Geography

New Normal
Curriculum Framework
Classes: PP-XII

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Geography Curriculum Framework

Classes: PP – XII

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Contents

Foreword

The Geography Curriculum Framework 2017 is an outcome of the Education Blueprint 2014-2024 and the National School Curriculum Conference 2016 that has been reviewed and revised as per the lessons learnt from COVID 19 pandemic to suit the change in time and situation. It is based on the prioritised curriculum that is meant to serve uninterrupted delivery of education during emergencies and as well new normal situation.

The Curriculum Framework for Classes PP – XII attempts to provide an overview of geography education in Bhutan. The framework is intended to serve various purposes. It shall provide teachers, students, educators and employers with clear statements of what learners are expected to achieve as a result of geography education. It is, therefore, a document of statement and communication to all stakeholders in the society, so that they understand the goals and aims of geography education at each key stage and also realise how this is achieved.

In the framework, the geography learning experiences are organized into four strands: three content strands and one skill strand that are as follows:

1. Time and Space
2. Physical Environment
3. People and Environment and
4. Essential Skills

The framework also encompasses various components of the subject, such as Introduction, Goals, Key Competencies, Guiding Principles, Curriculum Structure and Organization, Teaching and Learning Approaches, Assessment and Reporting, Enabling Conditions and Cross Curricular Linkages.

We believe that this framework will be useful for all the stakeholders including teachers, students, parents, education officials, policy makers and development partners.

Kinga Dakpa

(Director General)

Chapter 1
INTRODUCTION

Geography asks spatial questions—how and why things are distributed or arranged in particular ways on Earth's surface. It looks at these different distributions and arrangements at many different scales. It also asks questions about how the interaction of different human and natural activities on Earth's surface shape the characteristics of the world in which we live.

Geography seeks to understand where things are found and why they are present in those places; how things that are located in the same or distant places influence one another over time; and why places and the people who live in them develop and change in particular ways. Raising these questions is at the heart of the "geographic perspective."

A high-quality geography education should inspire in learners a curiosity and fascination about the world and its people. It should instil and equip learners with knowledge, skills and values about diverse places, people, resources and natural and cultural environments. Further, as learners' progress, their growing knowledge about the world should help them to deepen their understanding of the interaction between physical and human processes, formation and use of landscapes and environments.

Today geography is not merely a description or interpretation of the regions of the world but also is an enquiry, a study of causes, an attempt to find out 'why, 'where' and 'how' all those factors influence life on Earth. Geographers seek to understand the ways world works and why it appears as it does. This involves explaining the processes operating inside, on and above the Earth's surface and the ways in which these processes have created the landscapes around us and continue to change them.

Through geography we seek to understand differences in patterns of human distribution, interrelationship between human society and the physical environment, people's use of the Earth in time and space, and how these differences are related to people's culture and economy.

The growth in technology has greatly aided geographers in their tasks. It has given them increasingly refined techniques for gathering and interpreting data, whether in the field by means of Global Positioning System (GPS) or by using aerial photographs and satellite images.

Spatial relationships are at the heart of geography. The use of technologies like Geographic Information System (GIS) and Remote Sensing techniques has greatly assisted geographers to analyse spatial relationships among geographical features and phenomena.

People might attempt to modify and control the environment but in the long term, nature would prevail and determine the human destiny. Therefore, geography attempts to bridge the widening gap between the changing physical, biological and cultural phenomena.

The new normal curriculum framework has been developed based on the prioritised curriculum that was developed to ensure smooth teaching and learning during COVID19 situation. The curriculum has been prioritised to 65 percent of the total to allow students to learn deeper and engage in lifelong learning. The prioritised curriculum was based on the core and fundamental concepts to engage students for deeper and meaningful teaching and learning.

Chapter 2
GOALS

Geography enables learners to equip with geographic perspective, knowledge, skills and values to engage in ethical action with regard to self and others. It helps to understand Earth's diverse cultural and natural environments to prepare responsible citizens inspired by national and universal values and practices.

The goals of geography curriculum are:

1. Understand the Earth as a unique planet, its movement in space in relation to other celestial bodies in the solar system and how it affects lives.
2. Develop contextual knowledge of the location of places – both terrestrial and marine- defining physical and human characteristics and how these provide a geographical context for understanding the actions ofprocesses.
3. Generalize and draw conclusion on physical environment to prepare them for harmonious existence.
4. Realize the importance of relationship among the people and environment to become environmentally responsible citizens and make informed decisions in life.
5. Appreciate the Earth as the home of living beings and provide insight for wise decisions on resource management.
6. Participate in critical and informed debates on the key concerns and issues that may affect their lives locally and globally.
7. Foster love for learning geography.
8. Apply knowledge, skills and values to understand, interpret and address the emerging geographical and social issues.
9. Develop an understanding of Gross National Happiness (GNH) through geographical perspectives and apply them for making informed decisions.

Aims and Objectives of Geography are:

1. To acquaint the students with the living conditions of human in different parts of the globe.
2. To enable the students to acquire a knowledge of natural resources.
3. To develop in students an understanding of how environment and climatic factors have influenced our life.
4. To help the students to acquire knowledge of their physical and social environment and thus to broaden their outlook.
5. To develop in them an understanding of basic concepts, principles and theories relating to geographical phenomena.
6. To train the students in nature study.
7. To develop the power of thinking, reasoning, memory and power of imagination of students.
8. To develop their ability to draw conclusions and to generalize.
9. To develop a love for nation and to develop cosmopolitan and internationalist outlook.
10. To develop the creative talents of students and to develop an attitude of discovery in them.
11. To develop the skills of reading maps and globes, to develop drawing and measuring skills, and to develop the skill of using and manipulating geographical instruments.
12. To enable the students to appreciate the natural beauty and other physical forces.
13. To help the students to acquire economic efficiency and lead a successful life.
14. To adjust human life in accordance with geographical circumstances.
15. To develop scientific attitude and to develop the ability to draw valid conclusions and independent thinking.

In fact, Geography today is a combination of art and science. Its scope and study is broad and comprehensive. Geography has well established itself as a science.

Chapter 3
KEY COMPETENCIES

Competency is more than just knowledge and skills. It involves the ability to solve complex situations by drawing on and mobilising psychosocial resources (including skills and attitudes) in a particular context. For example, the ability to communicate effectively is a competency that may draw on an individual's knowledge of language, practical IT skills and attitudes towards those with whom s/he is communicating.

The key competencies are:

1. Spirituality and Values
2. Language
3. Transversal Competencies
4. Enterprising and Industrious
5. Sustainable Living
6. Health and Wellbeing and
7. Digital Competence

Some specific competencies of geography are:

3.1 Geo Awareness

It gives awareness on over all geographical issues that the world faces and are affecting individual's everyday lives. It covers a wide range of areas such as climate and weather, demographic characteristic, seismic, geo and human induced hazards.

3.2 Geo Diversity

It covers various earth materials such as rock, soil, water and bio-geographical elements including their forms and processes that constitute and shape the earth either whole or a part of it.

3.3 Geo heritage

It refers to the natural site or areas of geologic features with significant scientific, educational, cultural or aesthetic value and that provide unique insight into geological processes affecting the formation or evolution of the earth. Geo heritage can be further classified into natural heritage such as biodiversity and cultural heritage such as monuments and folklores.

3.4 Technologies and Enablement

It refers to any technology used or applied in studying geography. Some of the common geo technology includes GIS, remote sensing, web pages, music, videos and various software used for mapping, analysing geographical position and enhancing the learning of the subject more effectively. However, various enabling technologies such as laptops, smartphones and other gadgets must be used wherever felt necessary to use available technologies.

3.5 Narrative

It refers to using of maps, geographic tools, data and other multimedia to expand the ability to learn and to teach through narration. A person with a smartphone or computer can use maps to tell his or her story.

3.6 Spatial Citizenship

It describes the ability of individuals and groups to interact and participate in societal spatial decision making through the reflexive production and use of geo-media like maps, virtual globes, GIS and Geo-web. It also includes human contributions made voluntarily and involuntarily which enables to teach and learn the subject more effectively.

Chapter 4
GUIDING PRINCIPLES

The guiding principles refer to a set of principles, assumptions, emerging trends and priorities, which direct the curriculum development and implementation.

The following are the guiding principles as per the National School Curriculum Framework which are the overarching principles.

1. Values
2. Gross National Happiness (GNH)
3. Inclusiveness
4. Future focused, dynamic, and relevant
5. Learner-centred and developmentally appropriate

The subject specific guiding principles for Geography are:

4.1 Use of ICT

With the rapidly changing world, information and communication technology (ICT) has become so vital and is widely used for various purposes. The appropriate use of ICT reinforces and deepens geographical knowledge by adding value to learning and teaching.

The use of ICT and geographic technologies like Global Positioning Systems (GPS), Geographical Information Systems (GIS) and Remote Sensing provide additional advantage in analysing and forecasting the Geographical phenomena. ICT is also a significant motivational factor in engaging learners.

Hence, the geography curriculum ensures the integration of ICT for effective learning and teaching.

4.2 Interdisciplinary Nature

Geography is interdisciplinary in nature as it links social and natural sciences. A study of geography enables a person to relate his/her knowledge in terms of history, politics, science, mathematics, sociology, psychology, economics and fine arts among others.

Geography builds on major emphases in spatial analysis, human-environment interaction, and place-based and regional analyses to encourage communication and interaction with myriad other disciplines. The active pursuit of inquiries related to space, place, and interactions, especially dynamics within and across spaces and places, leads many geographers to range far from the field's core and explore the peripheral realms where geographic perspectives and insights intersect with those from other fields.

To this extent, the curriculum framework is designed to widen learners' breadth of geographical skills and knowledge true to its interdisciplinary nature.

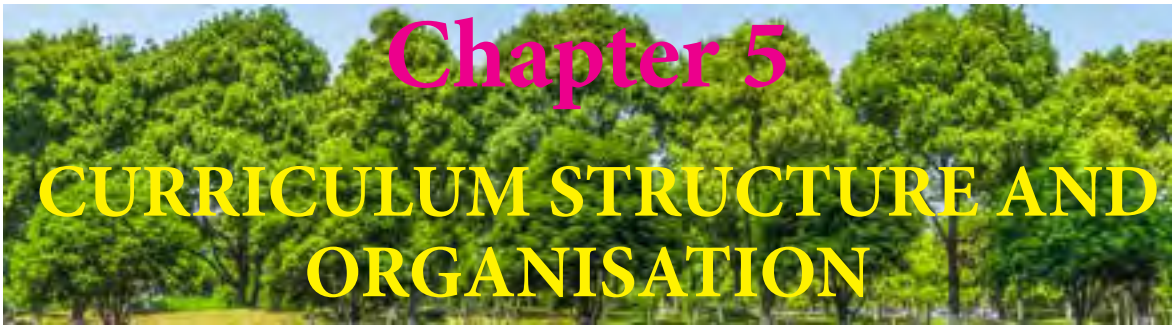
4.3 Skills Based Learning

The natural environment around us is a source of knowledge. While some aspects of natural environment can be directly observed, others need to be investigated to draw conclusion. In doing so, essential skills, such as observation, investigation, data interpretation, data analysis, mapping and social skills provide opportunities to the learners to develop skills and apply them in their life.

The essential skills in geography are foundations for understanding geographic knowledge. Learners develop skills of mapping and interpretation by engaging in map making, using maps and photographs.

4.4 Prioritised Curriculum

The curriculum has been priortised to suit the needs of the learners and to foster deeper teaching-learning and effective engagement. The new normal curriculum will focus on the core and fundamental concepts of the subject providing opportunities for enquiry and exploration to the learners. Moreover, this curriculum is also prepared to suit the changing needs of the society for uninterrupted delivery and implementation. As such, it has been envisaged that a minimum of about 30 percent of the content be delivered through virtual/online platform providing opportunity for learners to learn on their own.



Chapter 5
CURRICULUM STRUCTURE AND ORGANISATION

The geography curriculum is organized in four strands: Time and Space, Physical Environment, People and Environment, which are content related strands; and Essential Skills is a process strand. These strands are cross cutting in all key stages. However, Essential Skills is not to be taught as a separate topic, rather it must be integrated in rest of the three content strands.

5.1 Strands

Strands represent major themes to show logical flow of learning, starting from the concepts to natural and human made concerns to management and sustainability. There is progressive development of concepts from classes PP to XII.

The geography curriculum is organized in four strands: Time and Space, Physical Environment, People and Environment, which are content related strands; and Essential Skills is a process strand. These strands are cross cutting in all key stages. However, Essential Skills is not to be taught as a separate topic, rather it must be integrated in rest of the content strands.

Strand I: Time and Space (The Earth, location, place and region, geographic similarities and differences, celestial bodies and spatial awareness)

As inhabitants of the world, we relate ourselves to a particular place or region and define in terms of where we are located in relation to the rest of the world. Our understanding of the Earth as a unique planet in the universe will help to unravel the complexities of how the physical environment and spatial components of the world interact and impact life on the Earth. This should be facilitated through various strategies like discussion, demonstration, case studies, investigation, inquiry and use of ICT.

Strand II: Physical Environment (Lithosphere, Atmosphere, Hydrosphere and Biosphere)

The Earth comprises of four spheres. They include lithosphere which mainly consists of rocks and soils; atmosphere consists of gas, dust particle and water vapour;

hydrosphere consists of water bodies; and biosphere consists all forms of life. The interactions amongst these spheres and the processes of endogenetic and exogenetic forces influence the physical features and existence of life on Earth.

The study of spheres through simulations, field work, exploration and use of ICT, helps in understanding the roles of each sphere and how they interact and determine the existence of various forms of life on the Earth.

Strand III: People and Environment (Population and Settlements, Resources and Management, Spatial Interaction, Disaster and Management and Geographic Technology)

The Earth is a home to millions of species but human-beings dominate in changing the complex natural environment. Although the origin of human on Earth is incredibly recent in the geological time, their activities have modified many parts of the Earth. The ever increasing human population and their unlimited desires have resulted in over exploitation of resources. The over exploitation of resources has led to environmental degradation thereby resulting in various disasters.

The advancement in geographic technology helps to develop better understanding of the complex system on the Earth and address the emerging challenges that affect the health of the natural world.

The approaches like case study, field work, investigation, research, project work and presentation will be used to discuss and enhance learners' understanding of the interaction between people and the environment.

Strand IV: Essential Skills (Data analysis and interpretation, Map Reading and interpretation, Investigation and Social skills)

Essential Skills are integrated with three content strands. Skills like investigation, data analysis, mapping, interpretation and social skills are indispensable for geographical studies.

The use of these skills offer an inquiry into the immediate surrounding and beyond, thereby enhancing the understanding of the geographical concepts and principles. The application of the acquired skills will facilitate the development of positive values and attitudes for the subject.

5.2 Key Stages

The curriculum is organized into blocks of years called 'key stages'. Bhutan follows five key stages and they are:

i. Key Stage I (classes PP to III)

In the early years of this key stage, learners will develop observation skills using their senses to gather and record information, identify patterns, and talk about their ideas. At this key stage, learners will explore and work with materials to develop basic knowledge and skills of their immediate surroundings. In this stage, Geography concepts will be learn through Social Studies under the strand My World.

ii. Key Stage II (Classes IV – VI)

Learners at this stage are capable of making mental operations, think logically, and are ready for a deeper understanding of concepts. They discover a wide range of things and phenomena, though still predominantly focused on their immediate environment and concrete every day experiences. Simple models and theories are used to explain and make links between ideas. In this stage, Geography concepts would be learnt through Social studies under the strand My World.

iii. Key Stage III (Classes VII – VIII)

During this key stage, learners build on their environmental knowledge and understanding to make simple connections with different phenomena. They use basic ideas and models to explain geographical features, phenomena and events. Basic geographical knowledge is applied to improve the health of the environment and the quality of life.

iv. Key Stage IV (Classes IX – X)

Learners, at this key stage, demonstrate significant developments in terms of logical and abstract thinking; and are able to comprehend complex situations. A wide range of techniques including ICT are used to carry out investigation and draw conclusions. They discover a wide range of ideas that support geographical studies in greater depth for solving issues and problems.

v. Key Stage V (Classes XI – XII)

At this key stage, learners acquire cognitive abilities and an understanding of the natural world around them. They will be able to use geographic technologies and ICT to plan and manage complex investigations for addressing geographical issues and problems.

5.3 Key Stage-wise Competency Based Standards

Competency based standards are concise written description of what learners are expected to know and able to do, and, apply and transfer their learning to new contexts and situations at a specific stage of their education.

Key Stage I: At the end of this key stage, the students should be able to:

Strand I: Time and Space

i. Identify some celestial bodies to understand their importance.

ii. Explore the facilities in the school to find the location and the direction.

Strand II: Physical Environment

i. Explore different weather conditions to familiarize the changes in atmosphere.

ii. Identify the different land forms in their locality to recognize the features

Stand III: People and Environment

i. Demonstrate appropriate use of water for proper usage.

ii. Examine the importance of wearing dress and listening to music for national identity.

Key Stage II: At the end of this key stage, the students should be able to:

Strand I: Time and Space

i. Compare the planets in the solar system to comprehend their characteristics.

ii. Examine the movements of the earth to understand its impact.

Strand II: Physical Environment

i. Examine the elements of weather to understand its effect.

ii. Design models of landforms to understand the shape and structure.

iii. Explore Google earth apps to locate important sites in the locality.

Stand III: People and Environment

i. Analyze the importance of water for sustainable use.

ii. Examine the need for participation in cultural programs and wearing of national dress to preserve tradition and culture.

iii. Evaluate the consequences of waste disposal to understand the human impact.

Key Stage III: At the end of this key stage III, the students should be able to:

Strand I: Time and Space

i. Analyze the natural characteristics of a place and their influence on culture and identity.

Strand II: Physical Environment

i. Analyze the difference between weather and climate to explore about our country's weather and climate.

ii. Explore characteristics of various landforms to understand the process of gradation and relate the landforms to our culture.

Stand III: People and Environment

i. Evaluate the importance of natural resources for the balanced socio-economic development of our country.

ii. Design disaster contingency plan by using mapping skills.

iii. Recommend ways to overcome waste disposal to understand the negative impact on the environment.

Key Stage IV: At the end of this key stage, the students should be able to:

Strand I: Time and Space

i. Explore the significance of solar system to comprehend relative motions.

ii. Apply appropriate technology to design map of Bhutan for the effective use of advanced technology.

Strand II: Physical Environment

i. Analyse the complex interaction amongst the spheres and its impact on people and biodiversity.

ii. Analyze the role of places and regions in shaping the cultural identity and unifying the societies.

Stand III: People and Environment

i. Assess the need to maintain minimum forest coverage to combat climate change and natural disasters.

ii. Examine the role of community to minimize pollutions and to conserve biodiversity.

Key Stage V: At the end of this key stage, the students should be able to:

Strand I: Time and Space

i. Evaluate the significance of the movements of the Earth and other celestial bodies and their impact.

ii. Examine the similarities and differences between places and regions to comprehend spatial diversity.

iii. Apply geographical knowledge to interpret the past, present and future for planning.

Strand II: Physical Environment

i. Analyze the properties of soil to distinguish them for various uses.

ii. Conduct survey using available equipment and technology for planning and development.

iii. Examine the physical processes in the formation of landforms and their impact.

Stand III: People and Environment

i. Examine significance of remote sensing and Geographical Information System (GIS) technology to comprehend its application in various fields.

ii. Demonstrate the use of investigation skills and analysis of geographical information for planning and decision making.

iii. Assess different sources of population data to plan for economic development.

5.4 Class-wise Competencies

Key stage I

i. Explore the facilities in the school to find the location and the direction.

ii. Explore different weather conditions to familiarize the changes in atmosphere.

iii. Identify the different land forms in their locality to recognize the features

iv. Identify some celestial bodies to understand their importance.

v. Demonstrate appropriate use of water for proper usage

vi. Examine the importance of wearing dress and listening to music for national identity.

Key stage II

i. Compare the planets in the solar system to comprehend their characteristics.

ii. Examine the elements of weather to understand its effect.

iii. Analyze the importance of water for sustainable use.

iv. Examine the movements of the earth to understand its impact

v. Design models of landforms to understand the shape and structure

vi. Explore google earth apps to locate important sites in the locality.

vii. Examine the need for participation in cultural programs and wearing of national dress to preserve tradition and culture.

viii. Evaluate the consequences of waste disposal to understand the human impact.

Key stage III (Class VII)

i. Examine the significance of latitudes and longitudes to infer the weather and climate of a place.

ii. Evaluate the importance of natural resources for the balanced socio-economic development of our country.

iii. Design disaster contingency plan by using mapping skills.

iv. Analyze the natural characteristics of a place and their influence on culture and identity.

v. Explore characteristics of various landforms to understand the process of gradation

and relate the landforms to our culture.

vi. Recommend ways to minimise pollutions to understand the impact on the environment

Key stage III (Class VIII)

i. Examine the significance of latitudes and longitudes to locate and find the time of places.

ii. Evaluate the importance of natural and human resources for the balanced socio-economic development of our country.

iii. Design disaster contingency plan by using mapping skills.

iv. Analyze the natural characteristics of a place and their influence on culture and identity.

v. Explore characteristics of various landforms to understand the process of gradation and relate the landforms to our culture.

vi. Recommend ways to overcome waste disposal to understand the negative impact on the environment.

Key Stage IV (class IX)

i. Explore the significance of solar system to comprehend relative motions.

ii. Assess the significance of natural resources to conserve the eco system for long term sustainability.

iii. Apply appropriate technology to design maps for interpretation of geographical concepts.

iv. Analyse the complex interaction amongst the spheres and its impact on people and biodiversity.

v. Examine the role of society in minimizing pollutions for conservation to promote harmonious co-existence.

Key Stage IV (Class X)

i. Analyse the impact of interactions amongst the spheres to comprehend the components of biodiversity.

ii. Apply appropriate technology to design maps for interpretation of geographical information.

iii. Examine the role of society in minimizing pollutions for conservation to promote

harmonious co-existence.

iv. Analyze the role of places and regions in shaping the cultural identity and unifying the societies.

v. Assess the significance of natural resources to conserve the eco system for sustainability.

Key stage V (class XI)

i. Examine the similarities and differences between places and regions to comprehend spatial diversity.

ii. Analyse the importance of world climate to comprehend its complex nature.

iii. Assess the significance of natural resources to conserve the eco-system for sustainability.

iv. Examine the physical processes in the formation of landforms and their impact.

v. Apply geo-technology to develop maps for land use and resource management.

vi. Demonstrate the use of investigation skills and analysis of geographical information for planning and decision making.

vii. Assess different sources of information and data to plan for economic development.

Key stage V (Class XII)

i. Conduct survey using available equipment and technology for planning and development.

ii. Assess the significance of natural resources to conserve the eco-system for sustainability.

iii. Analyse the similarities and differences between places and regions to comprehend spatial diversity.

iv. Assess different sources of information and data to plan for economic development.

v. Apply geo-technology to develop maps for land use and resource management

vi. Examine the physical processes in the formation of landforms and their impact.

vii. Explore various theories to comprehend the scientific origin of the universe.

5.5 Learning Objectives, Core Concepts and Process/ Essential skills

Key stage I (classes PP-III)

Learning Objectives	Core Concepts	Essential skills
» Name the village you belong to. » Describe your home. indicate the basic compass direction. » Identify the *dzongkhag* you live in on the map of Bhutan.	Concepts in social studies	» Compass direction, Identification
» Differentiate day and night (Rising and setting of sun). » Draw pictures depicting different weather conditions.		» Differentiation, drawing
» Draw different landforms seen around your locality		» Drawing
» represent celestial bodies diagrammatically		» Diagram
» Demonstrate correct hand washing steps » Ensure water taps are closed when not in use.		» Demonstration, use of resources
» Display ways of wearing gho and kira. » Name at least three types of songs and dances		» Display, Naming

Key stage II (Classes IV-VI)

Learning objectives	Core concepts	Essential skills
» Describe solar system » List the planets in the solar system » Explain the shape of the Earth » Explain latitudes and longitudes » Describe the spheres of the Earth » Explain the relationship amongst the spheres of the Earth	Concepts in social studies	» Listing, Relationship
» Make models of weather instruments and landforms » Draw diagrams of landforms and weather conditions		» Making models, drawing
» Explain the importance of water bodies. » Discuss ways to make judicious use of resources. » List resources derived from nature.		» Usage of water, Listing
» Explain rotation and revolution » Explain causes and effect of rotation and revolution. » Explain seasons.		» Differentiation
» Use conventional signs and symbols to represent various features. » Define soil and rocks. » Discuss the formation of soil. » Compare various landforms. » Describe the importance of landforms » Display the understanding of landforms through model-making		» Comparison, model making

» Draw sketch maps of their locality. » Draw graphs using data and interpret them.		» Drawing sketches and graphs
» Describe their family tree. » Describe roles of their family members. » Describe a local festival. » Explain the importance of visiting dzongs and monasteries.		» Interpretation
» Identify hazards in the community. » Demonstrate basic life-saving skills during disasters. » Demonstrate safety practices for self and others.		» Identification, demonstration

Key Stage III (Class VII)

Learning objectives	Core concepts	Essential skills
» Discuss the nature and scope of geography. » Explain the movements of earth. » State the importance of latitudes and longitudes. » Compare latitude and longitude. » Calculate time using longitudes. » Locate features using latitudes and longitudes. » Distinguish between weather and climate » Explain the structure of the atmosphere and its significance. » Demonstrate the use of weather instruments.	i. Nature and scope of geography. ii. The earth in the solar system. (rotation, revolution) iii. .Latitude and longitude iv. Atmosphere v. Weather and climate	» Location, calculation, demonstration, comparison, demonstration

» Describe different types of rocks. » Explain the processes of rock formation(rock cycle) » Discuss minerals and types. » Discuss vegetation and its types » Discuss the concept and types of resources. » Explain the sustainable use of resources.	i. Rocks and minerals ii. Natural vegetation iii. Natural resources	» Exploration, interpretation
» Exhibit life-saving skills during disaster » Suggest measures to reduce disasters.	i. Hazards and disasters (Earthquake, windstorm, hailstone, fire, GLOF, floods)	» Exhibition, Suggestion
» Explain human population. » Explain death rate, birth rate and natural change. » Draw a population density map of a given country/ region. » Describe the concept and types of settlement. » Explain the patterns of settlement.	i. Population (natural change) ii. Settlement (rural, urban settlement)	» Drawing, interpretation
» Discuss the river systems. » Explain the basic processes of land formation. » Locate major rivers on an outline map. » Describe different types of landforms	i. River systems ii. Land forms (types of landforms)	» Location, Interpretation
» Describe ecosystem and food chain » Explain human interaction with the environment. » State some ways to combat environmental problems.	iii. Environment (ecosystem, food chain)	» Interpretation, suggestion

Key Stage III (Class VIII)

Learning objectives	Core concepts	Essential skills
» Discuss the key characteristics of earth's motion. » Describe the importance of latitudes and longitudes. » Identify latitudes and longitudes of places on a map. » Calculate time and longitudes. » Describe the composition and structure of the atmosphere. » Explain the significance of atmosphere. » Discuss the factors affecting climate.	i. Motions of the earth (Rotation, Revolution) ii. Latitude and longitude iii. Atmosphere iv. Weather and (Elements of weather and climate: temperature, pressure, rainfall)	» Identification, Calculation, interpretation
» Describe soil and its properties. » Explain soil forming factors. » Classify soils. » Explain natural vegetation. » Explain types and significance of natural vegetation. » Explain the causes of change in population. » Analyse the importance of addressing population change.	i. Soils ii. Natural vegetation iii. Population change iv. Natural resource	» Classification, analysis, Interpretation
» Describe volcano and earthquake. » Distinguish between hazards and disasters. » Differentiate natural hazards from human induced hazards. » Discuss causes and effects of disasters. » Suggest measures to mitigate disasters.	i. Earthquake and volcano ii. Hazards and disasters.	» Distinction, suggestion

» Classify patterns of settlement. » Illustrate patterns of settlement.	iii. Settlement (scattered, clustered and nucleated)	» Classification, illustration
» Discuss stages of river. » Locate features on a map » Illustrate relief features from contour map.	i. 1. River and features (Upper, middle and lower stage) ii. 2. Map reading and interpretation	» Location, Illustration, map reading
» Explain components of the environment. » Describe the interrelationship that exist among the various components » Analyse the importance of environmental conservation.	i. Environment	» Interpretation

Key Stage IV (Class IX)

Learning objectives	Core concepts	Essential skills
» Discuss the uniqueness of the earth. » State the evidences to prove the sphericity of the earth. » Explain the size of the earth in comparison to other planets in the solar system. » Explain the consequences of rotation and revolution. » Evaluate the importance of latitude. » Calculate the time and longitude. » Describe the composition of atmosphere. » Analyse the characteristics of different layers of atmosphere. » Explain the basic working principle of weather instruments with the help of drawings.	1.The earth - unique planet 2. Rotation and revolution 3. Latitude and longitude 4. Atmosphere	» Comparison, Calculation, Analysis, Drawing

» Explain the sources of river with the help of diagram. » Describe the river as an important agent of denudation. » Draw diagrams to interpret various features formed by rivers in different stages. » Evaluate the importance of river in the socio-economic development of a nation.	i. Rivers and land forms (denudation).	» Interpretation, drawing
» Interpret topographical maps. » Locate the important physical features on a map » Represent important human made features on a map.	i. Map reading and interpretation	» Interpretation, representation, map reading
» Explain the factors affecting soil formation. » Explain the properties of different types of soil. » Describe the different types of soil found in bhutan. » Describe the importance of soil and the ways to conserve it. » Describe the components and types of ecosystem. » Explain the structure of ecosystem. » Identify the external and internal factors responsible for the change in the ecosystem. » Discuss the environmental concerns and conservation measures. » Discuss the major disasters and their causes. » Describe common disasters in bhutan. » Explain disaster management approaches.	i. Soil formation ii. Natural environment iii. Hazard and disasters	» Identification, interpretation

» Interpret population pyramid. » Interpret data on distribution of population. » Explain the factors affecting the distribution of population. » Differentiate nucleated, dispersed, and linear settlement with examples. » Analyse the factors affecting patterns of settlement. » Describe various land use pattern. » Describe farming as a system. » Differentiate between traditional and modern farming. » Explain the factors influencing agriculture. » Analyse the importance of agriculture. » Identify causes and problems associated with farming. » Suggest measures to overcome/mitigate problems of farming.	i. 1. Population distribution ii. 2. Settlement (dispersed, Nucleated and Linear) iii. 3. Agriculture (Farming system)	» Interpretation, Differentiation, Analysis

Key Stage IV (Class X)

Learning Objectives	Core Concepts	Essential Skills
» Discuss the origin of the earth with reference to the big bang theory and solar nebula. » Evaluate the significance of latitudes and longitudes. » Determine longitude and time. » Compare climatic zones with vegetation zones of Bhutan. » Discuss the impact of climatic zone on its inhabitants. » Represent climatic zones on a map.	i. The origin of the Earth (Big Bang Theory, Solar Nebula theory) ii. Latitude and longitude iii. Climate	» Representation, Comparison, analysis, interpretation

» Recognize regional differences and similarities both locally and globally. » Explain the components of biodiversity. » Compare ecosystem with biodiversity. » Analyse the significance of biodiversity. » Discuss the basic techniques of layout and numbering of topographical maps » Interpret the topographical map. » Interpret diagrams, graphs, illustrations and maps to draw logical conclusions » Demonstrate skills of using geographic technologies and ict. » Represent human made features on a map. » Explain concept of survey.	i. Biodiversity ii. Interpretation of topographic maps (layout, numbering)	» Interpretation, demonstration, representation,
» Project the population trend. » Discuss the causes of population growth. » Assess the impact of population growth. » Discuss spatial distribution of settlement with reference to central place theory. » Explain migration and its type. » Describe common disasters in bhutan. » Suggest mitigation measures to reduce impact of disaster. » Demonstrate measures to reduce risk during disaster.	i. Population ii. Settlement (Central place theory) iii. Hazards and disasters	» Demonstration, assessment, projection, suggestion

» Explain the formation of himalayan mountain system with reference to continental drift theory and plate tectonics. » Interpret the geological time scale.	i. Formation of Himalayas (Continental Drift and Plate tectonics)	» Interpretation
» Classify the different sectors and types of industries. » Explain factors affecting location of industries. » Analyse the impact of industries. » State the importance of agriculture with reference to agro-based industries. » Discuss mineral resources and its distribution. » Discuss groundwater and karst topography. » Discuss gradational agents and their activities.	i. Industries ii. Agriculture iii. Minerals iv. Gradation	» Classification, analysis, interpretation

Key Stage V (Class XI)

Learning objectives	Core topics	Essential skills
» Explain the origin of the universe from buddhist perspective. » Examine the significance of the moon for the earth	i. The origin of the universe (Buddhist perspective). ii. Significance of the Moon.	» Examination, interpretation
» Discuss temperature and pressure. » Explain the causes and consequences of shift in world pressure and wind belts. » Explain different climatic zones of the world	i. Temperature and pressure ii. World climatic zones	» Analysis, interpretation

» Analyse the relationship between global warming and climate change. » Discuss the evidences for climate change. » Analyse the consequences of climate change and suggest measures to minimize the impact. » Describe the properties of soil » Distinguish soils for various uses. » Trace the development of agriculture in bhutan. » Explain features of agriculture. » Examine the scope of agriculture in bhutan. » Discuss the history of industrial development. » Explain types of manufacturing industries. » Discuss the development of tourism industry in bhutan. » Explain the factors affecting tourism. » Discuss energy sources. » Differentiate between conventional and non-conventional energy sources. » Discuss geothermal energy. » Explain importance and approaches of resource management. » Discuss sustainable development. » Examine the dichotomy between resource utilisation and sustainable development. » Discuss the concept of biomes.	i. Climate change and global warming. ii. Soil formation iii. 2. Agriculture in Bhutan iv. 3. Industrial development v. 4. Energy resources.	» Distinction, tracing, examine, interpretation

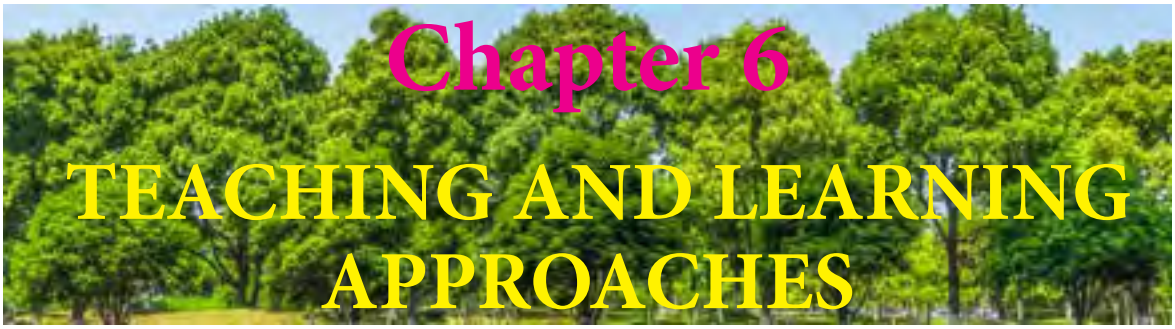
» Explain the internal structure of the earth with an illustration. » Discuss the causes and impacts of volcanism and earthquake. » Suggest measures to reduce the risk of earthquake.	i. Earth's structure	» Suggestion, interpretation
» Explain remote sensing and gis. » Examine the significance of remote sensing and geographical information system	i. Remote sensing and GIS	» Interpretation
» Discuss various map projections. » Demonstrate the skills of constructing map projection using different methods. » Explain the concept of scales. » Convert representative fraction into statement scale and vice-versa. » Demonstrate the skills of interpreting topographical maps. » Represent natural and human-made features on a map.	i. Scales ii. Map projections iii. Map reading and map work	» Demonstration, conversion, demonstration, representation
» Analyse the significance of conducting population census. » Examine the spatial distribution of population. » Discuss population dynamics. » Explain the trends of population. » Draw population pyramid using a given population data and interpret it. » Discuss urbanisation. » Classify urban centres.	i. Demography ii. Urban centres	» Analysis, examination, drawing,

Key Stage V (Class XII)

Learning Objectives	Core Concepts	Essential Skills
» Explain cartography and its uses. » Discuss surveying. » Describe instruments for plane table survey. » Explain precautions for conducting plane table survey. » Conduct a simple plane table survey. » Discuss the use of total station for survey	i. Surveying	» Conduction, Survey, interpretation
» Discuss type of rocks and rock cycle. » Classify soils. » Discuss the development of hydropower sector in Bhutan. » Discuss alternative sources of energy.	i. Rocks and soils. ii. Water resource and alternative sources of energy	» Classification, interpretation
» Analyse the impacts of tourism. » Suggest measures to enhance tourism industry. » Discuss the preservation and promotion of cultural heritage. » Discuss potential hazards in Bhutan. » Suggest measures to mitigate potential hazards and disasters. » Explain disaster management cycle.	i. 1. Tourism and hospitality. ii. 2. Hazards and disasters.	» Analysis, measures, interpretation

» Explain fertility and mortality. » Suggest measures of fertility and mortality. » Analyse the trends of fertility and mortality. » Describe the role of working population and its impact on the economy. » Suggest ways to overcome unemployment problem in a country. » Explain migration. » Examine the causes and consequences of migration. » Suggest measures to mitigate migration. » Discuss models of urban centres. » Discuss the importance of urbanisation. » Analyse the causes and problems of urbanisation. » Suggest measures to overcome problems of urbanisation.	i. Population study (fertility, mortality, working population) ii. Urbanisation (Migration, urban sprawl, squatter settlement)	» Suggestion, Analysis, examination, interpretation
» Describe global positioning system and its importance. » Discuss remote sensing and its application. » Discuss gis and its application. » Demonstrate the use of gis software for spatial and non-spatial data. » Locate different biomes on a map with the help of technology.	i. Global Positioning System ii. Remote sensing and GIS	» Demonstration, location, interpretation

» Discuss glaciers as agent of gradation. » Explain third pole in the context of glaciers and global warming. » Discuss fluvial processes and associated landforms. » Discuss cycle of erosion. » Explain humidity and air temperature. » Calculate relative humidity. » Describe different forms of condensation. » Discuss types of precipitation » Discuss koppen's classification of climate.	i. Work of glaciers ii. Fluvial processes. iii. Precipitation and condensation iv. Classification of climate (Koppen)	» Calculation, interpretation, classification
» Explain the origin of universe with reference to gaseous mass hypothesis and electromagnetic theory.	i. The origin of Universe (Gaseous Mass Hypothesis and Electromagnetic theory)	» Interpretation



Chapter 6

TEACHING AND LEARNING APPROACHES

The following are the teaching and learning approaches stated in NSCF (2020) which are generally found to be effective and efficient for impactful teaching and learning:

- Competency Based Learning
- Place Based Education
- Dimension of effective pedagogy (21st century skills and pedagogy, experiential learning)
- Autonomy, flexibility and adaptability (teacher as a facilitator/localised curriculum)
- Reflective practices (where am I going? How do I reach there?)
- Blended learning (Eg. TPACK model)
- Differentiated/Inclusive/ Personalised instruction
- Individualised learning/Learner centred/Learner ownership (lifelong learning)

Subject specific teaching learning approaches are:

6.1 Group presentation.

Group presentation can be carried out in small group consisting of not more than five students. Students can divide the main sub-topics of the chapter within the group, and do a research and write up either by visiting library or by browsing online resources individually. Once every student member has done their part, they can sit together and share their findings and compile them into sequence as required for presentation. Finally, they do the presentation to class by taking turn or by a chosen presenter but all the members must know what ever the presenters are presenting. Other groups must take active participation by listening and asking question to the members of the particular group. The subject teacher has to guide and facilitate group presentation for effective teaching and learning.

6.2 Team Teaching and Learning

Team teaching can be done amongst the subject teachers as a team in turns. This will create effective, variety and fun learning for students. Teachers share the topics amongst themselves based on the basis of their content knowledge, confidence and skills. Teachers can be more creative and learn for one another. It can also boost the morale of individual teacher and improve their confidence.

6.3 Field Trip

Geography can be taught better through real life field observation and learning. Most of the topics in geography can be taught through field visit where students can see, feel and get real life experience. Field trip has to be properly planned and monitored by subject teacher as guide and escort. Students learn more by asking questions to the people in the field and recording answers during such visits.

6.4 Integration of ICT

ICT is an indispensable tool for 21st century teaching and learning process. Geography can be taught by integrating ICT anywhere provided ICT facilities are available. By using ICT, all teaching learning materials like audio-visual materials, facts and figures, write ups and other additional information can be put into use. Students can learn geography more readily and with enthusiasm through the integration of ICT. Teachers need to teach the latest updates in geography as well as past geographical phenomena in audio- visual forms by either online or offline.

6.5 Questioning Techniques

Asking questions is a key ingredient in the learning process and in effective teaching. Using a variety of questions in the classroom can serve many different purposes. It helps to diagnose student's level of understanding and to retain material by engaging students in their learning process, especially critical thinking and reflection.

6.6 Discussion Methods

Discussion methods are a variety of forums for open-ended, collaborative exchange of ideas for the purpose of furthering students thinking, learning, problem solving, understanding, or literary appreciation. Participants present multiple points of view, respond to the ideas of others, and reflect on their own ideas in an effort to build their knowledge, understanding,

or interpretation of the matter at hand. A defining feature of discussion is that students have considerable agency in the construction of knowledge, understanding, or interpretation.

6.7 Models and Objects

Models allow students to take complex information about the physical world and places in it, and start identifying patterns and trends. To explain these patterns, students create models that seek to explain the phenomenon being observed. Models are useful tools to help synthesize and research geographic information.

6.8 Peer Support

Peer support is one way in which educational institutions are supporting and encouraging students to support each other, through a formalised framework. The interactions with peers, increases academic engagement, improved progress on individualised social goals, increases social participation in class and the formation of new friendships. Peer-Assisted Learning Strategies (PALS) is a class wide peer tutoring program. Teachers carefully partner a student with a classmate. The pair works on various activities that address the academic needs of both students. Pairs change over time. The main benefits of peer teaching are students receive more time for individualized learning; direct interaction between students promotes active learning.

6.9 Online Teaching

Online teaching and learning is education that takes place over the digital platform. Audio-Visual recordings and other teaching learning materials can be uploaded in online platforms (Google) and other social media. Tests and quizzes can be conducted to engage the students for active participation.

6.10 Laboratory Method

The laboratory method of teaching places primary emphasis upon equipment and its use. In this method the role of the teacher is that of a guide and helper rather than that of taskmaster. In this method, students 'learn by doing' as students experience the basis of real learning. The use of this method helps to develop valuable personal qualities such as balance judgment and consideration for others.

6.11 Project Method

Project method involves investigation and solution of problems and uses physical materials. It is for the development of inherited traits of child providing the most natural conditions. It develops social values like cooperation, collaboration and being sociable. Project method provides the students training in research work.

6.12 Research Method

Research method of teaching can be used to teach the topics that require gathering additional information. Students develop simple questionnaire and go to field to gather information, observe and survey. They interpret and analyse data and compile the findings.

Chapter 7
ASSESSMENT AND REPORTING

Assessment in education is the process of gathering, interpreting, recording and using information about students' responses to an educational task. It is the crucial link between learning outcomes, content, competency, and teaching and learning activities.

7.1 Purpose of Assessment

The purpose of assessment is to improve students' learning and teachers' teaching. It is an ongoing process that arises out of the interaction between teaching and learning. The purposes of assessment are:

i. Assisting student learning

- Provide feedback to improve student learning
- Motivate student
- Diagnose students' strength and weaknesses

ii. Evaluating and improving teaching and learning programs

- Provide feedback to the teacher
- Inform the need to improve teaching strategy
- Monitor students' progress
- Ascertain if the learning objectives are achieved

iii. Providing evidence of student achievement and completion of the level.

- Promote students to the next higher class.
- For appropriate placement.
- For selection of students for relevant course.
- To reward students for their learning.

7.2 Principles of Assessment

» **Reliability**

Reliability refers to the extent to which assessments are consistent. An assessment is reliable when assessors using the same criteria and marking scheme arrive at exactly the same judgment about a given piece of work.

» **Validity**

Validity refers to credibility of an assessment. It ensures that assessment task and associated criteria effectively measure students' attainment of the intended learning outcomes at an appropriate level.

» **Relevancy**

Relevancy is the appropriateness of assessment in relation to the content of curriculum. Assessment task should reflect the nature of the subject and ensure that students develop a range of skills and capabilities.

» **Transparency**

Transparency refers to how clear the assessment expectations are for learners and stakeholders. Assessment should be clear, accurate and fair. Timely information on assessment task and procedure should be made available to them.

» **Inclusive**

It is an approach to an assessment to promote diverse learning needs without compromising the academic standards. Inclusive and equitable assessment should ensure that assessment task and procedures do not disadvantage any group or individual student.

7.3 Types of Assessment

Assessment in various forms is integral to learning and teaching to facilitate learning and improving instruction. It is generally divided into three types: diagnostic assessment, formative assessment and summative assessment.

» **Diagnostic Assessment**

Diagnostic assessment is assessment for learning. It assesses what the learners already know and the nature of difficulties that the learners might have, which, if undiagnosed, might limit their engagement in new learning. It also helps to determine students' strength and learning needs in order to plan and adjust learning and teaching.

» **Formative assessment**

Formative Assessment is assessment for learning. It is administered throughout the process of instructional hours, wherein teachers assess and provide task based guidance and feedback.

Formative assessment also includes assessment as learning, where students reflect on, monitor their own progress and set goals for their learning. The information gained also guides teachers' decisions in enhancing learning and teaching.

» **Summative assessment**

Summative assessment is assessment of learning. It is administered at the end of instructional periods to gauge the level of students' achievements and performance. The task assigned for the assessment includes set of questions, or the task to demonstrate their mastery and knowledge of the course content. It provides information about the learners' level of learning and grade learners; and to analyse the effectiveness of teaching.

7.4 Assessment Techniques and Tools

Geography is an inter-disciplinary subject and requires various types of assessment tools to ensure that the performances of learners are assessed at the cognitive and procedural levels. Therefore, the suggested assessment tools in geography include:

i. **Anecdotal records:** objective, narrative records of learner's performances, strengths, needs, progress and negative/positive behaviour.

ii. **Self and peer assessment:** assessment by learners for self and others relative to stated criteria and program outcomes.

iii. **Portfolios:** collections of learner's work that exhibit their efforts, progress and achievements in one or more areas.

iv. **Simulations:** presentation of an artificial problem, event or situation or object that duplicates reality. For example earthquakes, volcanoes, fire, geysers and hot springs.

v. **Project works:** an extended investigation carried out by learners on a topic agreed by learner and teacher.

vi. **Assignment:** a learning task undertaken by learners, allowing them to learn a fixed section of the curriculum. Different ways of presenting the results can be used depending on the nature of the task – a report (oral, written and audio-visual).

vii. **My exploration:** explore the physical and natural environment and prepare a record of what learners observe and collect in the form of journal.

viii. **Field work:** visit to a place outside the classroom to get first-hand experience in which open inquiry techniques and learners' experimentation can take place.

ix. **Tests:** finding out the level of knowledge, skills and values learners have acquired.

x. **Observation:** observation of geographical features and phenomena to draw inference. Checklist: is a to-do list that helps to ensure consistency and completeness in carrying out a task.

xi. **Conference:** exchange of information and ideas on geographical topics.

xii. **Debate:** presenting ideas to support or argue on a given issue or a problem.

xiii. **Quiz:** questions to assess learners' knowledge, skills and attitude.

xiv. **Seminar:** presentation and discussion on geographical themes.

xv. **Survey:** collection of information and data on geographical issues for decision making.

xvi. **Demonstration and Exhibition:** practical exhibition and explanation of how things work or function and display geographical works.

xvii. **Research and Presentation:** collect data and information, interpret and share the findings.

xviii. **Problem solving activities:** studying and finding solutions to difficult or complex geographical issues.

xix. **Geography Olympiad:** competency test to motivate learners' interest in learning geography and prepare for higher competitions.

7.5 Reporting

Schools are responsible for awarding a grade for each student who completes a year to represent their achievement. These grades are determined by the student's performance in relation to their academic and competency achievement. Teachers make professional, on-balance judgments about which grade description best matches the standards their students have demonstrated by the end of the year.

Teachers are required to ensure that the grades awarded are consistent with the learning standards specified in the curricular framework. The grade awarded is reported on the student's Progress Report, a cumulative credential that allows students to accumulate their academic results until they complete academic year.

Chapter 8
ENABLING CONDITIONS

Every school across the country must have enabling conditions to implement the new geography curriculum effectively. Following are some of the enabling conditions required in schools to teach geography:

i. Clear instruction and guidelines addressed to the school head from relevant agencies like REC, BCSEA and MoE to be issued for compliance.

ii. Immediate support from school administration and management.

iii. Teacher competency- mandates competent teachers to teach the subject.

iv. Online teaching learning need to be continued to supplement with traditional teaching. A minimum of 30% of the learning content need to be delivered online for effective and uninterrupted teaching and learning process.

v. Offline resources to be provided as additional teaching learning materials. (Khan Academy, coursera, skills share, Ted-Ed, Lynda, Big Think, Teacher tube, future learn, open source)

vi. Schools need to promote positive learning environment by addressing learners need, keeping it positive, providing feedback, celebrating success, maintaining safety and employing interactive games and activities.

vii. Reliable and high speed internet connection

viii. Adequate Projectors with computer connection or smart boards

ix. Necessary orientation, Professional Development programmes and trainings to the teachers.

x. Field trips and outdoor education for students to be encouraged to promote Placed Based Education (PBE). Field trips can be combined with other subjects to minimize the cost and to maximize the support and learning for students.

xi. Weather station with the following instruments: thermometer, wind vane, rain gauge, hygrometer, anemometer and barometer to be in place.

xii. Establish a Resource Centre in each Dzongkhag.

xiii. Lab with following equipment:

- » Enough set of instruments to conduct plane table survey
- » Minimum one set of total station equipment.
- » Enough set of GPS equipment.
- » Samples of rock types.
- » Maps and globes
- » Sufficient A4 topographic map.
- » Sufficient A3 (without grid) topographic map.
- » Outline map of Bhutan, Asia & South Asia.
- » Outline map of Bhutan.
- » Necessary teaching aids

8.1 National Geography Resource Centre

Resource centre is a multi-disciplinary applied research and teaching facility for geographic and remote sensing data analysis. The purpose of a resource center is to advance the learning experience of students and teachers in any educational sector.

Resource Centre should have the following materials to learn and to lend:

i. Reference materials such as books, maps, atlas, teaching aids, text books, wall charts, slides, magazines.

ii. Practical equipment such as four sets of plane table surveying equipment, two sets of total stations, and four sets of GPS equipment.

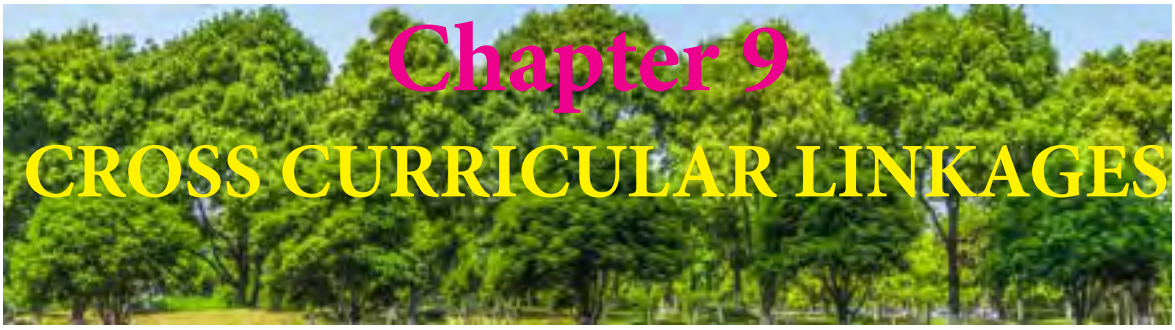
iii. Laboratory equipment like rocks and minerals sample, globes, sample of best projects and practical records.

iv. Digital resources such as projector and computer with internet connection, work book, sample studies, case studies, pictures, film and film strips.

v. Weather station

vi. Outdoor learning materials like soil profile, drainage patterns, land form types(mountain, plateau, plain, U-shaped valley, V- shaped valley, delta, estuary alluvial fan, flood plain, levee, waterfall, rapids , types of moraines).

vii. Experienced geography teacher as a manager and a separate caretaker.



Chapter 9
CROSS CURRICULAR LINKAGES

Geography is interdisciplinary in nature as it links social and natural sciences. A study of geography enables a person to relate his/her knowledge in terms of history, politics, science, mathematics, sociology, psychology, economics and fine arts among others.

Geography builds on major emphases in spatial analysis, human-environment interaction, and place-based and regional analyses to encourage communication and interaction with myriad other disciplines. The active pursuit of inquiries related to space, place, and interactions, especially dynamics within and across spaces and places, leads many geographers to range far from the field's core and explore the peripheral realms where geographic perspectives and insights intersect with those from other fields.

To this extent, the curriculum framework is designed to widen learners' breadth of geographical skills and knowledge true to its interdisciplinary nature.

Glossary

Transversal skills – is an ability or expertise which may be used in a variety of roles or occupations.

GNH - Gross National Happiness

Strands - Strands represent major themes to show logical flow of learning, starting from the concepts to natural and human made concerns to management and sustainability.

Key stage – any of the five fixed stages into which the national curriculum is divided, each having its own prescribed course of study.

GPS – Global Positioning System, a global navigation satellite system that provides location, velocity and time synchronisation.

GIS – Geographic Information System is a framework for gathering, managing, and analysing data.

Dzongkhag - District

REC – Royal Education Council

MoE – Ministry of Education

BCSEA – Bhutan Council of School Examination and Assessment

Bibliography

i. Baerwald, T.J. (2010). Prospects for Geography as an Interdisciplinary Discipline. Annals of the Association of American Geographers Vol. 100. Iss. 3,2010.

ii. Kerski, Joseph J. (2014). Geo-awareness, Geo-enablement, Geotechnologies, Citizen Science, and storytelling: Geography on the World stage, Colorado, USA.

iii. Parker, Edith P, 1933, Principles Underlying the Construction of a Geography Curriculum, Journal of Geography

iv. Soto, Victor J, (2010), Writing Instructional Objectives; Student Learning Outcomes, Retrieved from:www.edglossary.org/learning-standards.

v. National Science Education Standards, (1996), National Academy Press.

vi. Social Studies New Hampshire Curriculum Framework K-12, (2006). Department of Education. New Hampshire.

vii. Retrieved from: https:www.jstor.org/stable/40568119.

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