to sites of primary industries. 3. Create other relevant activities, especially	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i>	<u>Essential tasks students should be able to do:</u> 1. Define primary industries. 2. Identify factors affecting the development of primary industries. 3. Explain the impact of primary industries on development. 4. Discuss the impact of primary industries on the

<p>Analyze related beliefs and values that need reorientation.</p> <p>Discover the interaction between population growth factors and settlement problems.</p>	<ul style="list-style-type: none"> b) Bush fallowing c) Mechanized farming d) Crop rotation Truck farming e) Pastoralism, Vomadism, Dairy farming, etc. <p>iii) Factors Affecting Agriculture.</p> <ul style="list-style-type: none"> a) Physical, (Soil, Climate, Etc) b) Human,(Labor, Tradition, Etc) c) Economic,(Market, d) Transportation, Etc) e) Biotic - rodents, pests, etc. <p>iv) Importance Of Agriculture</p> <p>v) Problems:</p> <ul style="list-style-type: none"> a) Production, b) Preservation, c) Distribution d) Rural depopulation, etc. <p>vi) Solutions:</p> <ul style="list-style-type: none"> a) Incentives to farmers b) Improved transport system c) Soil enrichment. d) Water management and development. e) Storage facilities, etc <p>vii) Irrigation Farming:</p> <ul style="list-style-type: none"> a) Perennial irrigation b) Basin irrigation c) Tank irrigation d) Well irrigation 	<p>health related.</p>	<p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Pictures of smoggy environments in urban areas. 	<p>health and living standards of the people in their communities.</p>
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	<ul style="list-style-type: none"> viii) Reasons for Irrigation ix) Agricultural Produce - problems and solutions x) Fruit Farming: Types of fruit farming <ul style="list-style-type: none"> a) Viticulture b) Orchard farming c) Citrus farming, etc xi) Types of fruits and their importance xii) Conditions favoring fruit farming: <ul style="list-style-type: none"> a) Climate b) . Soils, etc xiii) Problems, current trends and solutions. xiv) Plantation Agriculture <ul style="list-style-type: none"> a) Definition b) Crops involved c) Requirements for their establishment. d) Importance e) Problems, current trends and solutions. 			
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SEMESTER: TWO**PERIOD: V****GRADE: 11****UNIT: HUMAN GEOGRAPHY - THE WORK OF MAN****TOPIC: PRIMARY INDUSTRIES (COND.) - FISHING****SPECIFIC OBJECTIVES:** Upon completion of the unit, students will be able to:

1. Name and locate the major fishing grounds in Liberia and other parts of the world.
2. Describe the local and international methods of fishing.
3. State the conditions that favor fishing.
4. Discuss the importance of fishing.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
Develop a better understanding of the primary industrial activities of Liberia, especially fishing.	1. Fishing i) Major Fishing Grounds: a) The Grand Banks b) The coast of Peru c) The Sea of Japan d) The coast of West Africa e) The coast of Alaska, etc. ii) Methods of Fishing: a) Hook and line b) The use of nets c) The use of wicker baskets, etc. iii) Conditions that Favor Fishing a) Meeting of warm and cool ocean currents b) Abundance of plankton c) Indented coastline d) Tradition	1. Guide students to identify local fishing grounds. 2. Students to identify and name local fish. 3. Invite a fisherman to describe methods of fishing. 4. Display pictures of fishing vessels, and let students brainstorm on the more modern methods of large scale fishing.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>C. Other Resources/Supplementary Readings</u> <ul style="list-style-type: none"> • Pictures of smoggy environments in urban 	<u>Essential tasks students should be able to do:</u> 1. Name and locate the major fishing grounds in Liberia and other parts of the world. 2. Describe the local and international methods of fishing. 3. State the conditions that favor fishing. 4. Discuss the importance of fishing.

	e) Improved trawling systems, etc. iv) Importance of Fishing a) Source of food b) Employment opportunities c) Medicine, etc. d) Problems and solutions e) Case study v) Fishing in west Africa vi) Fishing in the Grand Banks of USA and New Foundland	5. Students should make short note on the importance of fishing.	areas.	
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SEMESTER: TWO

PERIOD: V

GRADE: 11

UNIT: HUMAN GEOGRAPHY - THE WORK OF MAN

TOPIC: PRIMARY INDUSTRIES (COND.) - MINING

SPECIFIC OBJECTIVES: Upon completion of the topic, students will be able to:

1. State what mining is.
2. Name and classify the different types of minerals.
3. Locate on a map of the world the major producing countries of the minerals identified.
4. Briefly describe the uses of each of the minerals identified.
5. Analyze the importance of mining to national economies, especially that of Liberia.
6. Discussing some of the problems facing the mining industry in Liberia and other West African states.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
Develop a better understanding of the mining activities of Liberia.	1. Mining i) Definition ii) Types of Minerals: a) Metallic (Ferrous and Non-Ferrous)	1. Use appropriate charts/pictures to get students to group mineral resources according to types.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u>	<u>Essential tasks students should be able to do:</u> 1. State what mining is. 2. Name and classify the different types of minerals.

	<p>b) Non-Metallic c) Mineral Fuels</p> <p>iii) Uses of Selected Minerals: a) Iron Ore , b) Aluminum/ Bauxite c) Silica d) Gold e) Diamonds f) Petroleum, etc.</p> <p>iv) Methods of Mining: a) Open Pit or Open Cast b) Adit c) Shaft or underground dredging d) Drilling</p> <p>v) Importance of the Mining Industry a) Provision of employment b) Provision of raw materials c) Income earning d) Source of foreign exchange e) Improved standard of living f) Construction, g) Infrastructural development, etc.</p> <p>vi) Problems and Solutions</p> <p>vii) Case Studies: a) Iron ore mining in Liberia b) Gold mining in Ghana and South Africa. c) Oil mining in the Delta Region of Nigeria. d) Copper mining in the Katanga Region of Congo DR</p>	<p>2. Draw pie charts for major mineral producing countries of world mineral resources.</p> <p>3. Students should brainstorm on the uses of the different mineral resources.</p> <p>4. Explain the importance of the Mining Industry to Liberia, and West Arica generally, using appropriate examples and with the active participation of students.</p> <p>Encourage students to develop their own lists of the problems they identify in the Mining Industry.</p>	<p>Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Pictures of smoggy environments in urban areas. 	<p>3. Locate on a map of the world the major producing countries of the minerals identified.</p> <p>4. Briefly describe the uses of each of the minerals identified.</p> <p>5. Analyze the importance of mining to national economies, especially that of Liberia.</p> <p>6. Discussing some of the problems facing the mining industry in Liberia and other West African states.</p>
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SEMESTER: TWO**PERIOD: V****GRADE: 11****UNIT: HUMAN GEOGRAPHY - THE WORK OF MAN****TOPIC: PRIMARY INDUSTRIES (COND.) - LUMBERING****SPECIFIC OBJECTIVES:** Upon completion of the topic, students will be able to:

1. State what lumbering is.
2. Name and classify the different methods of lumbering.
3. Name the choice trees in lumbering.
4. State and comment on the factors affecting lumbering in Liberia and elsewhere.
5. Discuss the importance of lumbering.
6. Propose solutions to the problems facing lumbering in Liberia

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
Develop a better understanding of the primary industrial activities of Liberia, especially lumbering.	Lumbering: i) Definition ii) Methods of exploitation: a) Tropical forests b) Temperate forests iii) Factors affecting lumbering: a) Climate b) Soil c) Biotic factors etc. d) Relief iv) Types and species of plants v) Importance Of Lumbering: a) Provision of jobs b) Construction c) Foreign exchange earner etc. vi) Problems And Solutions vii) Case Studies:	<ol style="list-style-type: none">1. Guide students to arrive at an acceptable definition of lumbering.2. Display pictures/illustrations of lumbering activities, and ask students to describe what they see.3. Provide information on methods of exploitation and factors affecting these.4. With appropriate illustrations, let students identify the types and species of plants in lumbering.5. Organize a visit to a Saw	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>C. Other Resources/Supplementary Readings</u>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Provide an acceptable definition of lumbering.2. Name and classify the different methods of lumbering.3. Name the choice trees in lumbering.4. State and comment on the factors affecting lumbering in Liberia and elsewhere.5. Discuss the importance of lumbering.6. Propose solutions to the problems facing lumbering in Liberia.

	a) Lumbering in Liberia b) Lumbering in the Congo Basin of Central Africa. c) Lumbering in West Africa	Mill for students to observe the activities, and write a report on the raw products they saw and their processing.	<ul style="list-style-type: none"> Pictures of smoggy environments in urban areas. 	
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SEMESTER: TWO

PERIOD: VI

GRADE: 11

UNIT: HUMAN GEOGRAPHY - THE WORK OF MAN

TOPIC: SECONDARY INDUSTRIES

GENERAL OBJECTIVES: upon completion of these topics, students will be able to:

1. Differentiate between secondary industrial in the developing world from those of the developed world.
2. Analyze the factors that have caused the slow development of secondary industries in the developing world.
3. Discuss the role that fuel and power play in the development of manufacturing industries.

SPECIFIC OBJECTIVES: Upon completion of the topic, students will be able to:

1. State the categories of secondary industries.
2. List the factors that affect the location of manufacturing industries.
3. Examine the impact of manufacturing industries on the health of communities.
4. Emphasize the role of secondary industries in industrial development.
5. Classify manufacturing industries and briefly describe each class.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
Attain the concept of industrial development	1. Manufacturing: i) Definition ii) Manufacturing Industries: Classification: a) Light or heavy b) Cottage or factory iii) Major Industrial Regions. iv) Factors affecting the location of	1. Guide students to engage in panel discussions on the positive and negative impacts of manufacturing industries.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i>	<u>Essential tasks students should be able to do:</u> 1. State the categories of secondary industries. 2. List the factors that affect the location of manufacturing industries. 3. Examine the impact of

	<p>manufacturing industries:</p> <ol style="list-style-type: none"> Availability of power Availability of raw materials Availability of capital Availability of labor Government policy Good transportation system Market avenues, etc. <p>v) Importance of Manufacturing Industries:</p> <ol style="list-style-type: none"> Employment opportunities Income earning Source of food Human resource development, Improved standard of living, Improved technology for infrastructural development Improved transport, etc. <p>vi) Problems Facing Manufacturing Industries:</p> <ol style="list-style-type: none"> Capital Waste disposal Air pollution from industrial fumes Marketing, etc. <p>vii) Case Studies:</p> <ol style="list-style-type: none"> Factories in Liberia Manufacturing in Southwestern Nigeria (West Africa) Manufacturing in South Africa Industrial development In North-Eastern USA. 	<ol style="list-style-type: none"> Invite local investors to give an insight into hazard assessment policy of her/his organization. Create other relevant activities, especially health related. <p>Organize field trips and excursions to selected factory plants in Liberia.</p>	<p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>C. Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> Pictures of smoggy environments in urban areas. 	<p>manufacturing industries on the health of communities.</p> <ol style="list-style-type: none"> Emphasize the role of secondary industries in industrial development. Classify manufacturing industries and briefly describe each class. Class reports from the field. Assignment on waste disposal by industries within the communities where students live, and the effects of poor disposal systems on the health of people in the communities.
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SEMESTER: TWO

PERIOD: VI

GRADE: 11

UNIT: HUMAN GEOGRAPHY - THE WORK OF MAN

TOPIC: SECONDARY INDUSTRIES

GENERAL OBJECTIVES: upon completion of these topics, students will be able to:

1. Identify and classify the different sources of energy.
2. Name the forms of energy..
3. Analyze the factors affecting sources of energy.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS/ RESOURCES	EVALUATION
Attain the concept of industrial development	1. Sources of Energy i. Classification: a) .Renewable, and b) .Non Renewable 2. Forms of Energy : Mineral Fuels (Fossil Fuels): E.g. Coal, Natural Gas, Petroleum and Uranium. 3. Location and Distribution Power Sources: Eg. Hydro _ Electric Power _ Rivers, Waterfalls, Dams Etc. a) Solar – Sunlight b) Wind c) Tidal d) Geothermal e) Underground f) Biomass - Organic Organisms 4. Factors Affecting Sources	1. Guide students to engage in panel discussions on the positive and negative impacts of manufacturing industries. 2. Invite local investors to give an insight into hazard assessment policy of his organization. 3. Create other relevant activities, especially health related. 4. Organize field trips	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 2</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>C. Other Resources/Supplementary Readings</u> <ul style="list-style-type: none"> • Pictures of smoggy environments in urban 	<u>Essential tasks students should be able to do:</u> 1. Identify and classify the different sources of energy.. 2. Name the forms of energy.. 3. Analyze the factors affecting sources of energy. 4. Write reports on fieldwork.

	of Energy. a) Capital, b) Technology, c) Climate, Etc.	and excursions to selected factory plants in Liberia.	areas.	
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SEMESTER: ONE

PERIOD: I

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: KINDS OF MAPS AND THEIR USES

GENERAL OBJECTIVES: upon completion of these topics, students will be able to:

1. Read and interpret maps of various kinds in detail.
2. Explain map features, such as, scale, legend and contours to be able to interpret maps information.
3. Calculate land areas, visualize slopes and find directions and positions of places on maps
4. Interpret graphical representation of Statistical data
5. Demonstrate a full understanding of ordinance survey maps
6. Demonstrate in practice elementary surveying methods and field practices
7. Analyze Geographic information system and data using remote sensors

SPECIFIC OBJECTIVES: Upon completion of the topics, students will be able to:

1. Read and explain map information
2. Distinguish and identify the various kinds of maps.
3. Use map scales to reduce, enlarge, and calculate areas and ground distances of maps.
4. Calculate the gradient of slopes.
5. Convert from one scale to another
6. Locate the positions of places using the grid system, or longitudes and latitudes.
7. Locate directions using the compass and bearing.
8. Demonstrate skills and techniques to prepare diagrams, profiles and sketches resulting from survey exercises.

OUTCOMES / OBJECTIVES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Grasp the concept of maps.</p> <p>Recognize the importance of maps in traveling, especially for adventure or tourism.</p> <p>Gain broader understanding of the use of maps.</p> <p>Give clear geographical directions.</p> <p>Recognize and appreciate the work of Cartographers.</p> <p>Appreciate the role of Surveyors in the community.</p>	<p>1. Map – A Definition</p> <p>2. Map Characteristics</p> <p>3. Types of Maps: Road maps, Weather maps, Atlases, Topographical maps etc</p> <p>4. Importance/Uses of Maps:</p> <p>a) Give information</p> <p>b) Identify landscape</p> <p>c) Interpret landscape</p> <p>d) Find directions and positions</p> <p>e) Find distances, etc</p> <p>5. Limitations of Maps</p>	<p>1. Guide students to:</p> <p>a. Draw maps to scale.</p> <p>b. Reduce and enlarge maps and Scales.</p> <p>c. Practice the uses of rulers, protractors and strings.</p> <p>2. Invite an expert to talk to students on the importance and limitations of Maps.</p> <p>3. Determine Positions from map extracts.</p> <p>4. Determine bearings using the prismatic compass.</p>	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Read and explain map information 2. Distinguish and identify the various kinds of maps. <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Emphasize practical seatwork • Reports of visual observation of land forms • Exercises on conversion of scales and linear scale construction

SEMESTER: ONE**PERIOD: I****GRADE: 12****UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)****TOPIC: MAP SCALES****SPECIFIC OBJECTIVES:**

Upon completion of this topic, students will be able to:

1. Use map scales to reduce, enlarge, and calculate areas and ground distances of maps.
2. Calculate the gradient of slopes.
3. Convert from one scale to another
4. Locate the positions of places using the grid system, or longitudes and latitudes.
5. Locate directions using the compass and bearing.
6. Demonstrate skills and techniques to prepare diagrams, profiles and sketches resulting from survey exercises.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
1. Grasp the concept of maps. 2. Recognize the importance of maps in traveling, especially for adventure or tourism. 3. Gain broader understanding of the use of maps. 4. Give clear geographical directions. 5. Recognize and appreciate the work of Cartographers. 6. Appreciate the role of	1. Definition of Map Scale 2. Types of Map Scales: 3. Statement Scale 4. Representative Fraction 5. Linear Scale 6. Advantages and Disadvantages of each type of scale 7. Characteristics of each type of Scale 8. Conversion of Map Scales a) From Statement to R.F. b) From Statement to Linear c) From R.F. to Statement d) From R.F. to Linear e) From Linear to Statement f) From Linear to R.F.	1. Guide students to: a) Draw maps to scale. b) Reduce and enlarge maps and Scales. c) Practice the uses of rulers, protractors and strings. 2. Invite an expert to talk to students on the importance and limitations of Maps. 3. Determine Positions from map extracts. 4. Determine bearings using the prismatic compass.	A. Primary Text <i>General Geography in Diagrams</i> (Pearson) B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> Other Resources/Supplementary Readings	<u>Essential tasks students should be able to do:</u> <ul style="list-style-type: none">• Emphasize practical seatwork• Reports of visual observation of land forms• Exercises on conversion of scales and linear scale construction -

Surveyors in the community.			<ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	
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SEMESTER: ONE

PERIOD: I

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: MEASUREMENT OF DISTANCES AND AREAS

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Use map scales to reduce, enlarge, and calculate areas and ground distances of maps.
2. Calculate the gradient of slopes.
3. Convert from one scale to another.
4. Accurately measure straight and curved distances.
5. Accurately measure regular and irregular shapes

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Grasp the concept of maps.</p> <p>Recognize the importance of maps in traveling, especially for adventure or tourism.</p> <p>Gain broader</p>	<ol style="list-style-type: none"> 1. Measurement of Straight Distances 2. Measurement of Curved Distances 3. Measurement of Regular Shapes 4. Measurement of Irregular Shapes 	<ol style="list-style-type: none"> 1. Guide students to: <ol style="list-style-type: none"> a) Draw maps to scale. b) Reduce and enlarge maps and Scales. c) Practice the uses of rulers, protractors and strings. 2. Invite an expert to talk to students on the importance 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p>	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Use map scales to reduce, enlarge, and calculate areas and ground distances of maps. 2. Calculate the gradient of slopes.

<p>understanding of the use of maps.</p> <p>Give clear geographical directions.</p> <p>Recognize and appreciate the work of Cartographers.</p> <p>Appreciate the role of Surveyors in the community.</p>		<p>and limitations of Maps.</p> <p>3. Determine Positions from map extracts.</p> <p>4. Determine bearings using the prismatic compass.</p>	<p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>3. Convert from one scale to another.</p> <p>4. Accurately measure straight and curved distances.</p> <p>5. Accurately measure regular and irregular shapes</p> <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Emphasize practical seatwork. • Reports of visual observation of land forms.
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SEMESTER: ONE

PERIOD: I

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: MAP REDUCTION AND ENLARGEMENT

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Correctly go through the steps of map reduction.
2. Correctly go through the steps of map enlargement.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Grasp the concept of maps.	1. Map Reduction Steps: (a) Measuring length and width (b) Multiplying each measurement by scale	1. Guide students to: a) Draw maps to scale. b) Reduce and enlarge maps and	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)	<u>Essential tasks students should be able to do:</u>

<p>Recognize the importance of maps in traveling, especially for adventure or tourism.</p> <p>Gain broader understanding of the use of maps.</p> <p>Give clear geographical directions.</p> <p>Recognize and appreciate the work of Cartographers.</p> <p>Appreciate the role of Surveyors in the community.</p>	<p>factor of reduction (c) Scale reduction(Calculation)</p> <p>2. Map Enlargement steps: (a) Measuring length and width (b) Multiplying length and Width (c) Multiplying each measurement by the scale factor of enlargement (d) Scale enlargement(Calculation) (e) Drawing of Outlines</p>	<p>Scales. c) Practice the uses of rulers, protractors and strings.</p> <p>2. Invite an expert to talk to students on the importance and limitations of Maps.</p> <p>3. Determine Positions from map extracts</p> <p>4. Determine bearings using the prismatic compass.</p>	<p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>1. Correctly go through the steps of map reduction.</p> <p>2. Correctly go through the steps of map enlargement.</p> <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Emphasize practical seatwork. • Reports of visual
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SEMESTER: ONE

PERIOD: I

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: POSITION AND DIRECTION

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Locate positions using Latitudes.

2. Tell direction using the compass points and the Angular Bearings.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Grasp the concept of maps.</p> <p>Recognize the importance of maps in traveling, especially for adventure or tourism.</p> <p>Gain broader understanding of the use of maps.</p> <p>Give clear geographical directions.</p> <p>Recognize and appreciate the work of Cartographers. Appreciate the role of Surveyors in the community.</p>	<p>1. Locate Position using Latitudes.</p> <p>2. Locate Position using Grid References</p> <p>3. Direction:</p> <p>a) Using the compass points.</p> <p>b) Using the Angular Bearings</p> <p>c) Using the compass points and Bearings</p> <p>4. Types of North:</p> <p>a) Magnetic</p> <p>b) True</p> <p>c) Grid</p>	<p>1. Guide students to:</p> <p>a) Draw maps to scale.</p> <p>b) Reduce and enlarge maps and Scales.</p> <p>c) Practice the uses of rulers, protractors and strings.</p> <p>2. Invite an expert to talk to students on the importance and limitations of Maps.</p> <p>3. Determine positions from map extracts.</p> <p>4. Determine bearings using the prismatic compass.</p>	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p><u>Essential tasks students should be able to do:</u></p> <p>1. Locate positions using Latitudes.</p> <p>2. Tell direction using the compass points and the Angular Bearings.</p> <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Emphasize practical seatwork. • Reports of visual exercises on conversion of Scales and linear scale construction

SEMESTER: ONE

PERIOD: I

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: CONVENTIONAL SIGNS

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Give a correct definition of *conventional signs and symbols*.
2. Identify and describe the types of signs and symbols.
3. State the importance and uses of conventional signs and symbols.
4. State the limitations of conventional signs and symbols.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Grasp the concept of maps.</p> <p>Recognize the importance of maps in traveling, especially for adventure or tourism.</p> <p>Gain broader understanding of the use of maps.</p> <p>Give clear geographical directions.</p> <p>Recognize and appreciate the work of Cartographers.</p>	<p>1. Definition of Conventional Signs and Symbols.</p> <p>2. Types of Signs and Symbols:</p> <ol style="list-style-type: none"> a) Point symbols b) Line symbols c) Literal symbols d) Pictorial symbols e) Color symbols <p>3. Importance and Uses of Conventional Signs and Symbols.</p> <p>4. Limitation in the Use of Signs and Symbols.</p>	<ol style="list-style-type: none"> 1. Guide students to: <ul style="list-style-type: none"> - Draw maps to scale. - Reduce and enlarge maps and Scales. - Practice the uses of rulers, protractors and strings. 2. Invite an expert to talk to students on the importance and limitations of Maps. 3. Determine Positions from map extracts. 4. Determine bearings using the prismatic compass. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/ Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Give a correct definition of <i>conventional signs and symbols</i>. 2. Identify and describe the types of signs and symbols. 3. State the importance and uses of conventional signs and symbols. 4. State the limitations of

Appreciate the role of Surveyors in the community.			Cartographic maps <ul style="list-style-type: none"> • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	conventional signs and symbols. <u>Other essential evaluation tools:</u> <ul style="list-style-type: none"> • Emphasize practical seatwork. • Reports of visual exercises on conversion of Scales and linear scale construction -
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SEMESTER: ONE

PERIOD: II

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: METHODS OF REPRESENTATING RELIEF

GENERAL OBJECTIVES: Upon completion of the topics in this unit, students will be able to:

1. Demonstrate full knowledge of relief features, and identify them.
2. Draw relief profiles of depressions, uplands or elevations and explain their existence.
3. Explain drainage, settlement and landforms in relation to human activities.
4. Relate communication to relief and settlement.
5. Explain the role of graphical representation as a geography tools.

SPECIFIC OBJECTIVES: Upon completion of this topic, students will be able to:

1. Draw profiles to represents common contour landforms.
2. Examine the interaction of settlement patterns, communication and land use.
3. Distinguish the characteristics features of the different methods of showing relief on Maps.
4. Discuss the sources of statistical data.
5. Explain the advantages and disadvantages of the various kinds of graphs.
6. Discuss the advantages and disadvantages of the different methods of showing relief.
7. Calculate contour intervals, and use them to number the unnumbered contour.
8. Demonstrate how to draw cross- section; process and techniques.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	# OF DAYS	EVALUATION
Appreciate the work of cartographers	Relief Representing <ol style="list-style-type: none"> Hachure Hill shading Layers coloring hinting. Spot heights Trigonometrically spots/stations Simple, pictorial methods. Limitations 	<ol style="list-style-type: none"> Study map extracts and: <ul style="list-style-type: none"> Point out the nature of each landform. Draw cross- sections clearly. Represent statical data in geographical forms. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> Sample of Cartographic maps Extracts of Liberia Atlases. Geometric sets Pencil String, etc 	- Four days per week	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> Draw profiles to represent common landforms. Draw relief profiles of depressions, uplands or elevations and explain their existence <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> Emphasize practical seatwork. Reports of visual exercises on conversion of Scales and linear scale construction - <p>-</p>

SEMESTER: ONE

PERIOD: II

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: SIMPLE CONTOUR LANDFORMS

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define contours.
2. Identify and describe the different contour landforms.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the work of cartographers	<p>1. Contours:</p> <ol style="list-style-type: none"> i. Definition ii. Contour iii. Slope <ol style="list-style-type: none"> a) Concave b) Convex c) Steep, d) Gentle, etc <p>2. Contour Landforms:</p> <ol style="list-style-type: none"> i. Plateau ii. Ridge iii. Valley iv. Spur 	<ol style="list-style-type: none"> 1. Study map extracts and: <ul style="list-style-type: none"> • Point out the nature of each landform. • Draw cross- sections clearly. • 2. Represent statically data in geographical forms. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Define contours. 2. Identify and describe the different contour landforms. 3. Draw cross sections clearly. <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Emphasize practical seatwork. • Reports of visual exercises on conversion of Scales

			<ul style="list-style-type: none"> • Geometric sets • Pencil • String, etc 	and linear scale construction Exercise on map skills and techniques
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SEMESTER: ONE

PERIOD: II

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: CONTOUR LANDFORMS (Cond.)

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Identify and describe the different contour landforms.
2. Define gradient.
3. Use the appropriate formula to calculate gradient.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the work of cartographers	Contour Landforms (Cond.) <ol style="list-style-type: none"> i. Col/ Saddle ii. Pass/ Gap iii. Knoll, iv. Cuesta, Gradient <ol style="list-style-type: none"> i. Definition ii. Calculation of Gradient iii. Formula iv. Vertical Exaggeration v. Cross sectional Drawing vi. Framework, vii. Alignment, viii. Intervisibility, identification of 	<ol style="list-style-type: none"> 1. Study map extracts and: <ul style="list-style-type: none"> • Point out the nature of each landform. • Draw cross- sections clearly. • 2. Represent statically data in geographical forms. 	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>Other</u>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> 1. Identify and describe the different contour landforms. 2. Define gradient. 3. Use the appropriate formula to calculate gradient. <u>Other essential evaluation tools:</u>

	terminal points, marking intervening contours, vertical scale, etc.		<u>Resources/Supplementary Readings</u> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<ul style="list-style-type: none"> • Emphasize practical seatwork. • Reports of visual exercises on conversion of Scales and linear scale construction Exercise on map skills and techniques
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SEMESTER: ONE

PERIOD: II

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: DRINAGE AND RIVER BASINS

SPECIFIC OBJECTIVES:

Upon completion of this topic, students will be able to:

1. Define drainage.
2. Identify and describe the drainage systems.
3. Describe the types of drainage patterns.
4. State the influence of drainage on settlement and communication.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the work of cartographers	1. Definition of Drainage 2. Drainage Systems <ul style="list-style-type: none"> • Island drainage, • River capture, etc 5. Types of Drainage Patterns <ul style="list-style-type: none"> • Dendrite 	<ol style="list-style-type: none"> 1. Study map extracts and: <ul style="list-style-type: none"> • Point out the nature of each landform. • Draw cross- sections clearly. 2. Represent statically data in geographical forms. 	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> 1. Define drainage. 2. Identify and describe the drainage systems. 3. Describe the types of drainage

	<ul style="list-style-type: none"> • Trellis, • Radial, etc - River Profile • Upper course • Middle course, • Lower course <p>6. Influence of Drainage on Settlement</p> <p>7. Influence of Drainage on Communication</p>		<p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>patterns.</p> <p>4. State the influence of drainage on settlement and communication.</p> <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Emphasize practical seatwork. • Reports of visual exercises on conversion of Scales and linear scale construction Exercise on map skills and techniques
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SEMESTER: ONE

PERIOD: II

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: SETTLEMENT

SPECIFIC OBJECTIVES: Upon completion of this topic, students will be able to:

1. Define settlement.
2. Name the types of settlements.
3. State the factors that affect settlement location.
4. Describe the different settlement patterns
5. Analyze the functions of settlements.
6. Describe the influence of drainage, communication, and relief on settlement.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the work of cartographers	1. Definition 2. Types of Settlement <ul style="list-style-type: none"> Urban Rural 3. Factors Affecting Settlement Location. 4. Settlement Patterns <ul style="list-style-type: none"> Nucleated Linear/Elongated,/Ribbon Dispersed Isolated 5. Settlement Functions <ul style="list-style-type: none"> Nodal Administrative Religious Cultural Industrial, Mining Commercial, etc Impact of drainage and communication on settlement. Impact of relief on settlement. Hints on map interpretation <ul style="list-style-type: none"> Divide topographical maps into physical regions. Descriptions of the physical regions Interpret cultural features Analyze natural vegetation, settlement and communication network. Suggest the kinds of possible economic activities. Account for the functions and importance of settlements. Compare and contrast physical regions. 	1. Study map extracts and: <ul style="list-style-type: none"> Point out the nature of each landform. Draw cross- sections clearly. 2. Represent statically data in geographical forms.	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>Other Resources/Supplementary Readings</u> <ul style="list-style-type: none"> Sample of Cartographic maps Extracts of Liberia Atlases. Geometric sets Pencil String, etc 	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> Define settlement. Name the types of settlements. State the factors that affect settlement location. Describe the different settlement patterns Analyze the functions of settlements. Describe the influence of drainage, communication, and relief on settlement. <u>Other essential evaluation tools:</u> <ul style="list-style-type: none"> Emphasize practical seatwork. Reports of visual exercises on conversion of Scales and linear scale construction Exercise on map skills and techniques Exercise on map skills and techniques <ul style="list-style-type: none"> Reports on the importance and disadvantages of relief to human settlement and communication Draw graphs to represent various data

SEMESTER: ONE

PERIOD: II

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: GRAPHICAL REPRESENTATION OF STATISTICAL DATA

SPECIFIC OBJECTIVES: Upon completion of this topic, students will be able to:

1. Discuss the sources of statistical data.
2. Draw different kinds of graphs based on statistical data.
3. Explain the advantages and disadvantages of the various kinds of graphs.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the work of cartographers	<p>1. Sources of Statistical Data.</p> <p>2. The Use of Statistics and Diagrams.</p> <p>3. Limitations of Statistics</p> <p>4. Tabulation of Statistics</p> <p>5. Graphical Representation of Statistics</p> <ul style="list-style-type: none">• Choice of scale• The use of squared- paper in representing statistical data <p>Types of Diagrams:</p> <ul style="list-style-type: none">• Line graphs (simple line graph, combine line graph, and compound	<ol style="list-style-type: none">1. Study map extracts and:<ul style="list-style-type: none">• Point out the nature of each landform.• Draw cross- sections clearly.2. Represent statically data in geographical forms.	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Suppleme</u></p>	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none">1. Discuss the sources of statistical data.2. Draw different kinds of graphs based on statistical data.3. Explain the advantages and disadvantages of the various kinds of graphs. <p><u>Other essential</u></p>

	<p>line graph)</p> <ul style="list-style-type: none"> • Advantages and Disadvantages • Bar graphs (histograms, simple bar graph, divergent bar graphs, and percentage bar graphs). • Circle graphs (pie charts, proportional pie charts, and proportional circles). • Advantages and Disadvantages 		<p><u>ntary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p><u>evaluation tools:</u> <u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Emphasize practical seatwork. • Reports of visual exercises on conversion of Scales and linear scale construction Exercise on map skills and techniques Exercise on map skills and techniques Reports on the importance and disadvantages of relief to human settlement and communication Draw graphs to represent various data
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SEMESTER: ONE

PERIOD: III

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: ELEMENTARY SURVEYING

GENERAL OBJECTIVES: Upon completion of the topics, students will be able to:

1. Demonstrate an understanding of the basics of elementary surveying.
2. Apply and use surveying instruments.
3. Explain the basic concept of Geographic information system.
4. Perform practical field survey exercises.
5. Discuss the importance of surveying and its application in real life situations.

SPECIFIC OBJECTIVES: Upon completion of the topics, students will be able to:

1. Identify the instruments used by surveyors in surveying.
2. Demonstrate skills and techniques of survey on the field.
3. Prepare diagrams, profiles and sketches resulting from survey exercises.
4. Identify obstacles in ranging and chaining
5. State the components of Geographic information System (GIS).

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the role of surveyors in the community	1. Meaning of Land Survey. 2. Branches of Land Survey: <ul style="list-style-type: none">• Topographic• Engineering• Geodetic, etc 3. Kinds of Land Survey: <ul style="list-style-type: none">• Chain survey• Prismatic survey• Aerial survey	<ol style="list-style-type: none">1. Have students survey the school compound, or play ground, and<ul style="list-style-type: none">• Prepared a sketch draft of the survey• Draw a map extract of the school grounds2. Field data collection for analysis, eg lines of rivers, points of wells, farms, etc	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Identify surveying instruments.2. Demonstrate the techniques of survey on the field.3. Prepare diagrams, profiles and sketches resulting

	<ul style="list-style-type: none"> • Triangulation, etc <p>4. Equipment and Materials:</p> <ul style="list-style-type: none"> • Field notebook, • Arrows, • Tape rule • Ranging poles, etc <p>Importance of Land Surveying.</p>		<p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>from survey exercise.</p> <p><u>Other essential evaluation tools:</u> <u>Other essential evaluation tools:</u></p> <p>Regular assessment of both theoretical and practical field exercise -Reports on field work on the sources of GIS and the importance of georeferencing.</p>
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SEMESTER: ONE

PERIOD: III

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: CHAIN SURVEYING

SPECIFIC OBJECTIVES: Upon completion of the topics, students will be able to:

1. Define Chain Survey.
2. Describe the instruments used in Chain Survey.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the role of surveyors in the community	<p>1. Definition of Chain Survey</p> <p>2. Description and uses of Chain Survey Equipment</p>	1. Have students survey the school compound, or play ground, and Prepared a sketch draft of the survey	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)	<p><u>Essential tasks students should be able to do:</u></p> <p>1. Define Chain</p>

	<ul style="list-style-type: none"> • Ranging poles • Arrows • Measuring tape • Off-set, etc 	<p>Draw a map extract of the school grounds</p> <p>2. Field data collection for analysis, eg lines of rivers, points of wells, farms, etc</p>	<p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>Survey.</p> <p>2. Describe the instruments used in Chain Survey.</p> <p><u>Other essential evaluation tools:</u> <u>Other essential evaluation tools:</u> Regular assessment of both theoretical and practical field exercise -Reports on field work on the sources of GIS and the importance of georeferencing.</p>
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SEMESTER: ONE

PERIOD: III

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: FIELD WORK OF CHAIN SURVEYING

SPECIFIC OBJECTIVES: Upon completion of the topic, students will be able to:

1. Demonstrate the skills and techniques involved in chain survey.
2. Describing the obstacles encountered in chain survey.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the role of surveyors in the community	<ol style="list-style-type: none"> 1. Reconnaissance 2. North Point 3. Choice of Stations 4. Measurement on sloping land 5. Obstacles Obstructing Ranging and Chaining: <ul style="list-style-type: none"> • Booking • Plotting • Sources of Errors, etc <ol style="list-style-type: none"> Advantages and disadvantages of chain surveying 	<ol style="list-style-type: none"> Have students survey the school compound, or play ground, and Prepared a sketch draft of the survey Draw a map extract of the school grounds Field data collection for analysis, eg lines of rivers, points of wells, farms, etc 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> Demonstrate the skills and techniques involved in chain survey. Describing the obstacles encountered in chain survey. <p><u>Other essential evaluation tools:</u> <u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Regular assessment of both theoretical and practical field exercise. • Reports on field work on the sources of GIS and the importance of georeferencing.

SEMESTER: ONE**PERIOD: III****GRADE: 12****UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)****TOPIC: TRAVERSE OR COMPASS SURVEYING****SPECIFIC OBJECTIVES:** Upon completion of the topic, students will be able to:

1. Define traverse or compass surveying.
2. Name and describe the types of traverse surveying.
3. Identify the equipment of traverse surveying and describe their uses.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the role of surveyors in the community	1. Definition 2. Types of Traverse surveying: Closed traverse Open traverse 3. Methods of Traverse surveying: Line Chain Theodolite Compass, etc 4. Description and uses of Traverse Equipment: <ul style="list-style-type: none"> • Prismatic compass • Ranging compass • Field notebook, etc 	1. Have students survey the school compound, or play ground, and Prepared a sketch draft of the survey Draw a map extract of the school grounds 2. Field data collection for analysis, eg lines of rivers, points of wells, farms, etc	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>Other Resources/Supplementary Readings</u> <ul style="list-style-type: none"> • Sample of Cartographic 	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> 1. Define traverse or compass surveying. 2. Name and describe the types of traverse surveying. 3. Identify the equipment of traverse surveying and describe their uses. <u>Other essential evaluation tools:</u> <u>Other essential evaluation tools:</u> <ul style="list-style-type: none"> • Regular assessment of both theoretical and

			maps <ul style="list-style-type: none"> • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	practical field exercise. <ul style="list-style-type: none"> • Reports on field work on the sources of GIS and the importance of georeferencing.
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SEMESTER: ONE

PERIOD: III

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: FIELD WORK ON USING A COMPASS TRAVERSE

SPECIFIC OBJECTIVES: Upon completion of the topic, students will be able to:

1. Demonstrate the skills and techniques involved in compass surveying.
2. List and discuss the possible errors of closing.
3. State the advantages and disadvantages of compass surveying.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the role of surveyors in the community	1. Plotting the Survey 2. Error of Closure - Possible Reasons for the Closing of Error. 3. How to Avoid Closing of Error on the Field 4. Adjusting the Closing 5. Advantages and Disadvantages	<ol style="list-style-type: none"> 1. Have students survey the school compound, or play ground, and <ol style="list-style-type: none"> a. Prepared a sketch draft of the survey b. Draw a map extract of the school grounds 2. Field data collection for analysis, eg lines of rivers, points of wells, farms, etc 	A. Primary Text <i>General Geography in Diagrams</i> (Pearson) B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> 1. Demonstrate the skills and techniques involved in compass surveying. 2. List and discuss the possible errors of closing. 3. State the advantages and disadvantages of compass surveying. <u>Other essential evaluation tools:</u>

			<p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Regular assessment of both theoretical and practical field exercise. • Reports on field work on the sources of GIS and the importance of georeferencing.
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SEMESTER: ONE

PERIOD: III

GRADE: 12

UNIT: GEOGRAPHY (PRACTICAL AND REGIONAL)

TOPIC: BASIC CONCEPTS OF GIS

SPECIFIC OBJECTIVES: Upon completion of the topic, students will be able to:

1. Give the definition of GIS.
2. Name the sources of geographical data.
3. State the importance of geographical data and the GIS.
4. Name the components of GIS.
5. Outline the procedure of GIS.
6. Explain the relationship between GIS and remote sensing.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the role of surveyors in the community	<p>Meaning of Geographic Information System.</p> <p>Geographic Data:</p> <p>Sources of GIS:-Maps, fields work, satellite images, etc</p> <p>Importance of Geographic Data and The GIS</p> <p>Components of GIS Hardware:</p> <ul style="list-style-type: none"> • Digitizer • Printer • Scanner, etc <p>Software :</p> <ul style="list-style-type: none"> • Data input • Storage <ul style="list-style-type: none"> • Retrieval and Manipulation, etc <p>Procedures:</p> <ul style="list-style-type: none"> • Set of rules • People <p>Satellite Remote Sensing - Definition of Concepts</p> <ul style="list-style-type: none"> • Remote sensing • Satellite remote sensing <p>Application of Satellite Remote Sensing:</p> <ul style="list-style-type: none"> • Environment, forestry, agriculture, telecommunications, transportation, emergency response, etc <p>Relationship between GIS and Remote Sensing</p> <ul style="list-style-type: none"> • GIS Applications: • Agriculture • Urban development • Mapping 	<ol style="list-style-type: none"> 1. Have students survey the school compound, or play ground, and Prepared a sketch draft of the survey Draw a map extract of the school grounds 2. Field data collection for analysis, eg lines of rivers, points of wells, farms, etc 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Give the definition of GIS. 2. Name the sources of geographical data. 3. State the importance of geographical data and the GIS. 4. Name the components of GIS. 5. Outline the procedure of GIS. 6. Explain the relationship between GIS and remote sensing. <p><u>Other essential evaluation tools:</u> <u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Regular assessment of both theoretical and practical field exercise. • Reports on field work on the sources of GIS and the importance of georeferencing.

	<ul style="list-style-type: none"> • Surveying Problems with GIS Implementation: <ul style="list-style-type: none"> • Power • Personnel • Capital (High cost of hardware and software) 			
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SEMESTER: TWO

PERIOD: IV

GRADE: 12

UNIT: REGIONAL GEOGRAPHY OF LIBERIA AND THE REST OF AFRICA

TOPIC: LOCATION, POSITION, SIZE AND RELIEF AND DRAINAGE

GENERAL OBJECTIVES: Upon completion of the topics in this unit, students will be able to:

1. Analyze the impact of climate and vegetation on human activities.
2. Examine the impact of urbanization in Liberia and Africa.
3. Discuss the contribution of the primary economy sector to Africa's economy.
4. Suggest measures to improve secondary and tertiary activities of Africa's economy at large.
5. Analyze the numerous problems facing the geographical regions of Africa.
6. Account for the inter-relationship between physical features and the pattern of human activities in Liberia.
7. Acknowledge the impact of natural and physical features on the life of the people of Liberia.
8. Analyze the importance of conserving land, water and atmospheric resources that must not be misused.

SPECIFIC OBJECTIVES: Upon completion of the topics, students will be able to:

1. Identify the five geographical regions of Liberia and the rest of Africa
2. Account for the importance of physical features of Liberia and the other geographical regions of Africa.
3. Outline factors that influence climate and vegetation in the lives of the people of the continent.
4. Identify soil types and their uses.
5. Suggest preventive measures to limit the impact of unsound human practices that lead to soil erosion, degradation and depletion

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Acknowledge the impact of the natural physical features on the human activities of Liberians.</p> <p>Acquire positive attitude towards economic policies and protocols.</p> <p>Develop a new outlook on environmental resource usage.</p>	<p>1. Location, Position and Size of Liberia</p> <p>ii. Location in relation to the continent of Africa</p> <p>iii. Geographical position (latitude and longitudes)</p> <p>iv. Total Area of Liberia</p> <p>v. Outlying features</p> <p>vi. Political division of Liberia</p> <p>vii. Counties and their Administrative capitals</p> <p>2. Relief of Liberia</p> <p>i. Geology</p> <ul style="list-style-type: none"> • Pre-Cambrian rocks, • Young deposits, etc <p>ii. Relief zones:</p> <ul style="list-style-type: none"> • Coastal plain • Belt of rolling hills • High mountains and plateaus • Northern highlands <p>iii. Island of Liberia</p> <p>iv. Importance of the Relief:</p> <ul style="list-style-type: none"> • Mineral deposit • Construction, • Employment opportunities • Agriculture, etc <p>v. Demerits of the Relief:</p> <ul style="list-style-type: none"> • Difficulty of construction, • Presence of wild animals, • Isolation, etc <p>Drainage:</p> <p>i. Drainage system</p>	<p>Guide students to:</p> <ol style="list-style-type: none"> 1. Locate Liberia on the map of Africa/West Africa. 2. Describe the relief of Liberia. 3. Identify and describe the drainage system and lakes of Liberia. 4. Organize, where possible, visits to relevant sites. 	<p>A. Primary Text <i>General Geography in Diagrams</i> (Pearson)</p> <p>B. Secondary Texts Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p>Other Resources/Supplementary Readings</p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>Essential tasks students should be able to do:</p> <ol style="list-style-type: none"> 1. Identify the five geographical regions of Liberia and the rest of Africa 2. Account for the importance of physical features of Liberia and the other geographical regions of Africa. 3. Outline factors that influence climate and vegetation in the lives of the people of the continent. <p>Other essential evaluation tools:</p> <p>Other essential evaluation tools:</p> <ul style="list-style-type: none"> • Emphasize research reporting and discussing skills in addition to regular continuous assessment. • Sketch the political maps of Liberia. • Sketch the map of

	<p>ii. Principal Rivers:</p> <ul style="list-style-type: none"> - The Cavalla - St. John - St. Paul - Lofa River - Mano River, and - Cestos River <p>iii. Characteristics of Liberia's rivers:</p> <ul style="list-style-type: none"> - Drainage pattern - Regime of rivers <p>iv. Importance of Rivers of Liberia:</p> <ul style="list-style-type: none"> • Source of fish (food) • Recreation, • Employment , • Income generation • Provision of water for domestic and industrial use, etc. <p>v. Limitations of Liberia's Rivers:</p> <ul style="list-style-type: none"> • Seasonality • Waste dumping, • Chemical contamination, etc <p>Lakes of Liberia</p> <p>i. Natural:</p> <ul style="list-style-type: none"> - Lake Piso - Lake shepherd <p>ii. Man-made:</p> <p>iii. Importance of Lakes of Liberia:</p> <ul style="list-style-type: none"> - Fishing - Employment - Recreational - Tourist attraction, etc <p>iv. Demerits of Lakes in Liberia</p>			Liberia showing the rivers of Liberia
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SEMESTER: TWO**PERIOD: IV****GRADE: 12****UNIT: REGIONAL GEOGRAPHY OF LIBERIA AND THE REST OF AFRICA****TOPIC: CLIMATE, NATURAL VEGETATION, SOILS, POPULATION AND SETTLEMENT****SPECIFIC OBJECTIVES:** Upon completion of the topics, students will be able to:

1. Define climate and name the factors that affect it.
2. Describe the vegetation zones of Liberia, and account for the factors that affect vegetation.
3. Name the soil types of the country and analyze the causes of soil erosion.
4. Describe the settlement pattern of Liberia.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Acknowledge the impact of the natural physical features on the human activities of Liberians.</p> <p>Acquire positive attitude towards economic policies and protocols.</p> <p>Develop a new outlook on environmental resource usage.</p>	<p>1. Climate of Liberia</p> <p>i. Factors affecting climate:</p> <ul style="list-style-type: none"> • Location • Pressure belts • Relief • Direction/shape of coastline, etc. • Rainfall and temperature distribution <p>ii. The climatic seasons:</p> <ul style="list-style-type: none"> • Wet • Dry <p>iii. Impact of climate on economic activities.</p> <p>2. Natural Vegetation of Liberia</p> <p>i. Factors affecting vegetation:</p> <ul style="list-style-type: none"> • Climate • Soils • Relief etc 	<p>Guide students to:</p> <ol style="list-style-type: none"> 1. Analyze various factors affecting climate. 2. Identify the natural vegetation of the country, and locate them. 3. Identify soil types, and locate them. 4. Discuss settlement patterns and what determine them. 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Define climate and name the factors that affect it. 2. Describe the vegetation zones of Liberia, and account for the factors that affect vegetation. 3. Name the soil types of the country and analyze the causes of soil erosion. 4. Describe the settlement pattern of Liberia.

	<p>iii. Vegetation zones:</p> <ul style="list-style-type: none"> • Rainforest • Savanna, etc <p>iv. Importance of vegetation:</p> <ul style="list-style-type: none"> • Source of timber • Source of fuel (charcoal/wood) • Habitat for wildlife, etc <p>3. Soils of Liberia</p> <p>i. Soil types</p> <ul style="list-style-type: none"> • Latosols • Lithosols • Regosols, and • Swamp soils <p>ii. Formation of soils</p> <p>iii. Soil erosion:</p> <ul style="list-style-type: none"> • Sheet erosion • Gully erosion, and • Sea erosion <p>iv. Causes of soil erosion:</p> <ul style="list-style-type: none"> • Shifting cultivation, • Bush fallowing • Bush fires, • Deforestation etc <p>v. Methods of soil conservation in Liberia.</p> <p>4. Population and Settlement</p> <p>i. Factors affecting population distribution and density</p> <p>ii. Age Distribution</p> <p>iii. Sex distribution</p> <p>iv. Occupational distribution</p> <p>v. Population problems:</p> <ul style="list-style-type: none"> • Congestion 		<p>Cartographic maps</p> <ul style="list-style-type: none"> • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p><u>Other essential evaluation tools:</u></p> <p><u>Other essential evaluation tools:</u></p> <p>Emphasize research reporting and discussing skills in addition to regular continuous assessment.</p> <p>Let students sketch the political maps of Liberia.</p> <p>Let students sketch and color the vegetation map of Liberia.</p> <p>Students should sketch the map of Liberia showing the rivers of the country.</p>
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	<ul style="list-style-type: none"> • High rate of crimes • Pressure on social amenities of public use, • Unemployment • Traffic jams, etc <p>vi. Human resources:</p> <ul style="list-style-type: none"> • Development, • Current trend • Problems, and • Solution <p>vii. Migration:</p> <ul style="list-style-type: none"> • Types of migration; • Effect of migration <p>viii. Urbanization and its associated problems:</p> <ul style="list-style-type: none"> • Accommodation, • Development of Slums • Unemployment , etc <p>ix. Settlement Types:</p> <ul style="list-style-type: none"> • Rural • Urban <p>x. Factors affecting the location of settlement</p> <p>xi. Settlement problems and solutions</p>			
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SEMESTER: TWO

PERIOD: V

GRADE: 12

UNIT: REGIONAL GEOGRAPHY OF LIBERIA AND THE REST OF AFRICA

TOPIC: PRIMARY INDUSTRIES OF LIBERIA

GENERAL OBJECTIVES: Upon completion of the topics in this unit, student will be able to:

1. Discuss the contribution of primary economic activities to the economy of Liberia.
2. Suggest solutions to minimize the problems that face the primary sector of the economy of Liberia.
3. Discuss the importance of the Secondary and Tertiary economic activities sectors of the economy of Liberia.

SPECIFIC OBJECTIVES: Upon completion of the topic, students will be able to:

1. Identify the primary, secondary, and tertiary sectors of the economy of Liberia
2. Discuss the importance of each sector to the economic and infrastructural development of Liberia
3. Account for the problems hampering the growth and development of Liberia's economy.
4. Highlight measures to improve the primary, secondary and tertiary industries of Liberia.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Acquire positive attitude towards economic policies and protocols.</p> <p>Appreciate the role played by energy and power in the development of economic activities and resources.</p> <p>1. Acknowledge the importance or resource conservation</p>	<p>1. Agriculture</p> <ol style="list-style-type: none"> i. Definition ii. Classification: <ul style="list-style-type: none"> • Subsistence, or • Commercial • Crop, or • Animal iii. System and characteristics: <ul style="list-style-type: none"> • Plantation, • Bush fallowing • Shifting cultivation, • Crop rotation, • Truck farming, • Pastoral farming, • Poultry, etc iv. Factors affecting Agriculture v. The role of Agriculture in economic development vi. Problems and solutions <p>2. Case Study: Rubber plantation in Liberia (Firestone Operations) Current trend and prospects.</p>	<ol style="list-style-type: none"> 1. Teacher should guide students to analyze various economic activities 2. Write reports on the strengths and weaknesses of the various industrial sectors in Liberia. 3. Organize field trips to industrial plants and observe their waste disposal methods. 4. Invite an expert on investment processes and prospect to give a talk to students on the topic. 5. Create relevant activities 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets 	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Identify the primary, secondary, and tertiary sectors of the economy of Liberia 2. Discuss the importance of each sector to the economic and infrastructural development of Liberia 3. Account for the problems hampering the growth and development of Liberia's economy. 4. Highlight measures to

	<p>3. Lumbering</p> <ul style="list-style-type: none"> i. Definition ii. Areas noted for Lumbering iii. Methods of exploitation iv. Main economic trees: <ul style="list-style-type: none"> • Ekki, • Ironwood • Niangon • Mahogany • Broum • Wawa • Azobe, etc v. Economic importance <ul style="list-style-type: none"> • Provision of employment • Source of fuel • Source of government's revenue • Source of foreign exchange, etc vi. Problems vii. Solution viii. Prospects <p>4. Fishing</p> <ul style="list-style-type: none"> i. Definition ii. Types of Fishing <ul style="list-style-type: none"> • Fresh-water fishing • Salt-water fishing-on-shore and off-shore iii. Major fishing areas iv. Methods of fishing <ul style="list-style-type: none"> • Hook and Line • Wicker baskets, • Net and trawlers • Traps, etc 		<ul style="list-style-type: none"> • Pencil • String, etc 	<p>improve the primary, secondary and tertiary industries of Liberia.</p> <p><u>Other essential evaluation tools:</u></p> <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Research and reporting skills • Draw a sketch map of Liberia and explain its economic development patterns
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	<ul style="list-style-type: none"> v. Kinds of fish caught vi. Fish preservation: <ul style="list-style-type: none"> • Salting, • Smoking • Freezing, etc vii. Importance: <ul style="list-style-type: none"> • Source of income, • Provision of Jobs, • Source of food, etc viii. Problems and solutions ix. Current trend and Prospects. <p>5. Mining and Mineral Resources:</p> <ul style="list-style-type: none"> i. Definition ii. Types of Mineral Resources: <ul style="list-style-type: none"> • Metallic-gold, iron ore, diamonds, etc • Non-metallic • Ferrous-iron ore iii. Methods of Mining <ul style="list-style-type: none"> • Open-pit or Open-cast, • Adit • Dredging, etc iv. Importance of Mining: <ul style="list-style-type: none"> • Income generation, • Foreign exchange, • Improved living standards, etc v. Uses of Minerals: <ul style="list-style-type: none"> • Iron-ore-steel, • Bauxite-aluminum, • Diamonds-gem/jewelry, • Gold- jewelry, etc vi. Problems, Solutions and prospects 			
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	6. Case Study: Iron ore mining in Liberia.			
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SEMESTER: TWO

PERIOD: V

GRADE: 12

UNIT: REGIONAL GEOGRAPHY OF LIBERIA AND THE REST OF AFRICA

TOPIC: TERTIARY INDUSTRIES OF LIBERIA

SPECIFIC OBJECTIVES: Upon completion of the topic, students will be able to:

1. Identify the primary, secondary, and tertiary sectors of the economy of Liberia
2. Discuss the importance of each sector to the economic and infrastructural development of Liberia
3. Account for the problems hampering the growth and development of Liberia's economy.
4. Highlight measures to improve the primary, secondary and tertiary industries of Liberia.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
<p>Acquire positive attitude towards economic policies and protocols.</p> <p>Appreciate the role played by energy and power in the development of economic activities and resources.</p> <p>Acknowledge the importance or resource conservation</p>	<p>1. Trade and Commerce</p> <ol style="list-style-type: none"> i. Definition and types Internal, and External ii. Direction of trade iii. Composition of trade iv. Organization of trade v. Retail and wholesale: Advantages and disadvantages/limitations vi. Role of internal trade vii. Role of external trade to the economic development of Liberia viii. Problems of trade and solutions. CASE STUDY: Liberia's current International trade status ix. ECOWAS & MRU (Highlights) <ul style="list-style-type: none"> • Member countries 	<ol style="list-style-type: none"> 1. Teacher should guide students to analyze various economic activities 2. Write reports on the strengths and weaknesses of the various industrial sectors in Liberia. 3. Organize field trips to industrial plants and observe their waste disposal methods. 4. Invite an expert on investment processes and prospect to give a talk to students on the topic. 5. Create relevant activities 	<p><u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson)</p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Suppleme</u></p>	<p><u>Essential tasks students should be able to do:</u></p> <ol style="list-style-type: none"> 1. Identify the primary, secondary, and tertiary sectors of the economy of Liberia 2. Discuss the importance of each sector to the economic and infrastructural development of Liberia 3. Account for

	<ul style="list-style-type: none"> • Purpose/mandate • Advantages and disadvantages • Problems and Solutions (ECOWAS & MRU) <p>2. Transport and Development:</p> <ol style="list-style-type: none"> Definition Means of Transport <ul style="list-style-type: none"> • Land • Sea (water), and • Air Forms of Land transport: <ul style="list-style-type: none"> • Road • Rail, • Footpaths • Ropeways, etc Merits and demerits of land transport in Liberia Water transport Forms of water transport: Rivers and Oceans Merits and demerits Air transport types <ul style="list-style-type: none"> • Domestic • International Merits and demerits Problems of transport in Liberia : <ul style="list-style-type: none"> • Poor road network • Road maintenance • Weather hazards • Seasonality of river regimes, etc Solutions Importance of transport 		<p><u>ntary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>the problems hampering the growth and development of Liberia's economy.</p> <p>4. Highlight measures to improve the primary, secondary and tertiary industries of Liberia.</p> <p><u>Other essential evaluation tools:</u> <u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Research and reporting skills • Draw a sketch map of Liberia and explain its economic development patterns
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	3. Tourism: <ol style="list-style-type: none"> i. Definition ii. Major Tourist Attraction centers: <ul style="list-style-type: none"> • Sarpo National Park • Blue Lake • Lake piso • National Museum iii. Importance of tourism to the Economic development of Liberia: iv. Problems and solutions 			
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SEMESTER: TWO

PERIOD: VI

GRADE: 12

UNIT: THE GEOGRAPHY OF WEST AFRICA

TOPIC: THE GENERAL GEOGRAPHY OF WEST AFRICA

GENERAL OBJECTIVES: Upon completion of the topics, students will be able to:

1. Divide Africa into regions and discuss the impact of the natural and physical features of the continent.
2. Analyze factors which influence the climatic variations, and how these affect human- economic activities.
3. Discuss the impact of mineral resources on the economy of each region.
4. Explain factors which affect population movements and their attendant problems in each regions.
5. Relate conditions on the continent to the geography of each region in Africa.
6. Analyze the role of Economic groupings in Africa eg. AU; SADEC; ECOWAS, etc.

SPECIFIC OBJECTIVES: At the end of this topic, students should be able to:

1. Describe the natural and physical features of the region.
2. Examine the mineral and agricultural potential of the region compared to others,
3. Examine the industrial activities of the region compare to the others,
4. Discuss farming, mining, and trade patterns of the region.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Gain broader understanding about conditions in other parts of Africa. Recognized the need for regional cooperation	1. The Geography of West Africa: <ul style="list-style-type: none">• Countries Liberia, Nigeria, Ghana, Sierra Leone, Gambia, Senegal, Guinea, Guinea Bissau, Capeverde, Benin, Togo, Ivory Coast, Burkina Faso, Niger, Mali, Mauritania• Elements to highlight in discussion:• Political boundaries• Physical features• Natural resources	Encourage students to: <ol style="list-style-type: none">1. Write essays and reports on of the economic life of the region2. Compare the industrial farming and other activities with those of other regions3. Draw the political and economic map of West	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Describe the natural and physical features of the region.2. Examine the mineral and agricultural potential of the region compared to others,3. Examine the industrial activities of the region compare to the others,

	<ul style="list-style-type: none"> • Trade and communication • Climate and conditions • Agriculture • Economic development 	<p>Africa</p> <p>4. Invite Embassy staff to talk to students on their respective countries</p>	<p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>4. Discuss farming, mining, and trade patterns of the region.</p> <p>5. Explain how the economic geography of West Africa is similar to that of each country of the region.</p> <p><u>Other essential evaluation tools:</u></p> <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Class participation • Discussions and report writing in addition to continuous evaluation
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SEMESTER: TWO

PERIOD: VI

GRADE: 12

UNIT: THE GEOGRAPHY OF AFRICA

TOPIC: GEOGRAPHY OF EAST AFRICA

SPECIFIC OBJECTIVES: At the end of this topic, students should be able to:

1. Draw the map of East Africa
2. Explain the climatic conditions of East Africa,
3. Describe the population density and patterns of each country in East Africa
4. Explain the main economic activities including export and import.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Appreciate the region as a part of the African	1. General Geography of East Africa: <ul style="list-style-type: none"> • Countries 	<p>Guide students to:</p> <p>1. Draw the map of the</p>	<p><u>A. Primary Text</u></p> <p><i>General Geography in</i></p>	<p><u>Essential tasks students should be able to do:</u></p>

continent. Take proper steps to address issues that relate to population density and economic activities.	<ul style="list-style-type: none"> • Kenya, Uganda, Tanzania, Malawi, Rwanda, Burundi, Zambia • Discuss these elements • Political boundaries • Physical features • Natural resources • Trade and communication • Population • Climate • Agriculture 	<p>region</p> <ol style="list-style-type: none"> 2. Write reports of various aspects of East Africa 3. Create other relevant activities 	<p><i>Diagrams (Pearson)</i></p> <p><u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i></p> <p><i>Map reading for west Africa</i></p> <p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<ol style="list-style-type: none"> 1. Draw the map of East Africa 2. Explain the climatic conditions of East Africa, 3. Describe the population density and patterns of each country in East Africa 4. Explain the main economic activities including export and import. <p><u>Other essential evaluation tools:</u></p> <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Report writing in addition to continuous evaluation • With the economic map of East Africa, explain the economic importance of the region.
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SEMESTER: TWO**PERIOD: VI****GRADE: 12****UNIT: THE GEOGRAPHY OF AFRICA****TOPIC: GEOGRAPHY OF EQUATORIAL AND CENTRAL AFRICA****SPECIFIC OBJECTIVES:** At the end of this topic, students should be able to:

1. Analyze the climate condition of Equatorial and Central Africa,
2. Compare the population of each country
3. Explain settlement patterns
4. Describe the major physical features.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Students will appreciate people of other regions in Africa	1. Geography of Equatorial and Central Africa <ul style="list-style-type: none"> • Countries • Gabon, Congo Republic, Democratic Republic of Congo, Cameroon, Chad, Central African Republic • Highlight these in discussion; • Political boundaries • Physical features • Natural resources • Trade and communication • Population • Climate 	<ol style="list-style-type: none"> 1. Draw the map of Central/ Equatorial Africa. 2. Illustrate notable features of the region 3. Discuss the economic viability of the region 4. Create other relevant activities. 	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>Other Resources/Supplementary Readings</u> <ul style="list-style-type: none"> • Sample of 	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> 1. Analyze the climate condition of Equatorial and Central Africa, 2. Compare the population of each country 3. Explain settlement patterns 4. Describe the major physical features. <u>Other essential evaluation tools:</u> <u>Other essential evaluation tools:</u> <ul style="list-style-type: none"> • Comparing the maps of Equatorial and Central Africa. • Explain the economic importance to the rest of Africa.

			Cartographic maps <ul style="list-style-type: none"> • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	
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SEMESTER: TWO

PERIOD: VI

GRADE: 12

UNIT: THE GEOGRAPHY OF AFRICA

TOPIC: GEOGRAPHY OF NORTH AFRICA

SPECIFIC OBJECTIVES: At the end of this topic, students should be able to:

1. Describe the natural and physical features and climate of North Africa.
2. Explain settlement patterns in each country of the region
3. Compare the mineral and agriculture potential to other regions of Africa
4. Analyze factors influencing population movements in the region.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Develop the desire to research into the geography of other nations.	1. The geography of North Africa: <ul style="list-style-type: none"> • Countries • Libya, Algeria, Tunisia, Egypt, Morocco, Sahara Republic, • Elements to highlight in discussions, • Political boundaries • Physical features • Natural resources • Trade and communication 	Guide students to: <ol style="list-style-type: none"> 1. Draw the map of North Africa and locate each country in the region, 2. Write reports and hold discussions and debates on the potential of the resources of the region as compare to others 3. Discuss the role of long distance truck drivers in the spread of 	<u>A. Primary Text</u> <i>General Geography in Diagrams</i> (Pearson) <u>B. Secondary Texts</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 3</i> <i>Map reading for west Africa</i>	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none"> 1. Describe the natural and physical features and climate of North Africa. 2. Explain settlement patterns in each country of the

	<ul style="list-style-type: none"> • Population • Climate • Agriculture • Economic development 	HIV/AIDS	<p><i>Certificate Physical and Human Geography</i></p> <p><u>Other Resources/Supplementary Readings</u></p> <ul style="list-style-type: none"> • Sample of Cartographic maps • Extracts of Liberia Atlases. • Geometric sets • Pencil • String, etc 	<p>region</p> <ol style="list-style-type: none"> 3. Compare the mineral and agriculture potential to other regions of Africa 4. Analyze factors influencing population movements in the 5. Evaluate the role of Africa unity in the development of Africa 6. State how Africa can settle its own social political and economic problems.
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SEMESTER: TWO

PERIOD: VI

GRADE: 12

UNIT: THE GEOGRAPHY OF AFRICA

TOPIC: GEOGRAPHY OF SOUTHERN AFRICA

SPECIFIC OBJECTIVES: At the end of this topic, students should be able to:

1. Outline and explain factors influencing climate,
2. Describe physical and natural features of the region,
3. Compare and contrast factors influencing population with other regions,
4. Discuss the mineral and agricultural potential of the region.

OUTCOMES	CONTENTS	ACTIVITIES	MATERIALS / RESOURCES	EVALUATION
Recognize the potential of other regions and people.	1. The Geography of Southern Africa <ul style="list-style-type: none">• Countries Zimbabwe, Botswana, Lesotho, Sudan, Angola, Mauritius, Mozambique, Madagascar• Highlight these discussions:• Political boundaries• Physical features• Natural resources• Trade and communication• Population• Climate• Agriculture• SADEC	Encourage students to: <ol style="list-style-type: none">1. Draw map profile of Southern Africa2. Use the maps to discuss various aspects of the region3. Create other relevant activities	<u>Primary Text</u> Abegunde, et al. <i>Senior Secondary Geography Bk. 1</i> <u>B. Secondary Texts</u> <i>General Geography in Diagrams</i> (Pearson) <i>Map reading for west Africa</i> <i>Certificate Physical and Human Geography</i> <u>Other Resources/Supplementary Readings</u> <ul style="list-style-type: none">• Relief maps of Liberia and West Africa• Photographs/illustrations of	<u>Essential tasks students should be able to do:</u> <ol style="list-style-type: none">1. Outline and explain factors influencing climate,2. Describe physical and natural features of the region,3. Compare and contrast factors influencing population with other regions,4. Discuss the mineral and agricultural

			<p>different physical features of Liberia and West Africa</p> <ul style="list-style-type: none"> • Map showing the location of tertiary industries in Liberia and West Africa. • Samples of products of tertiary industries. • Map of Liberia's industries • Current investment statistics • Political and Economic maps of West Africa • Political and Economic maps of East Africa • Atlas for senior secondary schools <ul style="list-style-type: none"> • Map of Africa • Economic/Political map of Central Africa • Atlas for senior secondary schools • Globe • General Geography in Diagram for West Africa - Pearson 	<p>potential of the region.</p> <p><u>Other essential evaluation tools:</u></p> <p><u>Other essential evaluation tools:</u></p> <ul style="list-style-type: none"> • Base evaluation on practical and analytical skills • Sketch the map of Southern Africa. State the economic contributions to the development of the continent.
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