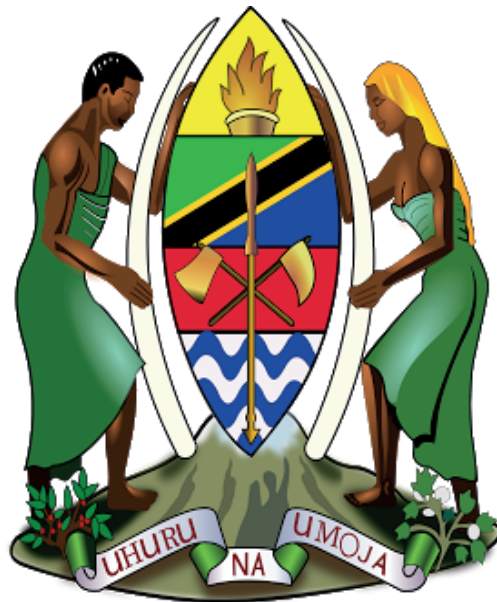


**THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION AND VOCATIONAL TRAINING**



**GEOGRAPHY SYLLABUS FOR ADVANCED LEVEL
SECONDARY EDUCATION**

FORM V - VI

2010

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TABLE OF CONTENTS

	Page
1.0 Introduction.....	iv
2.0 Rationale for the Review.....	iv
3.0 Aims of Education in Tanzania.....	iv
4.0 The Aims and Objectives of Secondary Educations.....	v
5.0 General Geography Competences.....	v
6.0 General subject objectives	v
7.0 Organization of Subject Syllabus	vi
8.0 Instructional Time.....	vii
9.0 Assessment in the Subject	vii
Form V	1
Form VI	24

1.0 Introduction

1.1 Background Information

Geography is a subject offered at Advance level Secondary Education in Tanzania. The subject promotes the understanding of the earth's physical, cultural, quantitative and economic components at national, regional and global contexts.

Future graduates of this subject shall be expected to serve the community as geologists, planners, economists, environmentalists, miners, land surveyors and fishermen/women. They shall also, serve as foresters, researchers, demographers, water technician/engineers, meteorologists, agriculturalists and field extension officers.

Geographers are required to provide opportunities to the community for solving natural and human made disasters and catastrophies.

The subject too promotes an understanding of the living and non-living part of the earth, climate, hydrosphere and their inter-relationships.

The teaching of the subject takes the human being as central in these relationships. Therefore, the pre-occupation of the subject is to minimize the human impact on the environment. The learners of the subject are thus expected to be conversant with what actions to take with the same intentions of sustainably co-existing with the environment.

2.0 Rationale for the Review.

The Geography curriculum review has been dictated by two major factors; Global changes which include technological, social and economic have also influenced education at curriculum and subject level to be adjusted. For example, there has risen the need to accommodate cross-cutting issues which include globalization; ICT; Gender; environment and others. The second factor that dictated the review of this subject is the early 2008 national research outcomes. A couple of recommendations were made. Some of these recommendations necessitated the need to reduce the content by way of dropping some topics from the syllabus, making further synchronization of the Ordinary Level Syllabus with this level in order to address issues of curriculum overload, irrelevance and out datedness.

Such changes include the shift of regional integration topic to be accommodated in the General Studies Subject and collapse of the topic on environmental issues. The topic is now integrated in all other topics especial on focal studies or contexts. Other minor improvements include changing of titles. Water pollution and Conservation now reads Water Management; four topics have been created in the topic of Population and Development Soil conservation now reads Soil Management; In the study of water, a topic on Wet lands has been added.

3.0 Aims of Education in Tanzania

The general aims of education in Tanzania are to:

1. Guide and promote the development and improvement of the personalities of the citizens of Tanzania, their human resources and effective utilization of their resources in bringing about individual and national development.
2. Promote the acquisition and appreciation of culture, customs and traditions of the people of Tanzania.
3. Promote the acquisition and appropriate use of literary, social, scientific, vocational, technological, professional and other forms of knowledge, skills and understanding for the development and improvement of man and society.
4. Develop and promote self-confidence and an inquiring mind, an understanding and respect for human dignity and human rights and a readiness to work hard for personal self advancement and national improvement.
5. Enable and expand the scope of acquisition, improvement and upgrading of mental, practical, productive and other life skills needed to meet the changing needs of industry and the economy.
6. Enable every citizens to understand the fundamentals of the national constitution as well as the enshrined human and civic rights, obligation and responsibilities.

7. Promote the love for work, self and wage employment and to improve performance in the production and service sectors.
8. Inculcate principles of national ethic and integrity, national and international cooperation, peace and justice through the study, understanding and adherence to the provision of the National Constitution and International basic charters.
9. Enable a rational use, management and conservation of our environment.

4.0 The Aims and Objectives of Secondary Educations are to:

1. Consolidate and broaden the scope of baseline ideas, knowledge, skills and principles acquired and developed at primary education levels;
2. Enhance further development and appreciation of national unity, identify and ethnic personal integrity, respect for and readiness to work , human rights, cultural and moral values, customs, traditions and civic responsibilities and obligations.
3. Promote the development of competency in linguistic ability and effective use of communication skills in Kiswahili and at least one foreign languages.
4. Promote opportunities for the acquisition of knowledge, skills, attitudes and understanding in prescribed or selected fields of study.
5. Prepare students to tertiary and higher education; vocational, technical and professional through training.
6. Inculcate a sense and ability for self-study, self-reliance and self-advancement in new frontiers of science and technology, academic and occupational knowledge and skills.
7. Prepare the student to join the world of work.

5.0 General Geography Competences

At the end of A– Level geography course, students should have the ability to:-

1. Collect, organize and interpret information in numerical or statistical forms.
2. Use a range of instruments accurately and confidently in presenting geographical information or data.
3. Show personal initiative and commitment in managing national resources and the environment.
4. Establish the existence of interrelationships of different geographical phenomena.
5. Analyse problems caused by natural and human factors and use appropriate technology in solving them.
6. Participate effectively in harnessing resources and energy for mutual benefits.
7. Apply research skills to conduct research and use the outcome to solve social and economic problems.

6.0 The general subject objectives are:-

1. Enable students develop awareness of planet earth as their heritage.
2. Develop students awareness about the extent to which resources of their country can be developed to raise the standard of living.
3. Develop and apply methods of observation, measurement, recording and interpretation of phenomena as geographers.
4. Develop a sense of critical analysis and understanding of social, economic and geographical constraints which hinder national development and suggest ways of overcoming them.
5. Enable students to understand the interrelationships and interdependence between countries and appreciate them.
6. Enable students acquire the skills for conserving the environment.
7. Enable students to develop a sense of commitment to preserve and utilize resources sustainably as a heritage for future generations.

7.0 Organization of Subject Syllabus

The Advanced Level Geography Syllabus has been organized into two parts. Part one presents the preliminary information which include an introduction, subject description, rationale for review of subject syllabus, the objectives of Education in Tanzania, aims and objectives of Secondary Education, General competencies for subject and general objectives for the subject. The syllabus content basing on level competencies, level objectives, content, matrix, topics, sub-topics, specific objectives, teaching and learning strategies, teaching and learning resources, assessment and number of allocated time are also components of part one . Part two forms the academic description to be covered in form V and form VI. The details of these components are presented below.

7.1 Class Competencies

Specific competences, referred to as level competences that have been stated before form five and form six content matrix respectively. It is expected that once a sub-topic has been taught and learnt, the student when assessed or observed, should show specific learning outcomes or abilities referred to as competences. This syllabus has five major competences to demonstrate for form V and VI respectively.

7.2 Class Objectives

The objectives reflected here are referred to as level objectives. Specific objectives are derived from these objectives. These items are important because these are the instructional areas from which teaching/learning strategies and impromptu assessment indicated in the left column of the syllabus are drawn.

7.3 Content Matrix

The content matrix is a format that entails six items namely topic/sub-topics; specific objectives; teaching learning strategies; teaching learning resources, assessment and number of periods.

7.3.1 Topics/Sub-topics

These are areas which represent the content to be covered at the specific level. These items are presented in the first column of each page of the syllabus. The A-Level Syllabus has total of twelve topics to be covered. Each topic is divided to several sub-topics.

7.3.2 Specific Objectives

Specific objectives have been stated into simple form in order to enable the teaching of each sub topic. These come after the topic/subtopic column. Specific objectives connote actions a student should be able to do. There are not less than two specific objectives per subtopic. Most of the outcome based instruction is assessed basing on these objectives.

7.3.3 Teaching and Learning Strategies

The teaching and learning strategies are presented in a single column. These are both methods and techniques which are supposed to be used by either the teacher or students in order to achieve after teaching and learning of a specific objective. The techniques which are used form a link thus referred to as strategies. The actions proposed are of higher level skills and demand students' active participation. The teacher is not confined to the proposed strategies if the environment is not conducive. Teachers are allowed to use other participatory strategies according to the demand of the topic and situation.

7.3.4 Teaching/Learning Resources

The teaching/learning resources are enabling aids which facilitate the teaching and learning processes. Any teaching/learning resources have been indicated in the strategy resource for illustration of how they are supposed to be used.

The common resources suggested include textual, web based resource, library resource; models; subject kits; weather stations, experts; the environment and other actual things from nature. The teacher is advised to use contextualized teaching/learning resources. It is emphasized all texts should be both in ordinary script and Braille.

7.3.5 Assessment

Each respective specific objective has been provided with a clear statement which aims at guiding the teacher in assessing if each student has grasped and thereafter achieved intentions which are stipulated by specific objectives. Assessment area is indicated in the sixth column of the content matrix.

7.3.6 Number of Periods

An ideal instructional time has been shown on the seventh column of the content matrix. Instructional time show a total number of periods set per topic. The time has been carefully calculated to enable the teaching as well as carrying on assessment in form of monthly tests; midterm, terminal as well as annual examination.

There are 40 weeks devoted for teaching and learning practices. There are 194 days for teaching Geography with 400 periods per each class. The number of each period per week is 10 and each period has a total number of 40 minutes.

8.0 Instructional Time

Each topic in the syllabus has been allocated a number of periods which are considered adequate for its teaching.

9.0 Assessment in the subject

The table below shows the type of assessment and the accompanied assessment measures to be used. The assessment measures listed in the table contributes to continuous and final assessments of the student achievement. The frequency for each assessment measure has been indicated with the weight in %. You are therefore strongly advised to apply a wide selection of assessment measures in order to develop students' ability for the mastery of the subject matter during the teaching learning process.



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FORM FIVE

Class Competences

At the end of Form five, students should have the ability to:

1. Manipulate statistical data and use geographical information accurately in addressing life challenges.
2. Utilize acquired research skills to improve social and economic life for oneself and of the community.
3. Analyse critically the physical changes on earth's crust, resulting landforms and their impact on environment and humanlife.
4. Apply survey and map making skills to plan social and economic development activities.
5. Use knowledge from photographs and map work in understanding natural relationships and suggest ways to overcome identified social and economic problems.

Class Objectives

At the end of form 5 students should be able to:

- a) Describe the nature, type and other statistical information and present them logically using proper methods.
- b) Conduct research, interpret and analyse collected data for social and economic use.
- c) Understand and explain the movements of planet earth and their effects.
- d) Relate the internal and external processes of the earth to emerging landforms.
- e) Understand the importance of survey practices and their application in local and global contexts.
- f) Actively participate in map work and photograph related activities such as observing, measuring, interpreting, recording and using the information obtained.

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
1.0 Application of statistics in Geography 1.1 Nature of data.	By the end of this sub- topic, the student should be able to: a) provide the meaning of data.	The teacher to: i) Guide students to brainstorm to define the term data. ii) Assist students to share a formal definition of data.		Is the student able to define data?	61
	b) describe the nature of data.	i) Using different written documents, the teacher to assign students in groups to read about nature of data. ii) students to present their findings in summary (i.e. individual, discrete, continues and grouped data.	Texts on statistical data.	Is the student able to describe the nature of data?	
1.2 Types of data variables.	By the end of this sub- topic, the student should be able to differentiate the variables of data.	i) The teacher to assign students to collect different types of data. ii) Using collected data, the teacher to assist students to differentiate collected data. iii) Using data summarized in tables and charts, the teacher to guide students to differentiate a dependent variable from independent variable.	<ul style="list-style-type: none"> Documented data in charts and tables. Tactile maps. 	Is the student able to differentiate data variables?	
1.3 Sources of data in geography.	By the end of this sub- topic, the student should be able to: a) highlight different sources of data in geography.	i) The teacher to guide students to collect data from library and web based sources. ii) The teacher to assist learners to organize collected data iii) Compare collected data and make a list of these data.	<ul style="list-style-type: none"> Library documents Text in Braille 	Is the student able to: - name different sources of data? - relate data to social and economic activities?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	b) relate data to social and economic activities.	i) The teacher to guide students to explain the importance of data in teaching/learning process. ii) Using a guide, the teacher to assist students to develop a project on how to use data to improve social and economic activities.	Project guide.	Is the student able to relate data to social and economic development?	
1.4 Statistical measures.	By the end of this sub- topic, the student should be able to: a) identify simple statistical measures. b) explain the importance of statistical measures.	Using questions, the teacher to guide students to explain single statistical measures. i) Using guiding questions, the teacher to guide students to explain their application in learning process. ii) The teacher to assist learners to discuss the advantages and disadvantages of statistical data in social and economic planning	Text on statistical measures. List of questions.	Is the student able to: - identify simple statistical measures? - explain importance of statistical measures?	
	c) compute data.	Using guided exercises, the teacher to assist students to calculate the statistical measures (i.e. mean, mode, median, variance and standard deviation).	Printed and data in braille.	Is the student able to compute data?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
1.5 Methods of presenting data.	<p>By the end of this sub- topic, the student should be able to:</p> <p>a) identify methods of presenting data.</p>	<p>The teacher to:</p> <p>i) Assign students to read in groups the method of presenting data.</p> <p>ii) Guide students to present their findings (i.e. all types of line, bar, circles, charts, diagrams and statistical maps).</p>	<p>Printed data on statistical data presented in various ways.</p>	<p>Is the student able to identify methods of data presentation?</p>	
	<p>b) Present data using different statistical methods.</p>	<p>i) The teacher to demonstrate how to present data.</p> <p>ii) Using guided exercises, the teacher to guide students to use each method to present data.</p> <p>iii) The teacher to guide students to interpret the outcomes of the tasks.</p> <p>iv) The teacher to guide students to explain the merits and demerits of each method for presenting data.</p>	<p>Guided exercises.</p>	<p>Is the student able to present data using different methods?</p>	
	<p>c) explain the importance of statistics to the community.</p>	<p>i) Guide students to do a research on the application of statistical measures in a selected study areas; i.e market, hospital, traffic and human population.</p> <p>ii) The teacher to guide the students to present their findings and prepare a summary of the same.</p>	<p>Research guide.</p>	<p>Is the student able to explain the importance of statistics to the community?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
2.0 Field Research Strategies 2.1. Importance of research.	By the end of this sub- topic, the student should be able to: a) describe the types of research.	i) Using texts, the teacher to guide students to provide the meaning of research. ii) Students to summarize different types of research.	Texts on research types.	Is the student able to: define research? describe type of research?	25
	b) explain the importance of research.	i) The teacher to guide students to discuss the importance of research in life. ii) The teacher to guide students to read texts in groups on importance of research. iii) Students to present and make summary on the importance of research in life.	Texts of research report and findings in both print and Braille.	Is the student able to explain the importance of research?	
2.2 Research techniques.	By the end of this sub-topic the student should be able to: a) describe the importance of major stages in research .	i) Using a text, the teacher to guide students to explain the significance of stages in research. ii) Students to present their work at plenary session.	<ul style="list-style-type: none"> • Texts on stages in research. • Texts in Braille. 	Is the student able to describe the importance of major stages in research?	
	b) describe the organization of field research.	i) Teacher to guide students to discuss the importance of selecting an appropriate research site. ii) The teacher to guide students to do a library reading to identify research tools and methods and explain the importance of each. iii) Teachers should guide students why is it importance to consider welfare of researchers during the organization of research.	<ul style="list-style-type: none"> • Research site. • Research guide. 	Is the student able to describe the organisation a field research?	

TOPIC/SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	c) conduct Research in community.	i) The teacher to guide students to select research problem affecting the community. ii) With guidance from the teacher, students to develop research tools. iii) Teacher and students to prepare research requirements. iv) The teacher to guide students to conduct field research. v) Students to analyze and present data using simple statistical measures. vi) The teacher to guide students to make recommendations on the use of research output.	<ul style="list-style-type: none"> • Research site. • Printed research tools. • List of research requirements. 	Is the student able to conduct an actual research in the community?	
3.0 Position, Behaviours and structure of the earth 3.1 Atmosphere.	By the end of this sub- topic, the student should be able to: a) describe characteristics of the earth.	i) The teacher to guide student to discuss the atmosphere and its features through observing it. ii) The teacher to organise film shows on the dimension of the atmosphere. The teacher to guide students to discuss the composition of the atmosphere.	<ul style="list-style-type: none"> • Natural phenomena. • Electronic devices. • Sketches on the dimension of the atmosphere. 	Is the student able to discuss the characteristics of the earth?	35
	b) analyze the composition of the atmosphere.		<ul style="list-style-type: none"> • Natural phenomena. • Film/Video and pictures showing atmosphere and its composition. 	Is the student able to mention constituents of atmosphere?	
	c) outline the impact of atmosphere on life.	i) The teacher to guide discussion on importance of the atmosphere in life. ii) Teacher to guide students to discuss the impact of atmosphere on life.	Guide on study of atmosphere.	Is the student able to discuss impact and importance of atmosphere on life?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
3.2 The shape of the earth.	By the end of this sub- topic, the students should be able to describe the shape of planet earth and factors that might have determined this shape.	i) Teacher to guide discussion on the shape of the earth. ii) Students to review texts on the factors that caused the shape of the earth.	<ul style="list-style-type: none"> Planetarium. Globe. Sketch of the shape of the planet earth. Video/film. Texts. 	Is the student able to describe the shape of the planet earth?.	
3.3 Structure of the planet earth.	By the end of this sub- topic, the student should be able to: <ul style="list-style-type: none"> a) describe the characteristics of the earth's crust. 	Teacher to guide students to discuss the details of these layers of using a globe and Sketch of the shape of the planet earth i.e concentric layers physical chemical characteristics and boundaries.	<ul style="list-style-type: none"> Sketch and pictures on the layers of the planet earth. Globe showing layers and its boundaries. 	Is the student able to: <ul style="list-style-type: none"> - describe earth's characteristics? - explain the importance of gravity? 	
	b) to explain the role of the gravity in the stability and dynamic state of the planet earth.	i) To guide students to discuss and explain the role of the earth's gravity in determining the stability and dynamic state of the planet earth ii) Teacher to invite another teacher from the Physics demonstrate the behaviour of gravity.	Magnet bars.	Is the student able to explain the role of gravity in nature?	
4.0 The dynamic earth and consequence 4.1 Isostasy.	By the end of this sub- topic, students should be able to: <ul style="list-style-type: none"> a) define the term isostasy. 	i) The teacher to guide students to read texts on various attempts made on defining the term isostasy. ii) Brainstorm on the meaning of isostasy and develop a formal conceptual meaning of the term.	Texts on isostasy.	Is the student able to: define the term isostasy?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	b) explain the theory of isostasy.	i) The student to read texts on factors that maintain isostasy within the earth crust, with focus on elevation of land masses, density of earth materials, role of denudation and impact of temperature of materials within the earth. ii) Using films and diagrams, the teacher to demonstrate how various factors contribute to equal standing of the earth crust.	Texts, films, diagrams on isostasy.	Is the student able to explain the theory of isostasy?	
4.2 Plate tectonics and drifting.	By the end of this sub- topic, the student should be able to: a) define the terms plate tectonics and continental movements. b) continental drifting.	i) The teacher to guide students to brainstorm on the meaning of plate tectonic and continental drift. ii) Students to view a film on continental drift and note its main elements. iii) Student to read text on tectonic theory. i) Students to observe floating pieces of wood (on water) representing land masses of varying elevation. ii) Student to study diagrams and models on continental plates, rift valleys, mid continental ridges; volcanic features, divergence and convergent points.	<ul style="list-style-type: none"> • Film on continental drift. • Text of theory of continental drift. <ul style="list-style-type: none"> • Physical maps, study sites. • Study diagrams. • Physical map. • Study site. 	Is the student able to: - define the terms plate tectonics and continents movements? - describe the consequences of continental drifting?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
		<p>iii) With the use of physical map, the teacher to guide students to visit local places where features resulting from continental drift can be observed (i.e. sea platform, rift valley floor/ edges; volcanic features.</p> <p>i) Students to read various texts on both positive and negative impacts of continental drift.</p> <p>ii) The teacher to guide a debate and develop a list of negative and positive impacts of continental drift.</p> <p>iii) Through a field study, students to establish and record information/ data on impacts of continental drift in a local area and a summary from field.</p>	<ul style="list-style-type: none"> • Texts on effect of continental drift • Study site. 	<p>Is the student able to state the importance of continental drift to life on earth?</p>	
4.3 Materials of Earths' crust	<p>By the end of this sub- topic, the student should be able to:</p> <p>a) describe general materials and rocks of the earth.</p> <p>b) state major characteristics of rocks of the earths.</p>	<p>Through use of photographs, films and actual samples, the teacher to guide students to identify major types of materials and rocks of the earth.</p> <p>i) Teacher to guide students to read texts on definition of the terms rocks and earths materials.</p>	<ul style="list-style-type: none"> • Photographs, films, sample materials. <p>Text on definition of rock.</p>	<p>Is the student able to:</p> <ul style="list-style-type: none"> - describe materials of the earth and their characteristics? - describe the types of rocks according to their formation? <p>Is the student able to state major characteristics of rocks of the earth?</p>	30

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
		ii) Students to discuss the major characteristics of rocks of the earth.			
	c) describe rock formation and subsequent rock types.	Students to discuss the formation of rocks of the earths and resultant associated forms and forms features.	<ul style="list-style-type: none"> Pictures of different types of rocks. Texts of rock types. 	Is the student able to describe rock formation and types?	
	d) explain the importance of materials and rocks of the earth.	The teacher to invite an expert from a mineral department to make presentation on types of rocks of Tanzania basing on where they are found, their age, and how they contribute to the economy of the country.	Expert	Is the student able to explain the importance of materials and rocks of the earth.	
	e) explain the meaning of the term Geological Time Scale, (GTS).	i) Teacher to guide students to collect information about the concept of Geological Time Scale (GTS) and the events it represents from available literature and internet. ii) Draw a common definition of a Geological time scale.	Texts of GTS	Is the student able to explain the importance of the GTS?	
	f) describe events depicted by a Geological Time Scale.	i) A teacher to guide students to read texts on the age of rocks. ii) Students to make attempts to classify these rocks according to their ages. iii) Teacher to guide students to identify rocks samples in Tanzania.	Texts on GTS sites.	Is the student able to: <ul style="list-style-type: none"> is the student able to classify rock? is the student able to identify rock types in Tanzania? 	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
4.4 The Impact of Earthquake.	By the end of this sub- topic, the student should be able to: a) present the meaning of the terms of earthquake, epicentre, focus and earthquake waves.	i) The teacher to organize a library reading and internet search by students on earthquake. ii) Student to work in groups to present notes on the meaning of earthquakes, how it is determined and consequences of a strike by an earthquake.	<ul style="list-style-type: none"> Library resources. web resources. 	Is the student able to define terms of earthquake, focus and epicentre, focus and earthquake waves?	
	b) compile information on disasters caused by earthquakes.	i) The teacher to guide students to visit a national earthquake early warning centre and collect information on how the impact of earthquake is calculated. ii) Students to collect information and develop a report on impacts of earthquake in Tanzania.	<ul style="list-style-type: none"> National Earthquake Study Centre Unit. Geology Department of UDSM. Meteorological Department in regions/ districts. 	Is the student able to compile information on disasters?	
	c) propose precautions to minimize the impacts of disasters caused by earthquakes.	i) Draw local and global examples of impacts of strike on earthquake events. ii) Students to develop a strategy to minimize the impacts of earthquake in the community.	Records on earth quakes events.	Is the student able to propose precautions to minimize the effects of earthquake disasters?	
4.5 Vulcanism	By the end of this sub- topic, the student should be able to: a) identify different forms of vulcanism.	i) The teacher to guide a discussion on the meaning and forms of vulcanism. ii) Students to prepare notes on the meaning and the forms of vulcanism through reading texts.	Text on vulcanism.	Is the student able to: - identify different forms of vulcanism? - describe the impact of volcanic materials and forms?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
				<ul style="list-style-type: none"> - give reasons for occurrences of volcanic eruption? - point of the effects of volcanic activities? 	
	<p>b) highlight the impact of nature of volcanic materials on the resultant land forms.</p>	<p>i) Students to read texts to identify volcanic materials according to their physical and chemical properties. ii) Teacher to guide students to name examples of volcanic features.</p>	Text on volcanism.		
	<p>c) account for the emergence of volcanic activity.</p>	<p>i) Teacher to guide discussion of the factors for occurrence of volcanic activities. ii) Students to collect library and Web based information on recent volcanic eruptions in Tanzania and the world.</p>	<ul style="list-style-type: none"> • Web based resources. • Library. 		
	<p>d) point out consequences of volcanic activities.</p>	<p>i) Students to carry on a research regarding people's views on volcanic hazards in Tanzania. ii) Teacher to invite an expert from geology department to make presentation on the importance of volcanic features in Tanzania. iii) Teacher to organize a visit to a volcanic sight and collect information on uses of such features from local residents.</p>	<ul style="list-style-type: none"> • Research sites texts on earthquake consequences. • Volcanic site. 		

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
4.6 Denudation and deposition.	<p>By the end of this sub- topic, the student should be able to:</p> <p>a) determine the meaning of denudation and deposition.</p>	<p>i) The teacher to organize brainstorming session on the meaning of denudation and deposition.</p> <p>ii) Students to discuss the difference between weathering and erosion.</p>	<p>Texts on denudation.</p>	<p>Is the student able to;</p> <ul style="list-style-type: none"> - determine the meaning of denudation and deposition? - discuss the difference between the weathering and erosion? 	
	<p>b) point out the different processes involved in denudation.</p>	<p>i) Students to read texts on the different processes involved in denudation.</p> <p>ii) Students highlights the main points of various forces of denudation.</p>	<p>Texts on denudation.</p>	<p>Is the student able to describe processes of denudation and deposition?</p>	
	<p>c) state factors and agents for erosion.</p>	<p>i) Students to read texts and make summary of factors and agents of erosion.</p> <p>ii) Teacher to guide students to visit sites subjected to different factors and agents of erosion.</p> <p>iii) Students to examine different forms of erosion.</p> <p>iv) Students to develop and implement a project to control erosion.</p>	<ul style="list-style-type: none"> • Texts on erosion (factors and agents). • Study sites. 	<p>Is the student able to describe the factors and agents of erosion?</p>	
	<p>d) account for deposition of weathered materials.</p>	<p>i) Students to prepare notes on study sites and the meaning of the deposition.</p> <p>ii) The teacher to guide students to a field study for collecting data on factors that promote deposition of weathered materials.</p>		<p>Is the student able to describe the reasons for deposition of weathered material?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
5.2 Chain surveying.	<p>By the end of this sub- topic, the student should be able to:</p> <p>a) describe the features and use of chain survey gear.</p> <p>b) show the main application of chain survey.</p> <p>c) describe chain survey procedures (i.e. laying offsets and over coming obstacles).</p>	<p>ii) guide students to collect and classify maps based on techniques used to make them.</p> <p>iii) guide students to discuss the importance, and limitation of each map making process.</p> <p>i) Using illustration and actual equipment, the teacher to guide students to describe chain survey and explain the use of each equipment.</p> <p>ii) The teacher to guide students to identify survey methods and the instrument used.</p> <p>i) Students to describe he application of chain survey.</p> <p>ii) Teacher to organize a practical exercise for applying chain survey.</p> <p>i) The teacher to guide students in carrying out field survey.</p> <p>ii) Students to carry out survey exercise adhering to all procedures.</p> <p>iii) The teacher should guide students to write common errors encountered.</p> <p>iv) Students to book survey information collected from the field.</p> <p>v) Students to note and correct common errors experienced in the field.</p>			
			<ul style="list-style-type: none"> • Survey area, survey book; survey instrument. • Survey book. 	<p>Is the student able to: describe the main instruments used in chain survey?</p> <p>demonstrates the skills in chain survey?</p> <p>describe chain survey procedures?</p>	16

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
5.3 Prismatic Compass survey.	<p>By the end of this sub- topic, the students should be able to:</p> <p>a) explain prismatic compass survey and the Instrument used in the field.</p> <p>b) show the uses and importance of prismatic compass survey (focus on reading the forward and back bearing).</p> <p>c) carry on prismatic compass surveying exercise.</p>	<p>vi) Using booked information, students to plot a sketch map.</p> <p>i) Using relevant illustrations, pictures and instruments the teacher to guide students to describe prismatic compass survey.</p> <p>ii) Teacher to guide students to provide elaboration on instruments used in this survey.</p> <p>The teacher to guide</p> <p>i) Students to read forward and back bearing.</p> <p>ii) To guide students to discuss the uses and importance of prismatic survey for taking forward and back bearing.</p> <p>i) The teacher to guide students to describe the traversing method in prismatic survey.</p> <p>ii) The teacher to guide students to identify survey (error of closure) and demonstrate how to correct it.</p> <p>iii) Participate in prismatic compass survey.</p> <p>iv) The teacher to guide students to draw a sketch map using field information.</p> <p>v) Teacher to guide students in correcting error of closure.</p>	<ul style="list-style-type: none"> • Prismatic survey instrument. • Texts. • Illustration. 	<p>Is the student able to explain what is understood by prismatic compass survey and its equipments?</p> <p>explain the uses and importance prismatic in reading compass survey bearing?</p> <p>participate in an exercise on prismatic compass survey?</p>	

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5.4 Plane Table Survey	<p>By the end of this sub- topic, the students should be able to:</p> <p>a) describe the plane table surveying.</p> <p>b) point out the procedures for carrying out plane table survey.</p>	<p>i) Using plane table survey instrument, the teacher to guide students to discuss and give the meaning of plane table survey.</p> <p>ii) The teachers to guide students to describe instruments used in this survey.</p> <p>i) The teacher to demonstrate the procedures of carrying out plane table survey.</p> <p>ii) The teacher to guide students to employ the procedures and perform an exercise on plane table survey.</p>	<p>Plane table survey instrument.</p>	<p>Is the students able to:</p> <ul style="list-style-type: none"> - explain plane table surveying? - point out the procedures of carrying out plane table survey? 	
	<p>c) carryout a task of plane table survey.</p>	<p>i) The teacher to guide students to map the area through traversing procedures.</p> <p>ii) The teacher to guide students to develop a sketch map using the information collected from field.</p> <p>iii) The teacher should guide students to identify errors (using triangle of error) and correct them.</p>	<p>Plane table survey instrument.</p>	<p>Is the student able to carryout a task of plane survey?</p>	
5.5 Leveling procedure	<p>By the end of this sub- topic, the student should be able to:</p> <p>a) describe the leveling as a survey procedure.</p>	<p>i) The teacher to guide students to describe leveling procedure.</p> <p>ii) The teacher to guide students describe the equipment used in leveling.</p>	<p>Leveling instruments.</p>	<p>Is the student able to:</p> <ul style="list-style-type: none"> - describe the levelling procedure? - draw a contour sketch map? 	

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		iii) The teacher to guide students to explain the purpose of leveling. iv) The teacher should guide students to make linkage between leveling and contouring.			
	b) carryout leveling exercise.	i) The teacher to guide students to carryout leveling survey on a selected site. ii) The teacher to guide students to use the data collected in leveling exercise in plotting a contour map. iii) Students to explain the importance of leveling in sustainable agriculture.	<ul style="list-style-type: none"> Survey site. Materials for sketch mapping. 	Is the student able carryout levelling survey?	
6.0 TOPOGRAPHIC MAP INTERPRETATION 6.1 Types of maps.	By the end of this sub- topic, the student should be able to: a) categorise maps.	i) Using map samples, the teacher to guide students to group maps in different types. ii) the teacher to assist students to compare their work.	<ul style="list-style-type: none"> Maps. List of questions. 	Is the student able to name types of maps according to their qualities?	53
	b) differentiate the common types of maps in relation to map qualities.	i) The teacher to assist students in groups to identify the common qualities of maps. ii) The teacher to guide students to present their observations in summarize. iii) Using questions, the teacher to assist students to relate and interpret the effects of scale on represented information on maps.	<ul style="list-style-type: none"> Maps. List of questions. 	Is the student able to differentiate maps according to their qualities?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
6.2 Determining directions and areas.		iv) The teacher to assist students to draw linear scales graphically.			
	By the end of this sub- topic the student should be able to: a) The students should be able to explain the importance of direction in map interpretation.	i) The teacher to assign students to discuss the significance of direction (latitudes, longitudes, grids) in determining places on maps. ii) The teacher to guide students to present their findings.	Atlases, topographical maps.	Is the student able to state the importance of direction on maps?	
	b) calculate areas of different places on maps.	i) The teacher to guide students to calculate the area of provided topographical maps and a classroom floor. ii) Using maps, the teacher to guide students to calculate areas of irregular places on maps (i.e. swamps, lakes, forested parts).	<ul style="list-style-type: none"> • Topographical maps. • Atlases . • Mathematical sets. • Magnetic compass. 	Is the student able to calculate the area of map?	
c) reduce and enlarge maps.		The teacher to i) demonstrate how to reduce and enlarge maps. ii) to guide students to perform an exercise on reducing and enlarging maps. iii) guide students to relate amount of information on reduced maps and enlarged maps.	Gadget for reducing and enlarging maps.	Is the student able to reduce and enlarge maps?	

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6.3 Map orientation.	By the end of this sub- topic the student should be able to a) explain the importance of position during map orientation.	i) The teacher to guide students to orient maps their places using natural and artificial features. ii) The teacher to guide students to use magnetic compass to identify their position. iii) The teacher to guide students to discuss the significance of maps orientation at local and global level.	Compass.	Is the student able to: - explain the importance of position on a map? - calculate bearing of objects/features?	
	b) calculate the bearing.	The teacher to: i) guide the students to differentiate types of norths ii) The teacher to guide students to calculate the magnetic variation, magnetic north and true bearing	Different maps with north direction.		
6.4 Understanding features on maps.	By the end of this sub- topic the student should be able to: a) identify and interpret natural artificial features on maps.	The teacher to: i) guide students to discuss different ways of representing relief features on maps. ii) guide students to interpret different landforms on map. iii) guide students to analyse and relate climate, vegetation and economic activities on maps to landscape.	Environment and site.	Is the student able to: identify features on maps?	
	b) recognize the causes of changes on landscape and suggest measures.	i) Using topographical maps the teacher to guide students to examine different land use practices on various places.	<ul style="list-style-type: none"> • Films, photographs. • Environment. 	Is the student able to : describe causes for changes of landscape?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
		ii) Using films and photographs the teacher to guide students to describe the major causes of changes on landscape and highlight possible measures.			
	c) draw relief sections and interpret intervisibility.	i) The teacher to demonstrate on how to draw cross sections of selected places on maps. ii) The teacher to assist students to draw cross sections and interpret features represented. iii) The teacher to guide students to interpret intervisibility and its implication.	Mathematical tools.	Is the students able to: - draw relief sections ? - interpret the state of intervisibility?	
6.5 Model development of landscape.	By the end of this sub- topic the student should be able to a) construct a model of landscape. b) describe the significance of model development in life systems.	i) The teacher to guide the students to mould models of landscape. ii) The teacher to guide the students to construct a physical sketch map. i) The teacher to guide the students to think and pair to outline the significance of model of landscape in life. ii) Student carry out of plenary presentation on significance of developing model landscape.	<ul style="list-style-type: none"> • Landscape moulds. • Environment. 	Is the student able to: - construct model of a landscape? - describe the significance of model of landscape in life?	
7.0 PHOTOGRAPH INTERPRETATION 7.1 Types of photograph on geographical phenomena.	By the end of this sub- topic, the student should be able to describe the major types of photographs i.e. ground, air and satellite imageries.	Teacher to guide students to identify differences between ground and air photographs.	Photographs.	Is the student able to: describe the types of photocopy?	27

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
7.2 Components and features of photographs.	By the end of this sub- topic, the student should be able to describe the position of objects on the photographs.	By use of various photographs, the teacher to guide students in identification of objects (on photographs) with focus on fore, middle and background or right, middle and left handside.	Photographs.	explain the position of objects on the photographs?	
7.3 Importance and use of photographs.	By the end of this sub- topic, the student should be able to give an account of the use of photographs.	<ul style="list-style-type: none"> i) By use of various photographs the teacher to guide students in identifying location of objects (on photographs). ii) Teacher to elaborate the process of reading, analyzing and interpreting photographs. iii) Interpret the photograph and account of the concepts of scale, size, distance and shape of any object. iv) Students to describe shadows, tone, gradation, size of photographed area; pattern of land use and texture of photograph. 	Photographs.	Is the student able to account for the uses of photographs in social and economic activities?	
7.4 Type of information from the photographs.	By the end of this sub- topic, the student should be able to : a) state how the scale of photograph is determined.	Teacher to guide students to describe the basic of stereoscopic examinations of photographs, i.e. overlapping principal points and the direction of space vessel that photographed the area (air craft or satellite).	stereoscope (ref University of Dar es Salaam.	Is the student able to State how the scale of photographs is determined?	

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	<p>b) extract the types of information in the fore, middle and background and right, middle and left handside of the photograph.</p>	<p>i) Using photographs on geographical phenomena, the teacher to guide students in extracting relevant information. ii) Students to link the extracted information to the real situation/phenomena on the ground. iii) Students to discuss problems associated with extracting information from photographs. iv) Teacher to guide a discussion on the use of extracted information.</p>	<p>Photographs.</p>	<p>Is the student able to:</p> <ul style="list-style-type: none"> - extract and interpret information represent in the photographs? - describe the use of the information extracted from maps? 	

FORM VI

Class Competences

At the end of form six, students should have the ability to:

1. Use local, regional and global resources sustainably according to local conditions.
2. Participate actively in activities which reduce the impact of adverse effects of weather and climate on environment.
3. Take actions which enhance economic productivity of the local human population.

Class Objectives

At the end of studying the subject at form six students should be able to:

- a) Explain the sustainable use of resources such as water, soil, forestry, minerals energy and livestock.
- b) Describe natural and human impacts on weather and climate.
- c) Describe population dynamics and their impacts on economic development.
- d) Draw relevant experiences from other countries to understand the effective ways of using natural resources in Tanzania.
- e) Demonstrate different ways of sustainable use of our environment.

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
<p>1.0 Water Masses 1.1 Ground Water.</p>	<p>By the end of this sub-topic, students should be able to:</p> <p>a) describe features of underground water</p>	<p>The teacher to:</p> <p>i) guide students to brainstorm what is ground water and how is formed.</p> <p>ii) organize a visit to nearby ground water and allow students to analyze the feature they observe.</p> <p>iii) guide students to summarize the features they have observed.</p>	<ul style="list-style-type: none"> • Sketch diagrams on underground water. • Pictures of underground. 	<p>Is the student able to: describe features of underground water and karst scenery?</p>	40
	<p>b) identify types of underground water.</p>	<p>The teacher to:</p> <p>i) guide students to identify underground water in their vicinity.</p> <p>ii) guide students to classify types based on origin and location.</p> <p>iii) should differentiate types and summarize with examples.</p>	<p>Picture of underground water emanates from the ground.</p>	<p>is the student able to identify types of underground water?</p>	
	<p>c) describe hydrological cycle and its link to underground water.</p>	<p>The teacher to:</p> <p>i) guide students to describe features that form the cycle.</p> <p>ii) guide students diagrammatically to idealize the water cycle in real life and relate to underground water.</p> <p>iii) draw and summarize the hydrological cycle.</p>	<p>Picture of hydrological cycle.</p>	<p>Is the student able to: describe hydrological cycle and link to underground water?</p>	
	<p>d) discuss the importance of underground water in life.</p>	<p>The teacher to:</p> <p>i) guide students to discuss potential threats to underground water in terms of use and pollution and how to manage.</p> <p>ii) guide students to idealize how life on earth would be without underground water.</p>		<p>Is the student able to: discuss the importance of underground water with examples from arid regions?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
1.2 Inland Drainage.	By the end of this sub-topic the student should be able to a) define drainage systems, inland drainage systems and drainage basin.	iii) guide students to highlight the importance of underground water in life drawing examples from arid areas. The teacher to i) guide students to undertake field study of local stream and elaborate the concepts. ii) guide students to differentiate drainage systems, inland drainage systems and drainage basins based on field study. iii) guide students to carry out field study write the summary of drainage systems, basins and inland drainage systems.	<ul style="list-style-type: none"> Diagrams on drainage basins, river order, river basins. Topographic al maps. 	Is the student able to define drainage systems, inland drainage systems and drainage basins?	
	b) differentiate drainage basins.	i) The teacher to guide students to brainstorm and differentiate between basins, catchments, discharge, regimes, capture and rejuvenation. ii) The teacher to guide students to describe and differentiate terms basing on texts and maps. iii) The teacher to guide students to summarize the differences and make plenary presentations.	Topographic al maps showing basins and patterns.	Is the student able to differentiate drainage basins?	
	c) describe common river patterns.	The teacher to: i) guide students to discuss river patterns.	<ul style="list-style-type: none"> Diagrams on drainage basins, river order, river basins, river regimes and rejuvenation. Topographic al maps showing basins and patterns. 	Is the student able to: - describe common river pattern?	

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		ii) using topographical maps, to guide students to identify river pattern and relate to their relief or topography. iii) guide students determine how to measure river width, volume, length and depth and let them explain the importance of such activity.		- identify and interpret river patterns in topographical maps?	
	d) different types of lakes and their mode of formation and types.	The teacher to i) guide students to search the meaning of lakes. ii) guide students to differentiate between a lake and swamps. iii) guide students to classify types of lakes. iv) guide students to describe how lakes are formed.		Is the student able to: - differentiate types of lakes? - describe the mode of formation according to types?	
	e) explain the importance of inland drainage, surface water flow, run off and process of percolation in the environment.	The teacher to: i) guide students to describe the inland drainage, surface water flow, run off and percolation. ii) The teacher to guide students to describe what influences the process. iii) The teacher to guide students to explain the importance of each process to the environment.		Is the student able to explain the importance of inland drainage, surface water flow, run off and percolation process?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	f) evaluate economic importance of river basin in Tanzania and China.	<ul style="list-style-type: none"> i) The teacher to guide students to use Tanzania maps to identify river basin in Tanzania and China. ii) The teacher to guide students to describe social and economic activities taking place in those basins. iii) Students should summarize the importance of river basins to the economic development of China and Tanzania. 	Topographical maps of Tanzania and China.	Is the student able to evaluate the economic importance of river basins?	
1.3 Wetlands and Swamps	<p>By the end of this sub-topic the student should be able to:</p> <ul style="list-style-type: none"> a) describe wetlands and swamps and differentiate them. b) identify types of wetlands. c) examine the functions and importance of wetlands/swamps to the environment and in life. 	<ul style="list-style-type: none"> i) The teacher to guide students to discuss wetlands and swamps. ii) The teacher to guide students to discuss why wetlands are sometimes called wet lands. iii) The teacher to guide students to differentiate between wetlands and swamps. 	Topographical maps.	<p>Is the student able to:</p> <ul style="list-style-type: none"> - describe wetlands? - differentiate wetlands from swamps? 	
		<ul style="list-style-type: none"> i) The teacher to guide students to classify wetlands based on location. ii) The teacher to guide students to discuss the basis of such classification (size, depth, area). iii) Students should be able to summarize the types of wetlands basing on agreed criterion. 	Picture of wetlands and wetland resources.	Is the student able to identify types of wetlands?	
		<ul style="list-style-type: none"> i) The teacher to guide students to describe how wetlands works (they are kidneys of the world). 	Picture of wetland products like cat fish, reeds.	Is the student able to:	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
1.4 Oceans and Seas.	<p>By the end of this sub-topic the student should be able to</p> <p>a) describe oceans and seas and differentiate them from lakes.</p> <p>b) describe major groups of oceans basins according to their depth, size and boundaries.</p>	<p>ii) The teacher to organize a visit to a nearby wetland and describe social and economic activities taking place in the area.</p> <p>iii) The teacher to guide students to deduce other function of wetland and swamps based on what they have observed.</p> <p>iv) Students to summarize the functions of wetlands/swamps in life.</p> <p>v) Students to summarize the importance of wetlands/swamps in life.</p>	<ul style="list-style-type: none"> • World maps showing distribution of oceans and seas. • World maps showing oceans. • Pictures/photographs showing different marine resources. 	<p>- examine the functions of wetlands and swamps in the environment and in life?</p> <p>- examine the importance of wetlands and swamps to the environment and in life?</p>	
		<p>i) The teacher to guide students to discuss the nature of ocean and seas.</p> <p>ii) The teacher to guide students to differentiate oceans/seas and lakes on the basis of size.</p> <p>iii) The teacher to guide students to categorize oceans.</p> <p>The teacher to guide students to describe the major groups of ocean basis according to their size, depth and boundaries.</p>		<p>Is the student able to:</p> <ul style="list-style-type: none"> - describe oceans and seas? - differentiate ocean and seas from lakes? <p>Is the student able to describe major groups of ocean basins according to depth, size and boundaries?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	c) determine the chemical composition of the oceans.	i) The teacher to guide students to describe chemical composition of the oceans. ii) The teacher to guide students to explain the sources of chemicals in the oceans. iii) Organize study visits to marine sites to identify minerals of the oceans, biological diversity and other resources. iv) Students to search from texts and other sources to explain the type of marine resources and their uses.	<ul style="list-style-type: none"> • Texts. • Pictures of marine resources. • Web based resources. 	Is the student able to determine the chemical composition of the oceans?	
	d) analyze the distribution of water in percentage by volume.	i) The teacher to guide students to analyse the distribution of ocean water basing on percentages (underground, surface fresh and saline (lakes, swamps, seas, oceans, rivers) aquifers (icebergs).		Is the student able to analyze the distribution of water in percentage volume?	
	e) examine the type of ocean movements.	i) The teacher to guide students to analyze the type of ocean movements (their causes and effects). ii) The teacher to guide students to describe the importance of ocean movements to life in the oceans.	Maps showing ocean currents.	Is the student able to: <ul style="list-style-type: none"> - examine the types of ocean movements? - examine the causes of ocean movements? - examine the influence of ocean currents? 	

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1.5 Coral Coast.	By the end of this sub-topic the student should be able to: a) explain types of coral reefs and how they are formed.	i) The teacher to guide students to search and explain types of corals. ii) The teacher to guide students to describe how corals reefs are formed iii) The teacher to guide students to explain the role of polyps in building up coral reefs	Picture of corals.	Is the student able to: - explain types of the coral reefs? - explain how corals are reefs formed?	
	b) examine the condition for coral growth and its importance to human and other life forms.	i) The teacher to guide students to explain where to find corals. ii) Organize a study visits to a coastal area to study coral features. iii) Using texts and other sources of literature, the teacher to guide students to describe the condition for coral growth. iv) The teacher to guide students to debate whether corals reefs have any importance to human and marine life.	Study visits.	Is the student able to: - examine the condition for growth of coral? - explain the importance of corals - for human and in life?	
	c) differentiate types of corals and locate the distribution of coral reefs globally.	i) The teacher to guide students to locate different corals on the map. ii) The teacher to guide students to discuss the shape of corals as seen on maps. iii) The teacher to guide students to explain why corals are distributed world wide.	Maps of the world showing the distribution of corals in the world.	Is the student able to: - differentiate type of corals? - locate the distribution of corals reefs globally?	
	d) evaluate the threats to coral reefs and how to manage those threats.	i) The teacher to guide students to evaluate how some human activities affects corals.	<ul style="list-style-type: none"> • Texts. • Web based resources. 	Is the student able to: - evaluate the threats to coral reefs?	

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		<p>ii) Using texts and web resources, the teacher to guide students to identify practices that threatens the corals and their activities.</p> <p>iii) The teacher to guide students to propose some corrective measures to manage corals.</p>		<p>- manage coral threats?</p>	
1.6 Water Use and Management.	<p>By the end of this sub-topic the student should be able to:</p> <p>a) describe how water use influences life on earth.</p> <p>b) examine how water use can result in user conflict.</p>	<p>i) The teacher to guide students to make a search library literature and web resources to come up with a summary on how people use water resources i.e irrigation, hydro electricity, navigation, fishing. etc</p> <p>ii) The teacher to invite an expert form management institution to talk on misuse of water in the community.</p> <p>iii) The teacher to guide students to debate on responses to situations where there are no water on earth.</p>	<ul style="list-style-type: none"> • Library. • Web resources. • Resource person. 	<p>Is the student able to describe how water use influences life on earth?</p>	8
		<p>i) Using example from focal countries, the teacher to guide students to point out some projects developed along the water bodies.</p> <p>ii) The teacher to guide students to discuss the impact of developing numerous projects on same water bodies to other users.</p> <p>iii) Using questions and answers, the teacher to guide students to highlight possible conflicts likely to arise from water uses and suggest sustainable ways of managing conflicts.</p>	<p>Questions and answers.</p>	<p>Is the student able to examine how water use can result in user conflicts?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	<p>c) evaluate the impact of pollution on water use and management.</p>	<p>i) Using texts and web resources, the teacher to guide students to examine how water is polluted. ii) Using library search and web resources, the teacher to guide students to establish the magnitude of water pollution in Tanzania and the world. iii) The teacher to guide students to assess the impact of water pollution to social and economic development of the community. iv) Using water quality kit, students to establish the degree of water pollution from local sources. v) The teacher to guide students on a discussion on local, national and international levels, the measures to contain water pollution.</p>	<ul style="list-style-type: none"> • Texts. • Library search. • Web resources. • Water quality kit. 	<p>Is the student able to:</p> <ul style="list-style-type: none"> - evaluate the impact of pollution on water use? - manage the impact of pollution on water use? 	
	<p>d) examine the practice of water harvesting and wise use of water.</p>	<p>i) The teacher to guide students to discuss the driving forces for water harvesting. ii) The teacher to organize a site visit to areas where water harvesting practices is carried out. iii) Using questions and answers, the teacher to guide students to examine how water can be used wisely and rationally for social and economic development.</p>	<ul style="list-style-type: none"> • Site visits. • Question and answers. 	<p>Is the student able to:</p> <ul style="list-style-type: none"> - examine the practice of water harvesting? - use water wisely? 	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
		iv) The teachers to guide students to examine problems experienced in water harvesting and suggest ways of overcoming them.			
2.0 Study of Soils 2.1 Concepts of Soils and Soil profile.	By the end of this sub-topic the student should be able to: a) describe the terms soils and soil profile.	i) The teacher to guide students to read texts and web resources to draw the meaning of soil and of soil profile. ii) The teacher to organize a debate on the divergent views of concepts of soils and rocks. iii) The students to prepare a statement to reflect on the meaning of soils and rock.	<ul style="list-style-type: none"> • Texts. • Web Resources. 	Is the student able to describe terms soils and soil profile?	60
	b) relate soils and rocks.	i) Students to show the direction of soil consolidation. ii) Prepare notes to point out the relationship between rocks and soils. iii) The teacher to guide students to differentiate soils from rocks.		Is the student able to relate soils and rocks?	
2.2 Soil Formation.	By the end of this sub-topic the student should be able to: a) summarize factors for soil formation.	i) The teacher to guide students in the process of describing soils formation through use of soil triangle. ii) Students to read texts and point out factors for soil formation. iii) Using soil map of Tanzania, the teacher to guide students to summarize factors for soil formation in different ecological zones of the country.	<ul style="list-style-type: none"> • Soil map of Tanzania. • Texts. 	Is the student able to summarize the factors for soil formation?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	b) describe soil characteristics.	<ul style="list-style-type: none"> i) While in the field, the teacher to guide students to observe and describe soil characteristics. ii) The class to make links between soil characteristic and parent rocks. 	Field study.	Is the student able to describe soil characteristics?	
2.3 Soil Classification.	<p>By the end of this Sub-topic the student should be able to:</p> <ul style="list-style-type: none"> a) classify soils. 	<ul style="list-style-type: none"> i) Students to gather information on the meaning of soil classification. ii) Using library and web resources information, the teacher and students to discuss variables that guide the process of soil classification. iii) The teacher to guide students to different areas to bring soil samples and compare their qualities. iv) Students to attempt a classification of soils according to the variables above. 		Is the student able to classify soils?	
	b) analyze problems experienced in soil classification.	<ul style="list-style-type: none"> i) Students to find out information about common problems experienced during soil classification. ii) The teacher to invite field soil expert to lead a discussion on problems faced when classifying soils. 	Guest speaker.	Is the student able to analyze problems experienced in soil classification?	
	c) examine soil profile.	<ul style="list-style-type: none"> i) Through a field study the teacher to work with students in observing a cutting through the earth (road cutting of gully or dug out pit). ii) The team to observe the different parts of the profile and record what they note per different depth. 	Field study.	Is the student able to examine soil profile?	

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2.4 Soil Fertility.	d) study soil types in the field.	<p>iii) The team to examine the visual processes of different stages of soil consolidation.</p> <p>i) The teacher to guide a brainstorming session on the factors that determine soil types.</p> <p>ii) Students to link soil types to the determinant factors.</p> <p>iii) The teacher to prepare a hands on activities for students to come up with different types of soils.</p>		Is the student able to study soil types in the field?	
	By the end of this sub-topic the student should be able to:	<p>i) Students to hold a debate on soil fertility.</p> <p>ii) Students to read on what a term what infertile soils means.</p>		Is the student able to examine the meaning of soil fertility?	
	b) explore the factors for soil fertility.	<p>i) The teacher to team teach and guide students in analyzing variables of soil fertility (i.e. acidity, drainage, soil structure, alkalinity, organic content and presence of life).</p> <p>ii) Students to develop report on the factors of soil fertility.</p>		Is the student able to explore the factors for soil fertility?	
c) examine the indicators of soil fertility.	<p>i) Students to read about indicators of soil fertility from texts and electronic resources.</p> <p>ii) The teacher to guide student to a filed study to observe the impacts of fertile soils and infertile soils on flora.</p>	<ul style="list-style-type: none"> • Soils samples. • Soil kit. 	Is the student able to examine the indicators of soil fertility?		

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2.5 Loss of Soil Fertility.		<p>iii) Students to analyze soil samples to identify the levels of fertility.</p> <p>iv) Using a soil kit, students to perform experiments to determine indicators of soil fertility.</p>			
	<p>By the end of this sub-topic the student should be able to:</p> <p>a) identify indicators of loss of fertility.</p>	<p>i) The teacher to organize a discussion to identify indicators of soil infertility.</p> <p>ii) The teacher to organize a field study to several study sites to observe the process for soil fertility loss.</p>	Field site.	Is the student able to identify indicators of loss of fertility?	
	<p>b) examine factors for soil degradation.</p>	<p>i) Students to review literature and picture/photographs to analyze causes of soil degradation.</p> <p>ii) The teacher to provide guides for students to observe the degraded soils in the filed.</p> <p>iii) Students to categorize the causes/factors of soil degradation according to location and levels of impact on soils.</p>	Texts.	Is the student able to examine factors for soil degradation?	
	<p>c) describe the consequences of soil degradation.</p>	<p>i) The teacher to organize student in group discussion and presentation on the consequences of soil degradation.</p> <p>ii) The teacher to invite land management expert to guide a field visits for observing consequences of soil degradation.</p>	<ul style="list-style-type: none"> • Guest speaker . • Soil resource film. 	Is the student able to describe the consequences of soil degradation?	

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2.6 Soil Conservation and Management.		<p>iii) Through watching soil resource film, students to explain the consequences of soil degradation in Tanzania.</p> <p>iv) Through developing future's wheel, the teacher to guide students to observe the various forces and effects of soil degradation.</p>			
	By the end of this sub-topic the student should be able to:	<p>i) The teacher to organize a brainstorming session for drawing differences between soil conservation and soil management.</p> <p>ii) Students to exemplify respective soil conservation and management practices.</p>		Is the student able to: differentiate between soil conservation and management?	
	b) identify roles of institutions in conserving and managing soils.	<p>i) The teacher to invite soil expert from environmental management institutions (i.e. NEMC and District Environmental Unit) to make presentation on institutional policies and roles in managing and conserving soils in Tanzania.</p> <p>ii) Establish school soil management policy and us it in implementing the soil conservation projects.</p>	Guest speaker.	Is the student able to identify roles of institutions in conserving and managing soils?	
c) demonstrate methods for soil conservation.	i) The teacher to invite an expert (on soil management) to make a presentation on the process of soil management drawing local and national examples.	<ul style="list-style-type: none"> • Guest speaker. • Field study Projects. 	Is the student able to demonstrate methods for soil conservation?		

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		<p>ii) The teacher to organize a field study to places where soil conservation practices can be observed focusing on both traditional and conventional.</p> <p>iii) Students to develop and implement soil conservation project at the school.</p>			
3.0 Space Dynamic 3.1 Weather and Climate.	<p>By the end of this sub-topic the student should be able to.</p> <p>a) distinguish between weather and climate.</p>	<p>i) The teacher to guide students to discuss how climate and weather is determined using texts and statistical weather.</p> <p>ii) The teacher to assist students to collect climate data for different period of times from the library.</p>	<ul style="list-style-type: none"> • Texts. • weather statistics and weather maps. 	<p>Is the student able to distinguish between weather and climate?</p>	77
	<p>b) analyze the major elements of weather and factors affecting climate.</p>	<p>i) The teachers to organize students in groups to walk around the school environment to observe and record elements of weather observed from the atmosphere.</p> <p>ii) The teacher to assist students to describe the impact of climate change to social and economic activities.</p>	<p>Natural phenomena.</p>	<p>Is the student able to analyze the major elements of weather and factors affecting climate?</p>	
	<p>c) account for instability in the atmosphere.</p>	<p>The teacher to organize video show on weather and climate changes.</p> <p>With focus on tropical cyclone (the hurricane, typhoons, wily willies, Tsunami and depressions) and subtropical cyclone such as the tornadoes.</p>	<p>Video show.</p>	<p>Is the student able to account for instability in the atmosphere.</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	d) analyze the vertical structure, composition and behaviour of the atmosphere.	The teacher to guide students to use texts and photographs to analyze structure and behaviour of the atmosphere.	<ul style="list-style-type: none"> • Tests. • Photographs and globe. 	Is the student able to analyze the vertical structure, composition and behaviour of the atmosphere?	
3.2 Weather Changes.	By the end of this sub-topic the student should be able to: a) use instruments to measure humidity, rainfall, temperature etc.	The teacher to organize study tour to visit weather station where students will be guided to use instruments at the station.	Study tour in actual weather stations and instruments.	Is the student able to use instruments to measure humidity, rainfall, temperature?	
	b) read, record and analyze the daily, monthly and annual weather data.	The teacher to guide students to design weather instruments using local resources like funnel, compass and rain gauge.	Using local resources.	Is the student able to read, record and analyze the daily, monthly and annual weather data?	
	c) calculate humidity, coefficient (refer to use of hygrometer).	The teacher to guide students to read, record and analyze daily, monthly and annual weather data.	<ul style="list-style-type: none"> • Graphs • Weather instruments. 	Is the student able to: calculate humidity, coefficient?	
	d) explain the difference between heat and temperature .	i) Using different maps and pictures the teacher to guide student to discuss the associations that existing between pressure, temperatures and winds. ii) Using example, the teacher to guide students to differentiate between normal environmental lapse rate and adiabatic cooling.	Use of pictures and maps.	Is the student able to: - explain the difference between heat and temperature?	

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		<p>iii) The teacher to guide students to relate the situation to real life situation.</p> <p>i) The teacher to organize a site visit to a weather forecasting station and assess how forecasting is done.</p> <p>ii) Using library literature, the students to identify instruments used in weather forecasting.</p> <p>iii) The teacher to guide students to explain the importance of weather forecasting for human development and survival.</p>		<p>- differentiate between normal environmental lapse rate and adiabatic</p> <p>Is the student able to:</p> <ul style="list-style-type: none"> - explain how weather forecasting is done? - explain its importance to human activities? 	
3.3 Climate Change.	<p>By the end of this sub-topic the student should be able to:</p> <p>a) define climate change.</p> <p>b) describe the changing patterns of weather and climatic fluctuation since 1850s.</p>	<p>The teacher to guide students to discuss about climate changes since 1850s by using pictures and data on climate change.</p> <p>The teacher to discuss with students the impact of climate change on earth by using different pictures showing effects of ice and snow melting in oceans, hydrological cycles, settlement, agriculture and economic.</p>	<p>Current and past data on climate.</p> <p>Pictures showing events and cases of impact of climate changes.</p>	<p>Is the student able to define climate change?</p> <p>Is the student able to describe the changing patterns of weather and climatic fluctuation since 1850s?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	<p>c) outline the major causes of climate change on earth.</p>	<p>i) The teacher to discuss with students on the major causes of climate change on earth by using geographical magazines, videos and pictures (the role of chloroform carbons water vapour, carbon dioxide, methane and nitrous oxide (CFCs), green house gases, ozone layer depletion, acid rain.</p> <p>ii) The teacher to guide students to read texts about climate change attributed to green house gases, ozone layer depletion and acid rain.</p> <p>iii) The teacher to guide students to discuss the impact of climate change to human, social life and the environment.</p>	<ul style="list-style-type: none"> • Discovery magazines. • Videos and pictures. 	<p>Is the student able to outline the major causes of climate change on earth?</p>	
	<p>d) describe the impact of climate change on earth.</p>	<p>i) The teacher to organize and invite visitor/expert on the impact of climate changing and focus on ice and snow, ocean and coast, ecosystems, hydrological cycle, water resources, food and agriculture, settlements and economic activities to discuss with students on how to sustain and reduce the effects of climate change at local and international level.</p> <p>ii) The teacher to guide students to work on project focusing on the role of human activities and how to protect the environment.</p>	<p>Expert from metrological stations.</p>	<p>Is the student able to describe the impact of climate change on earth?</p>	

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	<p>e) debate on how to sustain climate and reduce its impacts at local and international level.</p>	<p>i) The teacher to guide students to discuss how can they sustain climatic variation and reduce the impact to their activities. ii) Using text and web resources, the teacher to guide students to identify national and international efforts in managing and controlling climate. iii) The teacher to guide students to assess the applicability of such efforts in managing climate in Tanzania.</p>	<ul style="list-style-type: none"> • Text. • Web resources. 	<p>Is the student able to debate on how to sustain climate and reduce its impacts at local and international level?</p>	
3.4 Climatology.	<p>By the end of this sub-topic the student should be able to:</p> <p>a) explain climatology and describe the typical characteristics of climatic regions of the world.</p> <p>b) use data from weather stations, plotting graphs/maps.</p>	<p>i) The teacher to guide students to describe the typical characteristics of the climatic regions of the world by using world climatic maps. ii) The teacher to guide students to draw climatic regions of the world.</p>	<ul style="list-style-type: none"> • World Climatic. • Maps. 	<p>Is the student able to:</p> <ul style="list-style-type: none"> - explain climatology? - describe the typical characteristics of climatic regions of the world? <p>Is the student able to use data from weather stations in plotting graphs/maps?</p>	21

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	c) explain the approaches/ principles used in classifying climate.	i) The teacher to assist students to discuss approaches used in classifying climate. ii) Guide students to identify advantages and limitations of each classification systems.	Graphs, maps and charts.	Is the student able to: explain the approaches/ principles used in classifying climate?	
	d) describe the major types of climates of the world.	The teacher to guide the student to discuss the major types of climate of the world.	World climate map.	Is the student able to: describe the major types of climates of the world?	
4.0 Population and Development 4.1 Concepts of population and development.	By the end of this sub-topic the student should be able to: a) describe the term population and development.	i) Using texts and web resources, the teacher to guide students to describe the term population and development. ii) Based on reading and discussion, students to summarize the description of population and development.	<ul style="list-style-type: none"> • Texts. • Web resources. 	Is the student able to: describe the term population and development?	35
	b) explain the relationship of population to development.	i) The teacher to guide students to discuss the indicators of development. ii) Using questions and answers, the teacher to guide students to compare population and development in rural and urban areas.	Questions and answers.	Is the student able to explain the relationship of population to development?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
4.2 Population Structure.	By the end of this sub-topic the student should be able to: a) explain the characteristics of population.	i) Using texts and web resources, the teacher to assign students to describe the characteristics of population. ii) The teacher to guide students using population age, size, sex and density to describe the main characteristics of population.	<ul style="list-style-type: none"> • Texts on population. • Population data of focal countries. • population pyramid graphs. • Atlas. 	Is the student able to Explain the characteristics of population?	
	b) compare the population structure of Norway, China and Tanzania.	i) Using population data of focal countries, the teacher to guide students to draw the population pyramid and compare them ii) The teacher to guide students to discuss the implication of population pyramid for focal countries.		Is the student able to compare the population structure of Norway, China and Tanzania?	
	c) analyze the impact of population structure in focal countries on social and economic development.	i) The teacher to guide students discuss the impacts of population structure in focal countries on social and economic development. ii) The teacher to guide students carry on a debate on the impact of population growth on resource use, employment and settlement.		Is the student able to analyze the impact of population structure in focal countries on social and economic development?	
4.3 Population dynamics and quality of life.	By the end of this sub-topic the student should be able to: a) describe birth, death and migration.	i) The teacher to guide students to brainstorm in groups on the meaning of terms birth, death and migration drawing examples from focal countries. ii) Using texts and web resources, the teacher to guide students describe the causes of high birth rate, high death rate and migration in focal countries.	<ul style="list-style-type: none"> • Texts. • Web resources. 	Is the student able to describe birth, death and migration?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	b) analyze the effects of population change in country's development.	i) Using questions and answers, the teacher to guide students to analyse the effects of population dynamics on social and economic development of focal countries. ii) Using population census data of Tanzania, the teacher to guide students to examine the impact of population migration in Tanzania focusing on rural urban migration and refugees on social services. iii) The teacher to guide students to discuss the techniques that can be used to reduce the impact of population dynamics society.	<ul style="list-style-type: none"> • Questions and answers. • Population census data. 	Is the student able to analyze the effects of population change in country's development?	
4.4 Population growth and its social and economic planning.	By the end of this sub-topic the student should be able to: <ul style="list-style-type: none"> a) compare life expectancy in developed and developing countries and its impacts. 	i) Using questions and answers, the teacher to guide students to discuss and give meaning of life expectancy. ii) Using texts and web resources, the teacher to guide students to examine the relationship of life expectancy to social and economic development.	<ul style="list-style-type: none"> • Questions and answers. • Texts. • Web resources. 	Is the student able to: <ul style="list-style-type: none"> - compare life expectancy in developed and developing countries? - compare the impact of life expectancy in developed and developing countries? 	

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	b) assess the contribution of population policy on population management.	i) The teacher to guide students to carry on a debate on social economic impacts of using family planning methods. ii) The teacher to guide students to discuss the impacts of family planning methods in China and Tanzania. iii) The teacher to guide students to discuss the problems of implementing population policy in Tanzania. iv) The teacher to guide students to examine the role of population planning for social and economic development.		Is the student able to assess the contribution of population policy on population management?	
	c) examine the relationship between population growth and environment.	i) Using population and distribution maps, the teacher to guide students to analyze the relationship of population size and the environment. ii) The teacher to guide students to discuss different measure for managing and conserving the environment in populated areas.	Maps.	Is the student able to examine the relationship between population growth and environment?	
5.0 Regional Focal Studies 5.1 Agricultural development.	By the end of this sub-topic the student should be able to: a) present the meaning of agriculture, organic farming and livestock keeping.	i) The teacher to invite an expert to facilitate a discussion on the meaning of agriculture, organic farming and livestock keeping.	<ul style="list-style-type: none"> • Texts. • Photographs. • Guest speaker. 	Is the student able to present the meaning of agriculture, organic farming and livestock farming?	135

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	<p data-bbox="283 1472 467 1820">ii) Using texts and photographs, students to formulate statements which connote the meaning of agriculture, organic farming and livestock farming.</p> <p data-bbox="522 1472 782 1820">b) highlight the contribution of agriculture to social economic development drawing examples from: i) fruit farming in South Africa.</p> <p data-bbox="918 1472 1024 1820">ii) cereal production in United States of America.</p>	<p data-bbox="283 973 467 1472">ii) Using texts and photographs, students to formulate statements which connote the meaning of agriculture, organic farming and livestock farming.</p> <p data-bbox="522 973 819 1472">i) The teacher to guide students to read texts on fruit farming in South Africa and point out its contribution to the South Africa's economy. ii) The teacher and students to carry on study to illustrate how fruit farming can raise the standard of living of their community.</p> <p data-bbox="918 973 1479 1472">i) The teacher to guide students to view a film, photographs and pictures or read from the web resources on the contribution of cereal (corn/wheat/barley) production in United States. ii) The teacher to guide students to study statistics of cereal production of Tanzania and show how they help people economically. iii) The teacher to guide students to organize a presentation by local farmer on how cereal crop (wheat, maize, sorghum, paddy) contribute to the livelihood of the local community.</p>	<p data-bbox="522 566 553 973">Texts.</p> <p data-bbox="918 566 1024 973"> <ul style="list-style-type: none"> • Films. • Photographs Pictures. • Web Resources. </p>	<p data-bbox="522 298 850 566">Is the student able to highlight the contribution of agriculture to social economic development drawing examples from focal countries?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	<p>iii) tree crop faming in Nigeria.</p> <p>iv) production of tubers in Tanzania.</p>	<p>i) Using relevant texts on Nigeria, students to draw example on how tree crops (cocoa, rubber, oil palm, coconut) are promoting the economic growth of Nigeria.</p> <p>ii) Using map on tree crop farming and commercial statistics, students to draw lessons on how these crops contribute to social and economic life of people of Tanzania.</p> <p>i) The teacher to guide students to study the agricultural map of Tanzania to identify the areas where tuber root crops are produced in Tanzania.</p> <p>ii) Through the use of e-research and market statistics, students to estimate the magnitude of tubers/roots produced in Tanzania.</p> <p>iii) The teacher to organize a study visit to local market on the use of the tubers/roots by local community.</p>	<ul style="list-style-type: none"> • Texts. • Pictures of tree crops. 		
	<p>c) explore the practice of organic farming in Tanzania.</p>	<p>i) The teacher to invite a resource person to present on the practice of organic farming drawing example from Tanzania and local cases.</p> <p>ii) Using text and web resource, students to read on the advantages of organic farming as opposed to farming that uses chemical fertilizer</p> <p>iii) The teacher to start gardening/ farming on which they use condition of organic farming.</p>	<ul style="list-style-type: none"> • Agricultural map. • E-research. • Site visits. 	<p>Is the student able to explore the practice of organic farming in Tanzania?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	d) assess the use of rangelands / marginal lands for agricultural production.	<p>i) Using a soil map of Tanzania, students to identify areas categorized as marginal or rangelands with focus on specific causes.</p> <p>ii) Using the information obtained from the tasks above, students to assess how these lands are being used for agricultural production (crop/livestock).</p> <p>iii) The teacher to invite an expert on fragile land areas in Tanzania to make a presentation on how to use and manage marginal/rangelands.</p>	<ul style="list-style-type: none"> • Soil map of Tanzania. • Guest speaker. 	Is the student able to assess the use of rangelands / marginal lands for agricultural production?	
5.2 Livestock Keeping and Management.	<p>By the end of this sub-topic the student should be able to:</p> <p>a) describe different types of livestock keeping.</p> <p>b) assess the mode of keeping: Sheep in Australia Beef cattle in USA and Argentina, Dairy cattle in Netherlands and Denmark, pastoralism and nomadism in West and East Africa.</p>	<p>i) The teacher to guide students to describe the types of livestock keeping in the world.</p> <p>ii) The teacher to guide students to relate the type of livestock keeping to carrying capacity.</p> <p>i) The teacher to guide students to explain how each country manages livestock in line with other economic activities.</p> <p>ii) The teacher to guide students to discuss the benefits of animal products and animal keeping practices in respective countries.</p> <p>iii) The teacher to guide students to discuss the problems associated with livestock keeping in focal countries.</p>	<ul style="list-style-type: none"> • Txts. • Photographs. <p>Texts.</p>	<p>Is the student able to describe different types of livestock keeping?</p> <p>Is the student able to assess the mode of livestock keeping in focal countries?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	<p>c) examine the problems and contribution of animal keeping to economic development and the environment.</p>	<p>i) The teacher to organize and facilitate students to have study visits to a nearby livestock keeping and observe the successes and problems. ii) The teacher to guide students to discuss the observed success and problems. iii) Guide students to highlight the possible improvement techniques.</p>	<p>Study visits schedule.</p>	<p>Is the student able to:</p> <ul style="list-style-type: none"> - examine the problems of animal keeping to economic development and the environment? - examine the contribution of animal keeping to economic development and the environment? 	
	<p>d) analyze the impact of livestock keeping on the environment in Tanzania and suggest appropriate techniques for environmental management.</p>	<p>i) The teacher to guide students to discuss on the relationship between livestock keeping and environmental degradation in Tanzania. ii) The teacher to guide students to analyze the role of individual pastoralist, veterinary officers and the government in improving this sector and managing the environment.</p>		<p>Is the student able to:</p> <ul style="list-style-type: none"> - analyze the impact of livestock keeping on the environment in Tanzania? - suggest appropriate techniques for environmental management? 	

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5.3 Sustainable use of Fuel and Power.	<p>By the end of this sub-topic the student should be able to:</p> <p>a) describe the role of fuel power in industrial development of the world.</p>	<p>i) The teacher to assign students to mention different sources of power like fossil fuel, nuclear, solar, waves, geothermal and winds.</p> <p>ii) The teacher to guide students to discuss the role of fossil fuel and other power sources in industrial development.</p> <p>iii) The teacher to guide students to describe the sustainable use of power for economic development.</p>	<ul style="list-style-type: none"> • Petroleum products like petrol, diesel, paraffin, oil and charcoal. • Different machines and equipment showing different power like cooking stoves, generators and motorcycles. 	<p>Is the student able to describe the role of fuel power in industrial development of the world?</p>	
	<p>b) outline the dangers of nuclear power production with reference from Japan and Russia/America.</p>	<p>i) The teacher to guide students using video shows and cassettes to discuss the use of nuclear power drawing examples from Japan and Russia.</p> <p>ii) The teacher to guide students to outline dangers of using nuclear power in Japan and Russia.</p>	<p>Pictures and video cassettes.</p>	<p>Is the student able to outline the dangers of nuclear power production?</p>	
	<p>c) describe the importance of petroleum in the world economy and Tanzania.</p>	<p>i) The teacher to guide students to describe the importance of fossil fuel in the world economy and of Tanzania.</p> <p>ii) The teacher to guide students to draw a world map to indicate places where fossil fuel and nuclear are generated.</p>	<p>World map/Atlas.</p>	<p>Is the student able to describe the importance of petroleum in the world economy and Tanzania?</p>	
	<p>d) identify the place of coal production for industrial use with focus on South Africa and China.</p>	<p>i) The teacher to guide students to identify places of coal production in South Africa and China.</p>	<p>An Atlas, Map and a mineral map.</p>	<p>Is the student able to identify the place of coal production for industrial use with focus on South Africa and China?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	<p>e) explore the alternative sources of energy.</p> <p>f) identify problems caused by power and fuel production on the environment.</p>	<p>ii) The teacher to guide students to draw a map of China and South Africa to indicate areas for coal production.</p> <p>iii) The teacher to guide students in discussion on the problems facing coal mining industries in China and South Africa and relate them to Tanzania.</p> <p>i) Using photograph to guide students to describe an alternative source of power for industrial development like biogas, solar and waves.</p> <p>ii) The teacher to invite guest speaker to present about alternative sources of power like TPDC and Ministry.</p> <p>iii) The teacher to guide students to outline the importance of using alternative sources of power.</p> <p>i) The teacher to guide students to discuss the problems experienced from the production of fossil fuel to the environment.</p> <p>ii) By the help from the sketch maps and pictures, the teacher to guide the discussion on the effects of fossil fuel production to the environment.</p> <p>iii) The teacher to guide students to discuss the sustainable ways of using power with focus on preserving the environment.</p>	<p>• Guest speaker.</p> <p>• Photographs on biogas solar and wave energy production.</p> <p>• Texts.</p> <p>• Geographical magazines.</p> <p>• Sketch maps.</p>	<p>Is the student able to explore the alternative sources of energy?</p> <p>Is the student able to identify problems caused by power and fuel production on the environment?</p>	

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5.4 Sustainable Mining.	By the end of this sub-topic the student should be able to: a) evaluate the contribution of mining to the economic development in Tanzania.	i) Focusing on statistics in mineral production in Tanzania, the teacher to guide students to outline the contribution of mining to the economic development in Tanzania. ii) The teacher to guide students to highlight the challenges facing mining in Tanzania. iii) The teacher to guide students to compare the problems facing mining in Tanzania in relation to other focal countries.	<ul style="list-style-type: none"> Statistics for mineral production in Tanzania. Sales/export data. 	Is the student able to evaluate the contribution of mining to the economic development in Tanzania?	
	b) illustrate methods of mineral extraction drawing examples on petroleum production in Nigeria, phosphates, cement, gold and tiles in Tanzania; copper in Zambia; coal in China and steel in United States of America.	i) The teacher to guide students to discuss the methods used in mineral extraction drawing examples from focal countries. ii) Guide students to examine if the extraction process is environmental friendly and suggest ways to improve. iii) Guide students to examine if the extraction process has highest efficiency and produces highest returns to the focal countries.		Is the student able to illustrate ways of mineral extraction drawing examples from focal countries?	
5.5 Sustainable use of Forestry.	By the end of this sub-topic the student should be able to: a) name the main forest products and describe their sustainable use.	i) Using texts, the teacher to guide students to name main forest products they have experienced in life.	<ul style="list-style-type: none"> Pictures of forestry products. Texts. Web Resources. Map of Tanzania. 	Is the student able to: - name the main forest products? - describe the sustainable use of the main forest products?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
		ii) By using pictures of harvested forestry products, the teacher to guide students to discuss the sustainable use of forest resources and how to manage these resources. iii) Using texts and web resources, the teacher to guide students to discuss the effects of deforestation to our lives. iv) Using Tanzanian map, the teacher to guide students to identify areas affected most by deforestation and the associated effects.			
	b) locate areas endowed with various types of forestry resources in the world with emphasis to Sudan, Canada, Gabon, Brazil and Tanzania.	i) Using world map, the teacher to guide students to identify countries endowed with various forestry resources. ii) Using texts and statistical information, the teacher to guide a discussion on the significance of timber to industrial, commercial and domestic sector.	<ul style="list-style-type: none"> • World map. • Statistical information. • Texts. 	Is the student able to locate areas endowed with various types of forestry resources in the world?	
	c) locate timber industry in relation to market, power and transport in different countries.	i) Using the distribution map of the world, the teacher to guide students to locate timber industry and provide reasons for such location. ii) Using example from focal countries, the teacher to guide students to describe the factors determining the growth and distribution of timber industry.	World map.	Is the student able to locate timber industry in relation to market, power and transport in different countries?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	d) examine problems facing timber industry and describe the possible solution to their problems.	i) The teacher to guide students to discuss the problems facing timber industry in focal countries. ii) Using texts and experiences from students, the teacher to guide a discussion on the best way of managing sustainable forestry resources.	Texts.	Is the student able to: - examine problems facing timber industry? - describe the possible solution to their problems?	
5.6 Sustainable Fishing.	By the end of this sub-topic the student should be able to: a) appraise the contribution of fishing in social and economic sectors. b) point out sustainable fishing methods. c) revisit fish processing methods.	i) Using texts and web resources, the teacher to guide students to search on how fishing practices is carried out. ii) The teacher to guide students to assess the contribution of fishing in social and economic development of the country. i) Using photographs the teacher to guide students in groups to discuss the sustainable methods of fishing. ii) Using plenary session, the teacher to guide students to make presentations and make summaries. i) The teacher to guide students to brainstorm on the methods which are used in fish processing and their problems ii) The teacher to guide students to analyze the improvement methods in fish processing.	<ul style="list-style-type: none"> • Texts. • Web Resources. Photographs on fishing methods. Photographs on fish processing methods.	Is the student able to appraise the contribution of fishing in social and economic sectors? Is the student able to point out sustainable fishing methods? Is the student able to revisit fish processing methods?	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	<p>d) appraise the progress made in the fishing industry in Tanzania and Russia.</p> <p>e) highlight the ways to contain effects of unsustainable fishing on the environment.</p>	<p>i) Using texts and web resources, the teacher to guide students to search the progress on fishing in Tanzania and Russia.</p> <p>ii) The teacher to guide students to make plenary presentation of their search finding for focal countries.</p> <p>i) Using question and answers, the teacher to guide students to discuss the unfriendly fishing practices in Tanzania and focal countries.</p> <p>ii) Using texts and example of unfriendly fishing practices, the teacher to guide students to identify those practices.</p> <p>iii) The teacher to guide students to suggest sustainable ways of fishing with focus on environmental conservation.</p>	<ul style="list-style-type: none"> • Texts. • Web Resources. 	<p>Is the student able to appraise the progress made in the fishing industry in Tanzania and Russia?</p>	
	<p>f) suggest how fish farming can be implemented in the community.</p>	<p>i) The teacher to guide students to explain the benefits of fish farming in the community.</p> <p>ii) Using physical maps of Tanzania, the teacher to guide students to highlight how fish farming can be implemented at small scale and at nation level.</p>	<ul style="list-style-type: none"> • Atlas. • Physical maps of Tanzania. 	<p>Is the student able to suggest how fish farming can be implemented in the community?</p>	
5.7 Environmental Friendly Tourism.	<p>By the end of this sub-topic the student should be able to:</p> <p>a) explain the concept of tourism.</p>	<p>i) Using texts and web resources, the teacher to guide students to explain the concept of tourism in various areas.</p>	<ul style="list-style-type: none"> • Tourism magazines. • Video shows. 	<p>Is the student able to explain the concept of tourism?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
		<p>ii) Sighting Tanzania as example, the teacher to guide students to identify the conditions for the growth of tourism.</p> <p>iii) Using video as a tool the teacher to assist students to relate tourism practiced in different countries to Tanzania.</p>	<ul style="list-style-type: none"> Statistics on Tourism in Tanzania and other focal countries. Site visits. 		
	<p>b) analyze the reasons for promoting environmental friendly tourisms.</p>	<p>i) The teacher to guide students using texts and web resources to analyze the reasons for promoting environmental friendly tourisms.</p> <p>ii) The teacher to guide students to compare the contribution of tourism industry to other economic sector in Tanzania.</p>	<ul style="list-style-type: none"> Texts. Web Resources. 	<p>Is the student able to analyze the reasons for promoting environmental friendly tourisms?</p>	
	<p>c) examine the socio-economic significance of environmental friendly tourisms.</p>	<p>i) The teacher to guide students to examine the significance of environmental friendly tourism citing examples from focal countries and relate them to Tanzania.</p> <p>ii) Using magazine, video shows and tourism statistics, the teacher to guide students to outline the significance of environmental friendly tourism to Tanzania.</p>	<ul style="list-style-type: none"> Video shows . Web resources. 	<p>Is the student able to examine the socio- economic significance of environmental friendly tourisms?</p>	
	<p>d) compare the success and limitations of tourisms in Tanzania, South Africa and Sweden.</p>	<p>i) The teacher to guide students to compare success and limitations of tourism in focal countries.</p>		<p>Is the student able to compare the success and limitations of tourisms in Tanzania, South Africa and Sweden?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
5.8 Manufacturing Industries.	<p>By the end of this sub-topic the student should be able to:</p> <p>a) describe types of manufacturing industry.</p>	<p>ii) The teacher to guide students to assess the experiences of focal countries in tourism in mechanisms.</p> <p>iii) The teacher to guide students to discuss and suggest some solutions to the problems facing tourism industry in Tanzania.</p>			
	<p>b) identify different industries and their operation focusing on; Aircraft in USA; Ship building in Japan; Steel rolling in Tanzania, Automobiles in Germany, Earth Moving and loading machines in Germany and Textile in China.</p>	<p>The teacher to:</p> <p>i) guide students to discuss on the types of manufacturing industries.</p> <p>ii) guide students to identify different manufacturing industries in Tanzania and draw a sketch map to indicate their location.</p>	<p>Sketch map of manufacturing industries in Tanzania.</p>	<p>Is the student able to describe types of manufacturing industry in general?</p>	
		<p>i) Using industrial distribution map, the teacher to guide students to describe the operation of manufacturing industries in focal countries.</p> <p>ii) The teacher to guide students to determine the factors for industrial establishment</p> <p>iii) The teacher to guide students to draw a sketch map showing the distribution of manufacturing industries in Tanzania.</p>	<p>Sketch map.</p>	<p>Is the student able to identify different manufacturing industries and their operation?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	c) outline necessary factors that have influenced the growth of such industries and their adverse effects to the environment.	i) The teacher to guide students to identify necessary factors influencing the growth of such industries like technology, quality labour, resources, markets competition etc. ii) The teacher to guide students to brainstorm on the problems facing manufacturing industries and their prospects for diversification. iii) Guide students to discuss the effects of manufacturing industries to the environment and how to manage them.	Statistics for production, sales and exports.	Is the student able to: - outline necessary factors that have influenced the growth of manufacturing industries? - outline the adverse effects of manufacturing industries to the environment?	
	d) assess the contribution of manufacturing industries to socio- economic and technological development to the countries.	i) Using different statistics on production and sales, the teacher to guide students to discuss the contribution of manufacturing industries in the socio-economic development of the focal countries. ii) The teacher to organize a study visit and assess the variation and available prospects for modernizing industries.	Study Visits.	Is the student able to assess the contribution of manufacturing industries to socio-economic and technological development?	
	e) assess the challenges facing Tanzania to modernize its manufacturing industry.	i) The teacher to organize a site visit to a nearby industry and learn on the mode of production and waste produced. ii) The teacher to guide students to discuss the challenges facing the growth of manufacturing industry in Tanzania.	<ul style="list-style-type: none"> • Site visits. • Texts. • Web based Resources. 	Is the student able to assess the challenges facing Tanzania to modernize the manufacturing industry?	

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5.9 Transport and Communication.	<p>By the end of this sub-topic the student should be able to:</p> <p>a) differentiate between transport and communication.</p>	<p>iii) Using texts and web based resources, the teacher to guide students to compare and contrast the manufacturing industries from focal countries.</p> <p>i) Using texts and web based resources the teacher to guide students to differentiate transport and communication.</p> <p>ii) The teacher to guide students in pairs to brainstorm on the differences between transport and communication.</p> <p>iii) The teacher to guide students to present the difference in transport and communication in plenary.</p>	<ul style="list-style-type: none"> • Texts. • Web based Resources. 	<p>Is the student able to differentiate between transport and communication?</p>	
	<p>b) describe the prominent features of transport and communication (Air transport in USA, Marine transport in Norway, Railway in South Africa, Road Transport and Communication in Japan).</p>	<p>i) Using texts and web based resources, the teacher to guide students discuss transport and communication systems in focal countries.</p> <p>ii) The teacher to guide students to discuss the factors which promote the development of transport and communication.</p> <p>iii) The teacher to guide students to analyze the changes in efficiency in transport and communication after the innovation of science and technology in respective countries.</p>	<ul style="list-style-type: none"> • Atlas. • Wall maps. • Texts on Transport and communication. • Films. 	<p>Is the student able to describe the prominent features of transport and communication?</p>	

TOPIC/ SUB TOPICS	SPECIFIC OBJECTIVES	TEACHING AND LEARNING STRATEGIES	TEACHING AND LEARNING RESOURCES	ASSESSMENT	NUMBER OF PERIODS
	c) assess the contribution of transport and communication in economic development.	i) The teacher to guide students to discuss the importance of transport and communication to a country ii) Using texts and web resources, the teacher to guide students to analyze the role of transport and communication in enhancing the social and economic interrelationships among world people.	<ul style="list-style-type: none"> • Texts. • Web based Resources. 	Is the student able to assess the contribution of transport and communication in economic development?	
	d) analyze the problems facing transport and communication sector in Tanzania.	The teacher to: i) organize a study visits to various transport and communication centres in Tanzania on problems facing this sector ii) guide students to debate on problems facing the transport and communication sector in Tanzania in relation to other countries. iii) guide students to outline the techniques that can be used to solve the problems facing this sector. iv) the teacher to guide students to discuss on the relationship of transport and communication in Tanzania	Study visits.	Is the student able to analyze problems facing transport and communication in Tanzania?	
	e) examine the impact of transport and communication development on the environment.	The teacher to guide students to debate the environmental problems caused by transport and communication in Tanzania.		Is the student able to examine the impact of transport and communication on the environment?	