



GEOGRAPHY

TEACHER'S GUIDE

(To be implemented from 2015)

Grade

10



Department of Social Sciences
National Institute of Education
Maharagama
Sri Lanka
www.nie.lk

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Geography
Grade 10
Teacher's Guide

First Print 2014

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ISBN

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Message from the Director General

The first phase of the new competency based curriculum, with 8 years curriculum cycle was introduced to secondary education in Sri Lanka in 2007 replacing the existed content based education system with basic objective of developing the national level competencies recommended by the National Education Commission.

The second phase of the curriculum cycle to be introduced to grades 6, and 10 starts from 2015. For this purpose, National Institute of Education has introduced a rationalization process and developed rationalized syllabi for these grades using research base outcomes and various suggestions made by different stakeholders.

In the rationalization process, vertical integration has been used to systematically develop the competency levels in all subjects from fundamentals to advanced levels using the bottom up approach. Horizontal integration is used to minimize the overlapping in the subject content and to reduce the content over loading in the subjects to produce more students friendly and implementable curricular.

A new format has been introduced to the teachers' guide with the aim of providing the teachers with the required guidance in the areas of lesson planning, teaching, carrying out activities and measurement and evaluation.

These guidelines will help the teachers to be more productive and effective in the classroom.

The new teachers' guides provide freedom to the teachers in selecting quality inputs and additional activities to develop the competencies of the students. The new teachers' guides are not loaded with subject content that is covered in the recommended textbooks. Therefore, it is essential for the teacher to use the new teachers' guides simultaneously with the relevant textbooks prepared by Education Publication Department as reference guides to be more aware of the syllabi.

The basic objectives of the rationalized syllabi and the new format of teachers' guide and newly developed textbooks are to bring a shift from the teacher centered education system into a student centered and more activity based education system in order to develop the competencies and skills of the school leavers and to enable the system to produce suitable human resource to the world of work.

I would like to take this opportunity to thank the members of Academic Affairs Board and Council of National Institute of Education and all the resource persons who have immensely contributed in developing these new teacher's guides.

Director General
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Message from Ven. Deputy Director General

Learning expands into a wider scope. It makes life enormous and extremely simple. The human being is naturally excellent in the skill of learning. A country when human development is considered the main focus uses learning as a tool to do away with malpractices identified with intellect and to create a better world through good practices.

It is essential to create valuable things for learning and learning methods and facilities within the adhere of education. That is how the curriculum, syllabi, teachers' guides and facilitators join the learning system.

Modern Sri Lanka has possessed a self-directed education system which is a blend of global trends as well as ancient heritage.

It is necessary to maintain the consistency of the objectives of the subject at the national level. However, facilitators are free to modify or adapt learning teaching strategies creatively to achieve the learning outcomes, competency and competency level via the subject content prescribed in the syllabus. Therefore, this Teachers' Guide has been prepared to promote the teachers' role and to support the students as well as the parents.

Furthermore, at the end of a lesson, the facilitators of the learning-teaching process along with the students should come to a verification of the achievement level on par with ones expected exam by a national level examiner, who evaluates the achievement levels of subjects expected. I sincerely wish to create such a self-progressive, motivational culture in the learning-teaching process. Blended with that verification, this Teachers' Guide would definitely be a canoe or a raft in this endeavor.

Deputy Director General

Faculty of Languages, Humanities and Social Sciences

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Instructions in using the Teacher's Guide

In this Teachers' Guide, learning outcomes, summary of the subject area and a few teaching learning methodologies for each and every subject unit are presented. Also, a few learning outcomes related to every competency level too are introduced. It is important to give special emphasis to these learning outcomes and understand the limits of the subject areas that have to be imparted essentially. The teacher should be able to motivate the students to find the required information beyond the limits of the subject area specified.

The teaching learning methodologies presented here have to be built up in a creative manner to suit the competency level mentioned, the subject content as well as to suit the number of students in the classroom and the time allotted. Apart from this the teacher has the full freedom to identify other appropriate teaching learning methodologies suitable for the competency levels and plan his or her work. When planning these methodologies it is more appropriate to prepare them in such a way that the students will be able to acquire pleasant and active learning experiences.

The textbook relevant to the Grade could be used only as a source book. Apart from this, other sources too could be made use of for the teaching learning process. This will enable the students to acquire practical experiences which will pave the way for the students to reach the expected competency levels in learning.

In order to transform information and subject concepts in the syllabus into successful learning experiences, the compilation of programs which will enable every student in active participation is considered as a responsibility of school management. A few projects related to Geography that could be carried out in schools are given below.

Setting up a Geographical Society.

This will give the opportunity to organize Quizzes or Do You Know contests, debates, exhibitions, educational tours, seminars of geographical importance. Also, discussions by intelligent panels comprised of students and sramadana activities may be organized. It is also possible to direct students in various tasks such as the preparation of wall newspapers and term publications and also in solving problems related to the subject. It will provide the opportunity to get to know the teachers and students involved in the subject and also to identify students' abilities.

Putting up a Geography Room

This will enable the development of geographical knowledge in students. Various publications, maps, learning aids relevant to the subject could be prepared and used. (Refer the Ministry letter ED/01/05/02/02/55AL and dated 2012.05.10)

Carrying out a small scale Research Project

Motivate students to prepare and present various reports produced with the help of information derived from individuals, institutions and printed and electronic media resources.

Organizing programs to develop environmental sensitivity among students

- Encourage students to work together with the environmental organizations prevalent in the region.
- Agro forestry projects
- School green belt and medicinal and herbal gardens
- Environmental pilot brigade projects
- Eco-sensitive school dramas promoting the use of eco-friendly products

Awarding colors and prizes for student creations and field note books.

Creating opportunities in making models and aids relevant to Geography.

Apart from these, a DVD disk which includes information related to facilities provided for the teaching learning process in the classroom has been prepared. Information is given under each unit.

Curriculum Committee

Contents

	Page
Message of the Director General	iii
Message of the Deputy Director General	iv
Subject Committee	v - vi
Instructions in using the Teacher's Guide	vi - vii
Syllabus Content	viii
Instructions for the Teaching - Learning Process	
10.1 The nature of the Earth System	2-6
10.2 The major Physical Characterizes of the Earth	7-9
10.3 The major Agricultural Land use types of the world	10-14
10.4 The Agriculture of Sri Lanka	15-18
10.5 The Manufacturing Industries of the world	19-21
10.6 The Industries of Sri Lanka	22-26
10.7 Study of Maps	27-30

Geography

Grade 10

Syllabus

Department of Social Sciences
Faculty of Languages, Humanities and Social Science
National Institute of Education
Sri Lanka

Introduction

Geography is a Discipline that helps to grasp the dynamism of the bio-world. This dynamism is enclosed in the geographical landscape which is the synthesized product of the interaction between the physical and human environment in space and time. Thus Geography is a Discipline that concerned with the understanding of environmental and social processes and their interrelationships at local to global levels from a spatial and temporal perspective. It is in this context that the Geography curriculum in the schools has been developed.

In the process of developing the curriculum proposed to be implemented from 2015, classroom observations, teacher-student experiences, research findings on the curriculum that was in operation during the past five years have been taken into consideration. It is expected that the proposed curriculum will be able to provide subject knowledge and understanding, skills and attitudes and in particular, the ability of different development options. It is hoped that this curricular will provide insight into managing resources which promote sustainability both in the short and long term.

Furthermore it envisages improving the ability to view the eco-societal interrelationship on the basis of ecological principles.

The syllabi have been formulated paying due consideration to the ten competencies and the seven aims related to the subject and in accordance with the age of the students and the varying competency levels depending on the learning ability. In the process it is expected that the teacher should play an evolving role using interacting teaching methods to develop competencies.

This curriculum and the Teachers' Guide proposed to be implemented from the year 2015 is the collective effort of a group consisting of Senior University Academics, Educationists, Educators and the Geography Project Team of the NIE. The ten major competencies related to the subject Geography incorporated in preparing this curriculum are mentioned below:

1. Lives with awareness of the nature and processes of the environment in which he lives.
2. Reviews the basic concepts and methodologies which help to understand the physical and human landscape.
3. Acts with awareness of the components, characteristics and processes in the physical and human landscape.
4. Acts with awareness of the manner in which the physical and human interaction impacts on the geographical environment.
5. Uses geographical techniques to collect, analyze, interpret and present data and information.
6. Applies the holistic approach in understanding, analyzing and interpreting the physical and human landscape.
7. Acts with sensitivity inculcating positive attitudes helpful in conserving and maintaining the physical and human landscape.

8. Acts with an awareness of the earth and its people in order to promote a harmonious interrelationship between the environment and society.
9. Fosters special survival skills that help to overcome challenging life situations.
10. Develops skills needed for active participation in the world of work.

National Goals

- (i) Nation building and the establishment of a Sri Lankan identity through the promotion of national cohesion, national integrity, national unity, harmony and peace and recognizing cultural diversity in Sri Lanka's plural society within a concept of respect for human dignity.
- (ii) Recognizing and conserving the best elements of the nation's heritage while responding to the challenges of a changing world.
- (m) Creating and supporting an environment imbued with the norms of social justice and a democratic way of life that promotes respect for human rights, awareness of duties and obligations and a deep and abiding concern for one another.
- (iv) Promoting the mental and physical well-being of individuals and a sustainable life style based on respect for human values.
- (v) Developing creativity, initiative, critical thinking, responsibility, accountability and other positive elements of a well-integrated and balanced personality.
- (vi) Human resource development by educating for productive work that enhances the quality of life of the individual and the nation and contributes to the economic development of Sri Lanka.
- (vii) Preparing individuals to adapt to and manage change, and to develop capacity to cope with complex and unforeseen situations in a rapidly changing world.
- (viii) Fostering attitudes and skills that will contribute to securing an honorable place in the international community, based on justice, equality and mutual respect. (Adapted from National Education Commission Report -2003)

Basic Competencies

The following Basic Competencies developed through education will contribute to achieve the above National Goals.

(i) Competencies in Communication

Competencies in communication are based on four subsets: Literacy, Numeracy, Graphics and IT proficiency.

Literacy : Listen attentively, speak clearly, read for meaning, write accurately and lucidly and communicate ideas effectively.

Numeracy : Use numbers for things, space and time, count, calculate and measure systematically.

Graphics : Make sense of line and form, express and record details, instructions and ideas with line and colour.

IT proficiency : Computer literacy and the use of information and communication technologies (ICT) in learning, in the work environment and in personal life.

(ii) Competencies relating to personality Development

- Generic skills such as creativity, divergent thinking, initiative, decision making, problem solving, critical and analytical thinking, team work, inter - personal relations, discovering and exploring;
- Values such as integrity, tolerance and respect for human dignity;
- Emotional intelligence.

(iii) Competencies relating to the Environment

These competencies relate to the environment: social, biological and physical.

- Social Environment - Awareness of the national heritage, sensitivity and skills linked to being members of a plural society, concern for distributive justice, social relationships, personal conduct, general and legal conventions, rights, responsibilities, duties and obligations.
- Biological Environment - Awareness, sensitivity and skills linked to the living world, people and the ecosystem, the trees, forests, seas, water, air and life - plant, animal and human life.
- Physical Environment - Awareness, sensitivity and skills linked to space, energy, fuels, matter, materials and their links with human living, food, clothing, shelter, health, comfort, respiration, sleep, relaxation, rest, wastes and excretion.

Included here are skills in using tools and technologies for learning, working and living.

(iv) Competencies relating to preparation for the World of Work

Employment related skills to maximize their potential and to enhance their capacity.

- To contribute to economic development.
- To discover their vocational interests and aptitudes,
- To choose a job that suits their abilities, and
- To engage in a rewarding and sustainable livelihood.

(v) Competencies relating to Religion and Ethics

Assimilating and internalizing values, so that individuals may function in a manner consistent with the ethical, moral and religious modes of conduct in everyday living, selecting that which is most appropriate.

(vi) Competencies in Play and the Use of Leisure

Pleasure, Joy, emotions and such human experiences as expressed through aesthetics, literature, play, sports and athletics, leisure pursuits and other creative modes of living.

(vii) Competencies relating to 'learning to learn'

Empowering individuals to learn independently and to be sensitive and successful in responding to and managing change through a transformative process, in a rapidly changing, complex and interdependent world.

(Adopted from National Education Commission Report -2003)

Aims of teaching Geography is to:

1. Act with an awareness of the concepts, characteristics and processes of the physical and human landscape.
2. Study the interrelationships, their patterns and processes in nature and society from a spatial and temporal perspective.
3. Adapt oneself to use geographical techniques to collect, analyze, interpret and present data and information.
4. Comprehend the diversity of the world; adapt oneself to live harmoniously with the environment as well as with one another.
5. Inculcate positive attitudes supportive of conserving and sustaining the physical and human landscape.
6. Foster special survival skills that help to overcome challenging life situations.
7. Develop skills needed for active participation in the world of work.

Competencies	Competency Level	Subject Content	Learning Outcomes	No. of Periods
Reviews basic concepts and methodologies helpful for an understanding of the physical and human landscape	10.1.1 Describes the Earth System	<p>10.1.1 Composition of the Earth system</p> <ul style="list-style-type: none"> Lithosphere <ul style="list-style-type: none"> – composition, structure Atmosphere <ul style="list-style-type: none"> – composition, structure Hydrosphere <ul style="list-style-type: none"> – distribution Biosphere <ul style="list-style-type: none"> – its limits <p>Note: Humans and their activities are embedded in the earth system. This will be studied later in the context of human geography.</p> <p>10.1.2 Structure of the Earth</p> <ul style="list-style-type: none"> Crust and the location of major tectonic plates The Mantle Core 	<p>Names the four major divisions of the Earth System according to its composition.</p> <p>Describes the structure of the Lithosphere with the aid of a diagram.</p> <p>Explains the basic rock composition of the Lithosphere.</p> <p>Presents facts about the manner in which the Lithosphere helps man.</p> <p>Introduces the human activities which make unfavorable impacts on the Lithosphere.</p> <p>Interprets the meaning of the Atmosphere.</p> <p>Classifies the atmosphere according to types of gases and volume.</p> <p>Names the 4 major layers of the atmosphere in a diagram.</p> <p>Explains the special characteristics of each of the layers in the atmosphere structure.</p> <p>Describes the uses of the atmosphere to man and other living beings.</p> <p>Discloses the unfavorable and harmful human activities which direct a threat for the existence of the Atmosphere.</p> <p>Shows the nature and various forms of occurrence of water on the earth's surface.</p> <p>Describes the global distribution of water with the aid of a diagram.</p> <p>Presents facts related to the importance of the Hydrosphere for human activities.</p>	12

Competencies	Competency Level	Subject Content	Learning Outcomes	No. of Periods
			<p>States that the process of exchange of water in the Hydrosphere to the Lithosphere, Atmosphere and Biosphere is known as the Water Cycle.</p> <p>Describes the human activities that impose a threat to the existence of the Hydrosphere.</p> <p>Explains the meaning of Biosphere.</p> <p>Describes the limits of the distribution of the Biosphere.</p> <p>Explains that there is an interaction among the Biosphere and the Lithosphere, Atmosphere and Hydrosphere which are the other constituents in the composition of the Earth.</p> <p>States that the structure of the earth can be divided into 3 namely the crust, mantle and core according to the composition of the rocks and variations in density in the interior of the Earth.</p> <p>Explains that the mantle is further divided into two parts called the upper mantle and the lower mantle according to the composition of the rocks in the mantle.</p> <p>States that the core of the Earth is again divided into two parts known as interior core and outer core.</p> <p>Explains that the zone including the earth's crust and the upper mantle is called the Lithosphere and that it consists of 7 large tectonic plates and a few smaller tectonic plates.</p>	

Competencies	Competency Level	Subject Content	Learning Outcomes	No. of Periods
			<p>Explains that those tectonic plates exist in a slow movement as a result of the impact of convectional currents operating in the Earth's mantle.</p> <p>Describes that as the continental crust has been formed with the accumulation of silicon (Si) and aluminum (Al) the composition of rocks in the crust is called sial.</p> <p>Describes that as the oceanic crust is composed mainly of a combination of silicon (Si) and magnesium (Mg) the composition of its rocks is known as sima.</p> <p>Explains that the outer core is a zone consisting of fluids which the interior core consists of more solid substances.</p>	

Competencies	Competency Level	Subject Content	Learning Outcomes	No. of Periods
<p>Acts with an awareness of the components, characteristics and processes of the physical and human landscape</p>	<p>10.2.1 Describes the major physical characteristics of the Earth</p>	<p>10.2.1 Major physical characteristics</p> <p>Relief - distribution and main Characteristics Continents and Islands Oceans and Seas Mountain ranges, plateaus, plains, rivers and lakes</p> <p>*Mark and name the major physical features of the Earth in an outline map of the world</p> <p>Climatic types - distribution and main characteristics - Tropics - Temperate - Cold</p> <p>Mark and name major climatic types and their distribution in an outline map of the world</p>	<p>Explains the major physical landscape on the crust of the earth.</p> <p>Names the major physical characteristics of the physical landscape and explains them briefly.</p> <p>Identifies continents and oceans as large scale physical characteristics and names them.</p> <p>Names the major mountain ranges, plateaus, plains, rivers, lakes and seas as medium scale physical characteristics and names them briefly.</p> <p>Describes the major climatic types on the earth and their sub-types.</p> <p>Present the major climatic types on a map of the world.</p> <p>Shows the distribution of other major physical characteristics making use of world maps.</p>	<p>10</p>

Competencies	Competency Level	Subject Content	Learning Outcomes	No. of Periods
Acts with an awareness of the manner in which the physical and human interaction impacts on the geographical environment	10.3.1 Explains the distribution and special characteristics of the major agricultural land use types of the world	10.3.1 Major agricultural land use type (distribution and special characteristics) Grain cultivation - Rice, Wheat Plantation agriculture Tea, rubber - Livestock farming - Commercial dairy farming Mark and name the distribution of each type of agricultural land use in an outline map of the world	Marks the distribution of paddy and wheat in an outline map of the world and presents it to the class. Explains the special characteristics of paddy and wheat cultivation. Explains the importance of commercial dairy farming and its special characteristics. Marks and names in a map of the world the distribution of commercial dairy farming areas. Explains the main features of plantation agriculture. Describes the special characteristics of tea and rubber cultivation in the world. Explains the distribution of tea and rubber with the help of world map.	10
	10.4.1 Describes agriculture, livestock farming and fishing industry in Sri Lanka and review their importance in the economy	10.4.1 Sri Lanka's agriculture and fishing: Distribution, problems and trends Agricultural crops Rice cultivation Tea, coconut, rubber, minor export crops Vegetables and fruits Livestock farming Dairy farming	Names the main agricultural crops in Sri Lanka. Marks and names on an outline map of Sri Lanka the distribution of the main agricultural crops. Explains the problems associated with the major agricultural crops Describes the trends in the major agricultural crops. Marks and names on an outline map of Sri Lanka the distribution of dairy farming centers and the centers of fishing industry in Sri Lanka.	16

Competencies	Competency Level	Subject Content	Learning Outcomes	No. of Periods
		<p>Fishing industry - Freshwater, marine and brackish</p> <p>*Mark and name the distribution of agriculture and fishing in an outline map of Sri Lanka</p> <p>10.4.2 The importance of agriculture and fishing industry in the economy of Sri Lanka - national income, labor and contribution to the export trade.</p>	<p>Presents the problems associated with the fishing industry and dairy farming. Describes the new trends in the dairy farming and fishing industry.</p> <p>Explains the significance of agriculture in the economy of Sri Lanka. Describes the importance of the fishing industry in the economy of Sri Lanka. Shows the significance of livestock farming in the economy of Sri Lanka.</p>	
<p>Acts with an awareness of the manner in which the physical and human interaction impacts on the geographical environment</p>	<p>10.5.1 Explains the distribution, characteristics and problems of the manufacturing industries of the world</p>	<p>10.5.1 Distribution, characteristics and trends of a few manufacturing industries of the world Iron and Steel industry Motor vehicle industry Ship building industry Electronics industry Cotton textiles industry</p> <p>*Mark and name the distribution of the above manufacturing industries in an outline map of the world</p> <p>10.5.2 Problems common to the manufacturing industries of the world.</p>	<p>Defines the manufacturing industries. Marks the distribution of a few manufacturing industries on an outline map of the world. Explains the characteristics of manufacturing industries. Explains the trends in manufacturing industries. Discusses common problems related to manufacturing industries.</p>	<p>14</p>

Competencies	Competency Level	Subject Content	Learning Outcomes	No. of Periods
<p>Acts with an awareness of the manner in which the physical and human interaction impacts on the geographical environment</p>	<p>10.6.1 Reviews the distribution, problems and trends of the industries in Sri Lanka</p>	<p>10.6.1 Distribution, problems and trends in a few selected industries in Sri Lanka</p> <p style="padding-left: 40px;">Graphite industry Kaolin related industry Electronics industry Petro-chemical industry Motor vehicle assembly and boat manufacturing Food and beverages industry Cottage industries Tourism industry</p> <p>*From the above list mark and name in an outline map of Sri Lanka the industries whose distribution can be mapped</p> <p>10.6.2 The importance of industries in the economy of Sri Lanka (national income, labour and foreigntaxchange earnings)</p>	<p>Marks and names on an outline map of the world location of industries whose distribution can be mapped.</p> <p>Presents the problems that crop up in particular industries.</p> <p>Introduces suggestions in minimizing the problems faced when the factories are running.</p> <p>Gives ideas about the new trends associated with each of the industries.</p> <p>Explains the present status of selected industries.</p> <p>Presents facts to explain the significance of industries in the economy of Sri Lanka.</p>	<p>16</p>

Competencies	Competency Level	Subject Content	Learning Outcomes	No. of Periods
<p>Uses geographical techniques to collect, analyze, interpret and present data and information</p>	<p>10.7.1 Explains different type of maps and identifies the peripheral features depicted in the 1:50,000 topographic maps of Sri Lanka</p>	<p>10.7.1 introduction to maps 10.7.2 types of maps and their uses Thematic maps Topographic maps 10.7.3 identifying peripheral information depicted in 1:50,000 Topographic maps of Sri Lanka Location – latitudes, longitudes, metric coordinates Direction – magnetic north, grid north, true north Scale - linear, representational fraction, distance and area with reference to scale Legend - identifying standard symbols and colours Other peripheral information – sheet number, title, year of printing, adjoining sheets</p>	<p>Defines a map Classifies the difference between Thematic maps and 1 : 50 000 Topographic maps Explains the methodology based in dividing the 1: 50 000 Topographic map of Sri Lanka into 92 divisions. Names the elementary characteristics of the 1: 50 000 Topographic maps of Sri Lanka. Explains and defines the peripheral information defines the peripheral information depicted in the 1 : 50 000 Topographic maps Explains the interrelationship between the physical and cultural features depicted in the 1 : 50 000 Topographic maps</p>	<p>12</p>

Instructions for the Teaching-Learning Process

10.1 The Nature of the Earth System

- Competency** : Reviews basic concepts and methodologies helpful for an understanding of the physical and human landscape.
- Competency Level** : 10.1.1 Describes the Earth System
- Periods** : 12
- Learning outcomes** :
- Names the four major divisions of the Earth System according to its composition.
 - Describes the structure of the Lithosphere with the aid of a diagram.
 - Explains the basic rock composition of the Lithosphere.
 - Presents facts about the manner in which the Lithosphere helps man.
 - Introduces the human activities which make unfavorable impacts on the Lithosphere.
 - Interprets the meaning of the Atmosphere.
 - Classifies the composition of the atmosphere according to the types of gases and volume.
 - Names the 4 major layers of the atmosphere in a diagram.
 - Explains the special characteristics of each of the layers in the atmospheric structure.
 - Describes the uses of the atmosphere to man and other living beings.
 - Discloses the unfavorable and harmful human activities which direct a threat for the existence of the Atmosphere.
 - Shows the nature and various forms of occurrence of water on the earths' surface.
 - Describes the global distribution of water with the aid of a diagram.
 - Presents facts related to the importance of the Hydrosphere for human activities.

- States that the process of exchange of water in the Hydrosphere to the Lithosphere, Atmosphere and Biosphere is known as the Water Cycle.
- Describes the human activities that impose a threat to the existence of the Hydrosphere.
- Explains the meaning of Biosphere.
- Describes the limits of the distribution of the Biosphere.
- Explains that there is an interaction among the Biosphere, the Lithosphere, Atmosphere and Hydrosphere which are the other constituents in the composition of the Earth.

Instructions in Planning the Lesson :

The environment where we live has been formed through the interrelationship of the composition and the various parts of the structure of the earth system.

Hence in a geographical study, a basic understanding about the structure and composition of the earth system is of utmost importance.

The earth system consists of four basic sub-systems called the lithosphere, atmosphere, hydrosphere and the biosphere. The structure of the earth consists of three basic parts called the crust, mantle and the core.

By teaching this unit it is expected to impart to the students basic knowledge regarding the nature of the structure and composition of the earth system. Accordingly, it is important that when planning the teaching process, in order to reach the particular competency level "Describe the nature of the earth system", the subject matter prescribed for this unit has to be distributed within the 12 periods recommended.

Some of the subject matter that will be useful for you when planning lessons is presented here in simple form under subject content. In addition to this it is important to apply your knowledge and use other sources too.

Lesson plans have to be prepared to cover the entire unit as appropriate. It is the responsibility of the teacher to facilitate the students to reach the expected competency level of the lesson unit by using appropriate teaching learning methodologies somehow or other.

The composition of the earth system consists of four major parts.

- Lithosphere - structure, composition and uses
- Atmosphere - structure, composition and uses
- Hydrosphere - structure, composition, water cycle and its stages and the occurrence of underground water sources.
- Biosphere - structure, composition and uses

Different stages in the water cycle

- Precipitation - rainfall, snowfall
- Run-off - Surface flow
- Infiltration - Seeping into the ground (underground water and soil water)
- Collection - Rivers, streams and ponds, lakes, seas and oceans
- Evaporation - Water is added to the atmosphere from surface water sources
- Evaporation/evapotranspiration – Water vapour from plants escapes into the atmosphere
- Condensation - Accumulation of water vapour to form clouds / formation of water droplets

Structure of the Earth

- Crust - location of tectonic plates
- Mantle - upper mantle, lower mantle
- Core - outer core, inner core

The Location of layers in the earth's interior structure

- Crust
- Upper mantle
- Lower mantle
- Outer core
- Inner core

The Location of Tectonic Plates in the earth

The major tectonic plates

1. Pacific plate
2. North American plate
3. South American plate
4. African plate
5. Eurasian plate
6. Indo-Australian plate
7. Antarctic plate

Minor tectonic plates

- Caribbean plate
- Cocos plate
- Nazca plate
- Philippine plate
- Scotia plate
- Arabian plate

The fact that the earth system consists of four systems is mentioned above. Those four sub-systems have to be introduced. It is expected that the teacher should plan an activity that will enable the students to understand the Lithosphere which is one of the above systems. Divide the class into 3 groups and get them to prepare 3 posters to be introduced in the class. While introducing the three posters it is important to build up the lesson by telling the students to raise the main points in the subject matter revealed in the posters. In the end it is very important to assess the students and allow the students to make notes on the important facts gathered. It is suitable to spend 2 periods in this regard. It is expected to prepare a creative activity in order to identify the major divisions in the earth structure, the nature of the earths' crust on the surface which is the most significant for us and also to identify the location of the tectonic plates. This activity can be made use of as a teaching method in the classroom as well as an evaluation method. This could also be planned as an individual activity which could be completed within 2 periods. The activity completed by the students should be assessed on certain criteria and marks could be given for it.

Sources : David Wough
Geography an Integrated Approach
Mas Nelson and Sons Ltd. U.K. 1995

Qualitative Inputs

Make use of learning materials, resource books, maps, reports and articles as relevant to the lesson planed.

Assessment and Evaluation

Give marks based on criteria that will evaluate learning outcomes, competencies as relevant to the lesson planed.

10.2 The Major Physical Characteristics of the Earth

Competency : Acts with an awareness of the components, characteristics and processes of the physical and human landscape.

Competency Level : 10.2.1 Describes the major physical characteristics of the earth.

Periods : 10

Learning outcomes :

Explains the major physical landscape on the crust of the earth.
Names the major physical characteristics of the physical landscape and explains them briefly.
Identifies continents and oceans as large scale physical characteristics and names them.
Names the major mountain ranges, plateaus, plains, rivers, lakes and seas as medium scale physical characteristics and names them briefly.
Describes the major climatic types on the earth and their sub-types.
Presents the major climatic types on a map of the world.
Shows the distribution of other major physical characteristics making use of world maps.

Instructions in Planning the Lesson :

In a study of the physical landscape on the surface of the earth, it is very essential to have a basic understanding of the large and medium scale physical characteristics. This includes large scale physical characteristics such as continents and oceans as well as medium scale physical characteristics such as mountain ranges, plateaus, plains and lakes. Identifying these large and medium scale physical characteristics on the surface of the earth and imparting a basic understanding about their nature and their distribution is the aim of teaching this unit.

Furthermore, the other learning outcomes of this unit are as follows:- Identifying the basic climatic types of the world; promoting map marking skills in the students through the effort in identifying the distribution of the major physical features.

Continents and Islands

continents

islands

Ocean and Seas

Oceans

Seas

Inland seas

A few seas connected to oceans

Mountain ranges, Plateaus and Plains

Mountain ranges

A few major mountain ranges in the world (this should represent every continent)

Plateaus

A few famous plateaus in the world (Mongolian, Tibet, Deccan, Pamir, Arabian, Iranian, Anatolian, Iberian, Laurentian, Brazilian)

Plains

A few famous plains in the world (The Great plains of North America, North European plain, Great Siberian plain, Nullabar plain, Indo-Gangetic plain, Manchurian plain)

Rivers and Lakes

- Rivers (so as to represent all the continents)
- Lakes (a few large lakes in the world)

Climatic Zones: Distribution and the basic characteristics

The world's first climatic classification was presented in 384 B.C. by a Greek national called Aristotle. Here the criteria used in this classification was "temperature". Geographically the limits of the climatic plane was determined by latitudes. Accordingly, 3 main climatic zones were identified and presented. They are also known as major climatic types. This is also considered as the Greek climatic classification.

1. Tropical climatic zone
2. Temperate climatic zone
3. Cold climatic zone

It is expected to plan this lesson as an Activity. The aim of this activity is to identify a few major physical characteristics and their distribution with the help of a world map. It is appropriate to mark and name on a map of the world, the location of all the oceans and continents which are the major physical characteristics and also the location of some selected islands and seas.

The relevant physical characteristics should be drawn using suitable colours. These features have to be creatively marked and named and presented to the class as a display map. This may be planned as a group assignment. It will be more practical if this is considered as an identifying activity where the students identify in a competitive manner the physical characteristics marked and named in a world map.

Qualitative inputs

Prepare maps, information and other source materials and articles as relevant to the lesson you are planning.

Assessment and Evaluation

Prepare your assessment and evaluation criteria relevant to the lesson you plan and award marks.

10.3 The Major Agricultural Land Use types of the world

Competency : Acts with an awareness of the manner in which the physical and human interaction impacts on the geographical environment.

Competency Level : 10.3.1 Explains the distribution and special characteristics of the major agricultural land use types of the world.

Periods : 10

Learning outcomes :

Names the major agricultural land use types of the world.

Marks the distribution of paddy and wheat in an outline map of the world and presents it to the class.

Explains the special characteristics of paddy and wheat cultivation.

Explains the importance of commercial dairy farming and its special characteristics.

Marks and names in a map of the world the distribution of commercial dairy farming areas.

Explains the main features of plantation agriculture.

Describes the special characteristics of tea and rubber cultivation in the world.

Explains the distribution of tea and rubber with the help of world maps.

Instructions in Planning the Lesson:

Diverse human activities are closely related to land. As such, making use of the land for diverse activities is called land use.

Agricultural land use is making use of land specially for agricultural purposes.

Utilization of land in diverse forms for agricultural purposes is done on a large scale in the world. It is also a form of livelihood for the majority of people. Hence agricultural land use can be shown as the most significant economic activity in the world.

When viewed inter-regionally, its special characteristic is the diversity in agricultural land use. It is seen that out of the factors that have caused this diversity in agricultural land use, physical factors, human cultural factors, historical growth of agricultural varieties, changes and improvements in technology with the passing of time, increased demand as a result of expansion of production are the foremost factors.

Another characteristic of agricultural land use is that it does not reflect any orientation towards one single economic aspect. Agriculture is entwined with the other economic activities such as industries, trade and transport in that country.

Early agriculture was based on the idea of home consumption but later it expanded internationally to the extent of achieving commercial purposes reflecting a complexity. In the same way it is seen that agriculture is carried on in small farms on a small scale ranging to a commercial basis on large scale extensive farm lands.

In agricultural land use two aspects are important. They are cultivation of crops and animal husbandry. They are important as a source of food supply as well as a means of providing agricultural raw materials.

The objectives of this lesson unit are to identify grain cultivation, animal husbandry and plantation agriculture which are the important forms of land use; to identify the important areas of distribution of these types; to identify these areas in outline maps of the world and mark them; and to identify the special characteristics seen in such land use types.

Cultivation of grains on large farms with a view to trade is called "Commercial Grain Cultivation". Under this form of agriculture corn, barley, rye and oats are grown but the most important grain is "wheat".

Commercial grain cultivation is distributed in grasslands which come under the temperate climatic zone extending in mid-latitude regions of the world.

Wheat is the grain variety which is foremost in international grain trade. Developed industrial countries provide a good market for wheat.

Paddy cultivation specially based in the wetlands of Asia is one of the oldest types of agriculture in the world. Though the cultivation of paddy comes under intensive subsistence agriculture based on home consumption it has entered international trade on a commercial basis. Paddy cultivation which is distributed in the most densely populated areas of the world is also an economic activity where the majority of world population is employed.

Paddy Cultivation

Paddy cultivation is the main economic activity carried out by nearly 1/3 of the world population. The major part of the paddy lands of the world are located in the monsoon climatic regions of the world. Paddy cultivation is distributed in large flood plains with alluvial soils

especially associated with river valleys in the wet lowlands outside Asia. (For example Nile Delta in Africa, Murray Darling valley in Australia)

Distribution (Asia)

The islands and countries associated with it

Other regions outside Asia

Wheat Cultivation

Wheat is cultivated in extensive farms on a commercial basis in the region in the middle-latitude zone. Wheat is the grain which is mostly connected to world trade.

Not only wheat, in modern times paddy too has gained in international trade by increasing production using innovation and modern technology.

There are common factors which are conducive for growth for both paddy and wheat as well as special factors required for each of these grains. Plan an activity to identify the special factors (features) that are conducive for growth.

Distribution

Common factors that influence the cultivation of paddy and wheat

Special factors of paddy cultivation

Special factors of wheat cultivation

Animal Husbandry or Livestock farming

Animal husbandry is a form of land use. Rearing of animals such as cattle, sheep, goats on a commercial scale for subsistence needs and supply of industrial raw materials comes under animal husbandry.

There are diverse variations in animal rearing. The objective of this unit is to study the dairy farming land use pattern.

Commercial dairy farming is the rearing of cattle to obtain milk. Liquid milk, milk powder, butter, cheese, yoghurt, ghee and pasteurized milk are the products associated with milk. Though dairy farming is distributed in many countries of the world it is carried out on a commercial scale in the temperate grasslands.

Distribution of dairy farming

In the modern world, among the human activities, animal husbandry is distributed on a commercial scale worldwide. Commercial dairy farming is successfully carried out specially under most of the climatic conditions. In the past, rearing of dairy cattle was carried out within the consumption areas since milk being the main marketing commodity under dairy farming goes

bad quickly. But in the present day commercial dairy farming is successfully carried out away from the market areas since there are storage facilities with refrigeration and transport. In the present day in countries outside Europe problems regarding marketing of milk and milk products have cropped up as a result of the increased production of milk in the European countries and marketing them under protected trade policies.

distribution

special characteristics

Make use of 2 periods to mark the distribution maps

Direct the students to practice identifying and naming the areas / countries where dairy farming is carried out. Instruct them to use world maps in Atlases on the previous day of the lesson before discussing the distribution of dairy farming in the class the following day.

Plantation agriculture

Plantation agriculture is distributed in the tropical and sub tropical regions. The origin of plantation agriculture goes as far back as the colonial administration times.

Plantation agriculture is organized as large scale estates where the physical environment is conducive for such crops. The products of plantation agriculture are oriented towards exports.

Growing of crops such as tea, rubber, coconut, coffee, cocoa, cotton and cane sugar come under plantation agriculture. The objective of this unit are to study the areas where tea and rubber are grown in the world and the special characteristics of plantations.

Planting of tea

areas where tea is distributed – countries

special characteristics

Planting of rubber

areas of distribution

special characteristics

Qualitative Inputs

Make use of maps, aids, articles, video disc and other source materials relevant to the lesson planned.

Assessment and Evaluation

Develop criteria to evaluate learning outcomes / competencies relevant to the lesson planned and award marks.

10.4 Agriculture in Sri Lanka

Competency	:	Acts with an awareness of the manner in which the physical and human interaction impacts on the geographical environment.
Competency Level	:	10.4.1 Describes agriculture, livestock farming and fishing industry in Sri Lanka and reviews their importance in the economy.
Periods	:	16

Learning outcomes

Names the main agricultural crops in Sri Lanka.

Marks and names on an outline map of Sri Lanka the distribution of the main agricultural crops.

Explains the problems associated with the major agricultural crops/

Describes the trends in the major agricultural crops.

Marks and names on an outline map of Sri Lanka the distribution of dairy farming centres and the centres of fishing industry in Sri Lanka.

Presents the problems associated with the fishing industry and dairy farming.

Describes the new trends in the dairy farming and fishing industry.

Explains the significance of agriculture in the economy of Sri Lanka.

Describes the importance of the fishing industry in the economy of Sri Lanka.

Shows the significance of livestock farming in the economy of Sri Lanka.

Instructions in Planning the Lesson:

Sri Lanka has been famous as an agricultural country for a period of more than 2500 years due to the favourable influence of factors such as climate, relief, soil and historical and cultural factors. Since Sri Lanka was self-sufficient especially in rice our country had been honoured with the name "The Granary of the East". In the agriculture sector in this country special emphasis was given to paddy cultivation. This is because rice was the staple food of the people in this country.

Paddy cultivation is the backbone of agricultural and the age-old culture of Sri Lanka. From the time Sri Lanka came under foreign powers as a colony the emphasis and patronage bestowed to paddy cultivation diminished gradually.

The attention of the foreign rulers was drawn to crops such as tea, rubber and cinnamon. As a result, the priority given to paddy cultivation which is a subsistence agricultural system shifted to other crops. During the colonial age, subsistence agriculture as well as commercial agriculture became popular in this country. At present about 1.8 million families are engaged in cultivation and 31% are dependent on agriculture for employment. In this country agricultural lands consists mainly of paddy and about 780 000 hectares are under paddy cultivation. The land utilized under plantation agriculture consists of 772 000 hectares. Tea, rubber and coconut are considered as plantation crops while coffee, cocoa, cinnamon, pepper, cloves and other spices are grown in small quantities. With the increase in population there is a trend of using the land given under agricultural purposes for other needs such as establishment of settlements and factories. Growing of potatoes, vegetables and onions is mostly done by small farmers while fruits are grown mostly as garden crops. A few crops like cajunuts (cashew) and chilies are grown on a semi – commercial scale. Garden lands are a system of cultivation involved in growing crops of traditional importance.

At present, growing of vegetables and fruits in home gardens is encouraged. In Sri Lanka a great variety of vegetables are seen. Both dry zone and temperate vegetables are distributed throughout the country.

Among agricultural activities livestock farming is also a major economic activity in Sri Lanka. In many regions dairy farming is distributed under stock rearing. But this is not significant from a global point of view. From the distant past cattle have been utilized in paddy cultivation purposes as well as in milk production. However, the government seems to draw attention on dairy farming. This will save the foreign exchange spent on importing milk products.

The fishing industry is also important among agricultural activities. The fishing industry can be recognized as a very important economic activity as it provides the main source of animal proteins, brings in foreign exchange and provides employment opportunities.

In studying this chapter it is expected to carry out the teaching learning process by giving emphasis on the significance of agricultural activities in the economic process of the country. The main emphasis of this chapter is on agriculture, fishing industry and livestock farming in Sri Lanka.

The distribution of agriculture and fishing industry of Sri Lanka

The National Atlas of Sri Lanka 20

1. Land use of Sri Lanka P. 123

2. Regions where tea and rubber are grown in Sri Lanka P. 127

3. Production of coconut and spices in Sri Lanka P. 131
4. Government Institutions pertaining to animal husbandry P. 145
5. Marine water fish production (fishing harbour facilities) P. 147
6. Fresh water fisheries aquatic culture P. 149
7. Paddy lands and production of paddy in Sri Lanka 2001/2002 – Yala/Maha P. 125

Problems associated with agriculture in Sri Lanka

High cost of production
 Scarcity of land
 Problems in marketing
 Problems in storage and transport
 Scarcity of labour
 Natural hazards
 Indebtedness of farmer
 Damage from insects and pestilence
 Problems in management
 Health problems related to insecticide and pesticide
 Problems due to application of chemicals
 Problems in applying technology
 Foreign influence

Trends

Diversification of products
 Increase in local consumption
 Intercropping
 Application of modern technologies
 Introduction of improved methods and seeds
 Government patronage
 Earning foreign exchange
 Private sector participation

A few ideas to plan activities for this unit are given below.

Group activities

You should be able to organize an activity suitable to examine the distribution of major crops in Sri Lanka. Plan to get the students to mark the relevant crop distribution in outline maps of Sri

Lanka as a group or individual activity. Plan it as an activity which will give enjoyment to the students.

Preparation of a wall newspaper

It is appropriate to prepare an active lesson plan on the problems and trends in the agriculture of Sri Lanka. It is expected to direct the students to prepare this wall newspaper while actively studying the problems and trends related to paddy, tea, rubber and coconut. Any other method of approaching the lesson could be used. The activity for which data is collected may be carried out as an individual or a group activity depending on the number of students.

It is important to instruct the students to prepare the wall newspaper in a creative manner. 2 periods may be used for this activity.

Individual activities

Here the study is on the theme of the fishing industry and dairy farming industry of Sri Lanka, their distribution, problems and trends. Plan this as a map marking activity as well a mode of study on the problems and trends. It is expected to mark the fishing harbours, research centres and region where dairy cattle are reared. This activity may be organized as an individual or a group activity. It is expected to provide a teaching learning experience which will enable the student to participate actively in the lesson. Make use of 2 periods for this lesson.

Individual or group activities

This activity involves a study of the contribution of the agricultural sector in the economy of Sri Lanka. Plan this as an individual or group activity where the students could be directed to analyze data through the study of graphs given. Use 2 periods.

Qualitative inputs :

Make use of maps, diagrams, DVD or any other information in relation to the lesson planned.

Assessment and evaluation criteria:

Prepare assessment and evaluation criteria to the lesson you plan and award marks.

10.5 Manufacturing Industries of the world

Competency : Acts with an awareness of the manner in which the physical and human interaction impacts on the geographical environment.

Competency Level : 10.5.1 Explains the distribution, characteristics and problems of the manufacturing industries of the world.

Periods : 14

Learning outcomes : Defines the manufacturing industries.

Marks the distribution of a few manufacturing industries on an outline map of the world.

Explains the characteristics of manufacturing industries.

Explains the trends in manufacturing industries.

Discusses common problems related to manufacturing industries.

Instructions in planning the lesson:

Industry is the process of converting a raw material into a finished product. In this process one or more raw materials are utilized to give a value and a useful product is made. Manufacturing process means the production of a commodity using the required raw materials and providing the maximum utility so that a value is attributed to it.

Manufacturing industries means the process of producing finished goods (end products) to fulfill human needs by utilizing the technical knowledge of man while manipulating natural resources with the other production factors.

Within the production process there is a complete process in obtaining finished or semi-finished goods including planning, preparation and building up.

As a result of the Industrial Revolution most of the productive processes that prevailed as cottage industries throughout the world were converted to production inside factories. As a result the capacity and quality of goods were improved due to use of machinery in the production process. Energy sources used in the manufacturing processes are coal, petroleum, natural gas and electricity though steam power was used in the early stages.

Today, iron and steel, machinery, cotton textiles, food processing and tinning, motor vehicles, building of ships, trains, aeroplanes are important as manufacturing industries.

In modern times, this field of manufacturing industries are developing further and shows a development trend of producing products from semi-finished goods to high-tech products.

The objective of this unit is to give an understanding about the distribution, characteristics, trends and problems of a few selected industries of the world.

Iron and steel industry

Distribution

Factors of location

Trends

production trends

marketing trends

consumption trends

Motor vehicle industry

Distribution

Factors of location

Characteristics

Trends

Ship building industry

Distribution

Factors of location

Technological knowledge

Trends

Electronics industry

Distribution

Characteristics

Factors of location

Trends

Cotton textiles industry

Distribution

Factors of location

Trends

Common problems related to the industry

According to the number of students, plan suitable activities to explain the distribution, characteristics, new trends and problems of the manufacturing industries of the world. Direct the students to collect information about the progress reached by manufacturing industries in each of the countries (textbook or any other books, statistics, about production or using the internet)

Qualitative Inputs:

Provide according to the lesson plan prepared.

Assessment and evaluation criteria:

According to the teaching – learning method planned prepare the criteria based on it to evaluate the learning outcomes and competencies and award marks.

10.6 Industries of Sri Lanka

Competency	:	Acts with an awareness of the manner in which the physical and human interaction impacts on the geographical environment.
Competency Level	:	10.6.1 Reviews the labour problems and trends in the industries of Sri Lanka.
Periods	:	16

Learning outcomes:

Marks and names on an outline map of the world location of industries whose distribution can be mapped.

Presents the problems that crop up in particular industries.

Introduces suggestions in minimizing the problems faced when the factories start working.

Gives ideas about the new trends associated with each of the industries.

Explains the present status of selected industries.

Presents facts to explain the significance of industries in the economy of Sri Lanka.

Periods: 16

Instructions in planning the lesson

From the distant past our country was famous as an agricultural country. When kings ruled the country Sri Lanka was known as "The Granary of the East". During the colonial period only the agricultural sector was developed with little emphasize on industries. But when the British period was coming to an end while the old traditional peasant industries remained in their old status, new industries such as printing, paper, chemicals and glass industries were established.

With the granting of independence a few large scale industries were established under foreign aid. A number of industries based on foreign investments came up under the Open Economic Policy in 1977. At present the contribution from the industrial sector in our country is at a higher level. The birth of Export Promotion Zones, Industrial Estates, Industrial Cities and Industrial Parks have facilitated this condition.

In the economy of Sri Lanka the industrial sector consists of four sub-sectors. They are mining and excavations, manufacturing industries, electricity and water and construction industries. Out of these the manufacturing industrial sector is given a dominant place.

In Sri Lanka, the manufacturing industries are expanding towards diverse sectors. Hence we find a number of industries crop up every year. It is expected to study about eight selected industries in this Grade. The reasons for this selection are as follows:

Deviation from the old traditional industries

Being rapidly developing industries

Being industries established for current needs

Being industries which introduce new products to the market based on the changing demand.

For this unit 10 periods are allocated. The objective of this unit is to study the distribution of a few selected industries in Sri Lanka, the problems, trends and the significance these industries in the economy.

It is seen that the distribution of some industries could be represented on maps while it is difficult to show the distribution of some others. Here it is sufficient to map out the distribution of tourist attraction, graphite and mining which could be shown by maps.

The Graphite industry

During the British period, a considerable income was derived by exporting graphite from the graphite mining industry. There are 3 types of natural graphite in Sri Lanka.

graphite without any definite shape

transparent graphite

mica or peeling graphite

Production

Distribution

Problems

Trends

Kaolin related industry

Production of ceramics has a long history. Kaolin, ball clay, feldspar, silicon and dolomite which are the required raw materials for the production of ceramics are available in Sri Lanka.

Production

Distribution

Problems

Trends

Electronics industry

These were established in recent times but are rapidly developing industries. This industry produces electronic instruments using new technology. Tools that help man in day to day life are produced under electronics industry.

Products

- Tools related to communication
- Consumer goods
- Diverse meters
- Watt hour meters

Repairing of instruments related to the field of electronics has widely developed. For instance repairing of television sets, mobile telephones and other electronic goods, computers and other production instruments.

- Distribution
- Problems
- Trends

Petro – Chemical industry

Diverse types of chemicals are produced using the residual substances obtained from refining of petroleum. These products come under this industry.

Since the location of this industry is based on raw materials, this raw material is available all the time because refining of petroleum is so regular in Sri Lanka.

- Products
- Distribution
- Problems
- Trends

Assembling Motor Vehicle of and Boat manufacturing

Motor vehicle assembling and fiber boat industry are industries that have developed in recent times in Sri Lanka. With the coming of the Open Economic policy, motor vehicles assembling industry developed and production of fiber boats began at the end of the last century.

- Products
- Distribution
- Problems
- Trends

Food and Beverages industry

The diverse food and beverages produced in our country come under this industry. About 10% of the local products are produced under this industry.

These products hold an important place in the economy as we derive a good income by exports.

- Products
- Distribution
- Problems

Trends

Cottage industry

Since these industries are small scale industries they can be housed in small cubicles or houses. Small hand machinery or simple machinery powered by electricity and human labour are abundantly used in these industries. These industries could be started with a small capital base. Specialized techniques are required for some cottage industries.

Products

Distribution

Problems

Trends

Tourist industry

Sri Lanka has become a centre for the world's tourist industry. This is because this is a country with plenty of tourist attraction centres. Hence it is possible to earn a lot of foreign exchange. The number of tourists who visited Sri Lanka in 2012 was about 1 005 605. It is targeted that by 2016 it will be about 2.5 million.

Production

Distribution

Tourist centres

The Sri Lanka Tourist Board has divided Sri Lanka into 7 tourist zones. They are Colombo City, Greater Colombo, Southern Coastline, Eastern Coastal Strip, Hill country, Ancient Old Cities, Northern Zone.

The Importance of Industries in the Economy of Sri Lanka

About 3 periods are sufficient for this lesson.

When we consider how the Gross National Product is distributed in the Sri Lankan economy, it is seen that the production in the industrial sector has surpassed the agricultural sector.

Plan an activity to identify the products, distribution, problems and trends in a few selected industries.

Select the Food and Beverages Industry to plan the activity. Plan the activity to identify the problems and recent trends related to this industry so as to get an understanding about them. Preparation of a display board to get to know the types of food produced in Sri Lanka and also collection of information from newspapers, information leaflets and text books in order to identify the problems and trends related to the industry are the objectives of this lesson.

The tourist industry of Sri Lanka is developing rapidly. Demand is increasing for diversified tourist services instead of the traditional Mass Tourism that prevailed up to the present day. Plan

an appropriate activity to identify tourist attractions in Sri Lanka and prepare programmes suitable for various tourist demands.

For instance plan the activity based on the topics below which include tourist attractions.

- Historical heritage – Anuradhapura, Sigiriya
- Wild animals - Yala, Wilpaththu, Kumana
- Scenic coast - Negombo, Hikkaduwa, Nilaweli
- Thrilling experiences
 - Mountain climbing – Bambarakanda, Ella
 - Forest tours – Samanala, Knuckles
 - Surfing – Kalpitiya, Arugam Bay
 - Diving – Unawatuna
- Bio diversity - Sinharaja, Namal Uyana
- Places of scenic beauty - Kandy, Nuwara Eliya
- Hindu Heritage - Jaffna, Trincomalee
- From Japan - Visiting historical Buddhist heritage
- From United Kingdom - Watching birds and wild animals
- From Canada - Sunbathing and enjoying scenic shores
- From France - Undergoing thrilling experiences
- From China - Visiting places of scenic beauty in the country
- From India - Visiting historical Hindu temples

Information and services to be included in the tourism plan is given below.

The tour should extend to 06 or more days

Provide opportunities to visit attractive places which are the most suitable for the objectives

Provide a concise description about the importance of selected places

Prepare a map to show the route and selected places

Qualitative inputs Wall maps of Sri Lanka
Atlas maps which show tourist attractions
Prepare qualitative inputs in relation to the prepared teaching learning activity

Assessment and Evaluation Criteria Draw out the criteria in relation to the proposed teaching learning activity to evaluate learning outcomes and competencies and award marks.

10.7 Study of Maps

Competency : Uses geographical techniques to collect, analyze, interpret and present data and information.

Competency Level 10.7.1 : Explains different types of maps and identifies the peripheral information (features) depicted in the 1 : 50 000 Topographic maps of Sri Lanka.

Periods : 12

Learning outcomes:

Defines a map

Classifies maps and brings out the use of maps.

Clarifies the difference between Thematic maps and 1 : 50 000 Topographic maps

Explains the methodology based in dividing the 1: 50 000 Topographic map of Sri Lanka into 92 divisions.

Names the elementary characteristics of the 1: 50 000 Topographic maps of Sri Lanka.

Explains and defines the peripheral information depicted in the 1 : 50 000 Topographic maps

Explains the interrelationship between the physical and cultural features depicted in the 1 : 50 000 Topographic maps

Instructions in Planning the Lesson:

Out of the techniques used in presenting geographical data and information, maps occupy the foremost place. If it is necessary to understand geographical information which is described in a lot of words, it has to be read from the beginning to the end. If this information is presented in a map it will be understood easily and quickly. Hence maps serve a significant role in Geography.

From the distant past maps were used. A Mesopotamian (Babylonian) who lived in about 2800 B.C. had drawn a map on a clay tablet to show the extent of his land. This map is considered as the most ancient map in the world. Map making of such origin has reached a very developed stage at present with the progress made in satellite technology and computer science.

Accordingly, Global Positioning System (G.P.S.) and Geographical Information System (G.I.S.) are utilized in mapping accurately various geographical information.

The student who studies Geography requires knowledge of the diverse information seen on the surface of the earth as well as other information as administrative boundaries, location of

latitudes and longitudes, air routes of the world, sea routes of the world distribution of cold and warm currents which are features not remarkably marked on the surface of the earth. In this regard, it is very essential that knowledge about mapping and utilization of maps has to be developed in the students. Hence the aim of this unit is to study what a map is; and the different types of maps and their uses; to instill knowledge and understanding about the basic characteristics including the location, direction, scale, legend and any other marginal information in 1: 50 0000 Topographical maps of Sri Lanka; and also to make them familiar with the conventional signs and use of colors.

For teaching this unit, 12 periods are allocated. Though it was felt that utilizing 3 periods for 10.1.1 and 10.7.2 parts of this unit and 9 periods for 10.7.3 part was sufficient, it is the task of the teacher to decide how to assign 12 periods to the particular parts of the unit according to the attainment level of the students in the class.

Introducing Maps

Reviewing a few definitions presented about maps and also with the help of a few maps explains what a map is.

Through that discussion try to conclude that "A map is a presentation of the physical and cultural features on the land according to a scale using various techniques" or else describe "a map is a means of showing the spatial distribution and location of diverse geographical phenomena seen on the earth".

Give a concise history of Cartography.

Explain the need of preparing maps according to a scale.

The two dimensional and three dimensional natures of maps.

Recent development in Cartography - At present there is the possibility of preparing accurate maps with the help of satellite technology and computer technology - as Global Positioning System (G.P.S.) and Geographical Information System (G.I.S.).

Types of Maps and their uses

Thematic maps

Showing all the geographical information in one map is not only difficult but also is not possible to understand. Hence one map has to be prepared to depict one special item or one aspect. Then it is possible to understand it clearly and easily.

Describe that "Thematic maps are prepared to show or depict some special aspect or fact.

Explain what a "theme" is

Examples of thematic maps are:

Map showing the distribution of Tea in Sri Lanka and the map showing

the Physical Features of Sri Lanka

1 : 50 000 Topographical maps

The difference between 1 : 50 000 map and a thematic map

Explain that a thematic map is prepared to show only one special aspect while Topographical maps are prepared to depict all the physical and cultural characteristics on land.

In the Topographical maps the nature of the land is specially depicted by drawing contour lines.

Cultural features are shown by using diverse conventional signs and colours.

Explain that 1: 50 000 Topographical map is prepared on a medium scale.

The 1: 50 000 maps in Sri Lanka is 864 centimeters in length and 448 centimeters in width. As it is cumbersome to use such a map it is divided into 92 sheets (parts) and printed separately. In one such division, the land area includes an area of 40 kilometers in length and 25 kilometers in width. It is equivalent to a land area of 1000 square kilometers.

The uses of 1 : 50 000 Topographical maps

Identifying the marginal information of a map from a 1: 50 000 Topographical map of Sri Lanka.

Introducing the plan of the frame in a 1 : 50 0000 map

Location

Latitudinal and longitudinal location

Metric coordinates

Explain concisely the techniques used in preparing the grid when preparing the 1 : 50 000 Topographic map. (It is good if the Hanguranketa 1 : 50 000 map could be used). This is because it is in that map the mid-point Pidurutalagala is situated.

Direction

Explain how the orientation of a map is important in the study of maps. Direction is shown in 3 ways in the 1 : 50 000 Topographical maps.

True north

Magnetic north

Grid north

Scale

The scale is very important in interpretation of maps.

- The methods of indicating scale in 1 : 50 000 Topographical maps

- Linear scale
- Representative fraction (R.F.)
- Distance
- Area

Legend

Other marginal information

Plan an activity to emphasize the places of positions in the frame in the 1 : 50 000 maps where various marginal information is mentioned while introducing each of the places in the map frame for instance the inner border, outer margin etc.

Plan an activity to give an understanding about each of the places or positions in the map frame where the marginal information is indicated in the 1: 50 000 Topographical map and also to emphasize the importance of using such marginal information in the study and interpretation of these maps.

Organize an individual activity to develop the knowledge of the students about using scale, direction and the legend in 1: 50 000 maps; to improve the skills in calculating distance and area; to develop the understanding about the use of conventional colours and symbols; and also to promote the skills in the use of instruments when dealing with 1: 50 000 Topographic maps.

Qualitative Inputs: Prepare them in relation to the activity planned.

Assessment and Evaluation Criteria: Prepare criteria in relation the activity planned.

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