

National School Curriculum

INSTRUCTIONAL GUIDE FOR GEOGRAPHY

CLASSES VII & VIII



Department of Curriculum and Professional Development
Ministry of Education, Royal Government of Bhutan



"Your parents, relatives, and friends would be very proud of what you have achieved. At your age, to have completed your studies is your personal accomplishment. Your knowledge and capabilities are a great asset for the nation. I congratulate you for your achievements. Finally, your capabilities and predisposition towards hard work will invariably shape the future of Bhutan. You must work with integrity, you must keep learning, keep working hard, and you must have the audacity to dream big."

-His Majesty Jigme Khesar Namgyel Wangchuck

National School Curriculum

INSTRUCTIONAL GUIDE

FOR GEOGRAPHY

CLASSES VII & VIII



Department of Curriculum and Professional Development
Ministry of Education, Royal Government of Bhutan

Published by

Department of Curriculum and Professional Development
Ministry of Education
Royal Government of Bhutan
Thimphu, Bhutan.

Provisional Edition 2021

First Edition 2022

www.education.gov.bt

© 2022 Department of Curriculum and Professional Development

All rights reserved. This publication is not for sale. No part of this book may be produced in any form
without permission from the Ministry of Education

ISBN 978-99936-0-607-9

Acknowledgements

The Department of Curriculum and Professional Development (DCPD) is able to publish the National School Curriculum Instruction Guide with the administrative and funding support of the Ministry of Education and remains optimistic that the continued support facilitates effective implementation in schools. DCPD also remains thankful to school principals for the administrative support and teacher participants for professional inputs and diligent work.

In our endeavour in the development of Education in Emergency curriculum material during the COVID19 pandemic, collaboration and financial support were forthcoming from diverse national and international development partners. In particular, technical and financial support of GPE through Save the Children Bhutan and UNICEF helped us to deliver the curriculum materials on time.

Research and Writing of Instructional Guide (provisional edition 2020):

1. Cheku, Teacher, Woochu LSS, Paro
2. Karma Nidup, Teacher, Dawakha LSS, Paro
3. Sonam Wangdi, Teacher, Doteng LSS, Paro
4. Tandinla, Teacher, Samtengang CS, Wangdue
5. Norbu Wangchuk, Curriculum Specialist, REC, Paro

Research and Writing of Instructional Guide (First Edition 2022):

1. Sonam Wangdi, Doteng LSS, Paro
2. Karma Nidup, Wanakha MSS, Paro
3. Cheku, Woochu LSS, Paro
4. Dorji, Dashiding HSS, Punakha
5. Norbu Wangchuk, DCPD, Thimphu

Advisors:

1. Kinga Dakpa, Director General, Royal Education Council, Paro
2. Tashi Namgyal, Director, DCPD, Thimphu
3. Wangpo Tenzin, Curriculum Specialist, DCPD, Thimphu

Foreword

The erstwhile Royal Education Council (REC) developed an Adapted and Prioritized curricula for schools so that students can continue learning during the disruptions caused by the COVID 19 pandemic since March 2020. With the commencement of the 2021 academic session, the new normal curriculum, later renamed as the National School Curriculum (NSC), was embraced as a paradigm shift of education from the conventional knowledge-based learning to competency based, open source and experiential learning leveraged on digital technologies. In order to facilitate the effective implementation of the curriculum change, Instructional Guides were developed in all subjects, and the teachers were oriented through virtual and short contact modes as per the prevailing pandemic situations. The curricula were aimed at minimizing the learning loss for learners as it was designed for implementation in different situations - during school closure or during regular contact instructional hours.

While these measures served as a solution to problems brought about by the pandemic and the global changing trend in education, a resilient and more dynamic curricula and instructions remain the current priority of the Government. In cognizance of some the shortfalls in the provisional edition of Instructional Guides (IG), the Department of Curriculum and Professional Development reviewed and revised the existing Instructional Guides across all subjects with the aim of enforcing the competency-based learning, and making teaching-learning happen ‘anytime anywhere’ commensurate to an inclusive education, so that all learners are provided the opportunity to learn at their pace and situation.

The revised Instructional Guides have drawn ideas and inspiration from various educational philosophies and principles, particularly the Delors Report, Learning: The Treasure Within (1996). The report prioritizes the development of the whole person and not just academic knowledge through the four pillars: “learning to know”, “learning to do”, “learning to be”, and “learning to live together”. Therefore, the New Curriculum and the Instructional Guide is an attempt to transform education from the teaching of “what” to learning of “how” and “why” towards empowering learners with the transversal competencies and the 21st century skills, and preparing them to be lifelong learners.

It must be noted that the New Curriculum and the Instructional Guide are not just a response to the pandemic, but a culmination of the curriculum reform work for the last four years by the Royal Education Council. The school curricula are to be perceived as integrated, and based on themes and problems that inspire learners to learn and to live in peace with our common humanity and our common planet. This has the potential in the development of a strong base of knowledge about one’s self and about the world, find purpose of learning, and be better able to participate in social and political milieu. Thus, this initiative is envisaged to orient our educational process towards nurturing ‘nationally rooted and globally competent’ citizens.

Wish all our learners and teachers a life enriching experiential teaching and learning.



Tashi Namgyal
Director

Table of Content

Acknowledgements.....	iii
Foreword.....	iv
Introduction	1
Purpose of Instructional Guide	2
CLASS VII	
STRAND: TIME AND SPACE.....	4
1. Theme: The Earth's Grid.....	4
STRAND – TIME AND SPACE	6
2. Theme: Map Reading and Interpretation	6
STRAND: PHYSICAL ENVIRONMENT	8
3. Theme: Land Formation Processes	8
STRAND – PHYSICAL ENVIRONMENT	10
4. Theme: The Earth's Atmosphere	10
STRAND: PEOPLE AND THE ENVIRONMENT.....	12
5. Theme: Resources and Economic Development.....	12
STRAND: PEOPLE AND THE ENVIRONMENT.....	15
6. Theme: Population and Settlement	15
STRAND: PEOPLE AND THE ENVIRONMET	17
7. Theme: Hazards and Disasters	17
STRAND: PEOPLE AND THE ENVIRONMENT.....	19
8. Theme: Human Environment Interaction	19
CLASS VII	
STRAND – TIME AND SPACE	22
1. Theme: The Earth's Grid.....	22
Suggestive URL:	23
STRAND – TIME AND SPACE	24
2. Theme – Map Reading & Interpretation.....	24
STRAND – PHYISICAL ENVIRONMENT.....	26
3. Theme: Land formation Processes	26
STRAND - PHYSICAL ENVIRONMENT	28
4. Theme: The Earth's Atmosphere	28
STRAND: PEOPLE AND THE ENVIRONMENT	30
5. Theme: Resources and Economic Development.....	30
STRAND: PEOPLE AND ENVIRONMENT	33
6. Theme: Hazards and Disasters	33
STRAND: PEOPLE AND THE ENVIRONMENT	35

7. Theme: Settlement.....	35
STRAND: PEOPLE AND THE ENVIRONMENT.....	37
8. Theme: Human Environment Interaction	37

Introduction

This guide has been developed for teachers teaching Geography in schools across the country for the implementation of the Geography curriculum. As all the schools follow the same curriculum aimed at equipping the students with the same set of competencies, it is crucial for all the teachers to have the same understanding about the intent of the curriculum so that they would be able to implement it as desired.

The Geography curriculum consists of four strands, according to the language competencies to be taught; they are Time and Space, Physical Environment, People and the Environment, and, Essential Skills, and Geographical competencies to be acquired and demonstrated by the learners at each stage of learning are outlined as Standards, Competencies and Objectives. While guiding teachers on what to teach, these standards, competencies and objectives will also inform the stakeholders about the levels of knowledge and skills expected from the learners at various stages of education.

The sample activities given in the guide are suggestive in nature. Teachers can negotiate to adapt and design their own teaching learning activities or experiences that best suit their learners and their environment. What is non-negotiable is the teaching of the competencies that the learners must acquire at each class before they move on to the next class.

The curriculum has a wide range of knowledge, concepts and skills that the students need to master. There are those which the learners can explore, acquire and practice to master on their own, and there are also more complex ones which need to be taught explicitly and practised consistently to gain a satisfactory level of mastery. Classroom teaching and instructional time should focus on teaching those concepts and skills that the students cannot learn on their own, while encouraging learners to explore some areas to learn and practice on their own.

A major shift in the curriculum is the teaching and development of skills by the learners. Therefore, the curriculum contents should be used as vehicles to move towards the acquisition of competencies. The competencies for each class are further broken down as objectives that should serve as signposts for teachers to decide what to teach.

Since, competencies are at the heart of curriculum and its implementation, teachers should make conscious choice of the most suitable teaching-learning approaches. And, because the teaching focusses on acquiring skills/competencies, assessment will also be on the acquisition and demonstration of the skills - skills in terms of Geospatial concepts, social, behavioural and affective domains that are demonstrable and measurable. Various assessment approaches, tools and rubrics have been devised and suggested in the Instructional Guide. Teachers are enquired to be consistent to meaningfully assess students and report to stakeholders at various levels. Further, the focus of assessment should be for learning rather than assessment of learning which would happen periodically.

Purpose of Instructional Guide

Among the many definitions of ‘curriculum’ this Instructional Guide underscores the meaning of curriculum as a standard and competency-based sequence of planned learning experiences where learners practice and achieve the proficiency in applying the learning experiences in real life scenarios. These proficiencies, in the curriculum framework, have been stated as “competencies” and ‘objectives’ for each class. In keeping with the principle, ‘less is more’ as stated the National School Curriculum, the contents of the curriculum have been reduced so that learners can be engaged more in activities/learning experiences that can lead to the acquisition of geographic knowledge and skills rather than having them ‘cover the syllabus.’

This Instructional Guide believes that the classroom teachers, as professional individuals, can make the most authentic and reliable judgment about each learner’s learning needs and the learning experiences to be provided to propel the learners in the learning continuum.

With these beliefs and principles as the background, the following are the purposes of this document:

- i. Facilitate learners acquire language skills and competencies using literature as a medium.
- ii. Strengthen blended learning, including flipped classroom with multimedia, digital pedagogies and ICT devices and websites as tools to share the responsibility of learning amongst the learners, teachers, the parents and other stakeholders.
- iii. Facilitate the use of Continuous Formative Assessment for learning using diverse appropriate assessment techniques and tools commensurate with individual differences in learning, and gather evidence to guide planning of educational programmes and activities for learners.
- iv. Promote inclusive learning through the blended learning which facilitates learning anywhere, any time with the learner being responsible for the learning.
- v. Provide suggestive means of teaching language skills by building interrelationship among, and through, the integration of the four strands of the curriculum.
- vi. Help teachers assume the roles of facilitator, guide, motivator and evaluator.
- vii. Guide teachers, parents and other stakeholders in helping learners achieve their potential.
- viii. Empower teachers to design their own ‘course of study’ or ‘class curriculum’ for their students in line with the National School Curriculum Framework.
- ix. Enhance sharing the burden responsibility and accountability for learning amongst the stakeholders, including the learners themselves.

In this age of advanced communication and information technology, contents are widely available from a number of sources, therefore, the contents of the curriculum have been kept flexible enough for teachers to select, structure and sequence them to best suit the learners need while maintaining coherence and consistency. In other words, while the contents of the curriculum are negotiable, the competencies and objectives are not. While, teachers may have access to number of materials, it should be kept in mind that the teaching and learning should be focused on achieving the competencies rather than ‘covering of the syllabus’. The teaching learning materials should be used as means to create a learning environment that is competency-based where the learners need to master the skills presented to them. While designing lesson plans and teaching learning activities, teachers need to ensure that the materials are relevant and appropriate for the given task.

The assessment should be competency-based wherein the teachers should assess the learners' mastery of the skills stated as competencies and objectives for each class. Teachers should use appropriate assessment tools and techniques depending on the nature of the learning experiences. The learners should be clearly informed about the success criteria, the areas of assessment and the tools to be used so that they know exactly what tasks are to be performed or expected of them. In the process of the performance, the teacher should continuously provide feedback and, if necessary, modify instructions. Efforts have to be made to ensure that every learner has mastered the skills.

STRAND: TIME AND SPACE

1. Theme: The Earth's Grid

A system of lines is used to find the location of any place on the surface of the Earth is commonly called a grid system. It is made up of two sets of lines that cross each other. One set of lines of latitude that runs in an east-west direction. The other set of lines of longitude that runs in a north-south direction. Although these are only imaginary lines encircling the Earth, they can be drawn on globes and maps as if they actually existed.

1.1 Competency

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

1.2 Learning Objectives

- i. Discuss the solar system.
- ii. Explain the movements of Earth.
- iii. State the importance of latitudes and longitudes.
- iv. Compare latitude and longitude.
- v. Calculate time using longitudes.
- vi. Locate features using latitudes and longitudes.
- vii. Distinguish between weather and climate.
- viii. Demonstrate the use of weather instruments.

1.3 Learning Experiences

Learning Experiences such as project-based learning, inquiry-based learning, guest speaker, cooperative learning, debate, brainstorming, stimulations are suggestive and may use pedagogies that are relevant in teaching learning process.

- a. Use relevant video clips or illustrations to revise solar system or use the link <https://www.britannica.com/science/solar-system> to explore more information about it.
- b. Ask diverse questions to check prior knowledge on the motions of the earth and its effects.
- c. Provide a Power Point presentation or use <https://youtu.be/l64YwNI1wr0> to discuss the motions of earth and its significance.
- d. Demonstrate the location of places using lines of latitude and longitude on the earth using globes or maps or <https://youtu.be/M2wL0IKF8ic> to understand the significance of latitude and longitude

- e. Demonstrate steps to calculate time using longitudes or use <https://youtu.be/lI1a-4ugjSw> to learn the process of time calculation.
- f. Use <https://youtu.be/6Aigcv7UnTU> or any other relevant materials to discuss the differences between weather and climate.
- g. Using internet, students in groups explore the uses of weather instruments. Or use <https://youtu.be/wMJmUAOpsg8> to explore the types of weather instrument and uses.

Reflection Questions:

1. What would have happened if there were no parallel lines of latitude and longitude on the globe?
2. Why do longitude lines converge and latitudes do not?

1.4 Assessment

Use assessment tool such as rubrics, checklist, rating scale, anecdotal record, quiz, question-answer, muddiest point, 3-2-1 paper, running record or any other relevant tools to assess student's task.

1.5 Resources

Suggestive URL:

- <https://solarsystem.nasa.gov> (solar system)
- <http://www.ketteringschools.org/userfiles/1375/classes/13956/latitudeandlongitude.pdf>
- (latitude and longitude)
- <https://youtu.be/0qfJdgPCTc> (calculating time)
- <https://youtu.be/YORm7xbIBTs> (Time zone)
- <https://youtu.be/-j-SWKtWEcU> (Time zones)
- <https://youtu.be/FEKFRV29Sk4> (latitude, Longitude & coordinates)
- <https://youtu.be/vUXhz3iZG0w> (latitudes, longitudes)
- https://youtu.be/_fANLICuYB8 (weather vs Climate)
- <https://youtu.be/ZIR18eTKyvk> (Weather tools)
- <https://youtu.be/bjal-ozKSLQ> (Rotation & Revolution of earth)

STRAND – TIME AND SPACE

2. Theme: Map Reading and Interpretation

A map is a portion or part of the features of the Earth's surface drawn to scale on a plane surface such as paper, card, plastic, cloth or some other material. Or a map is a representation on any plane surface of the features of part or portion of the Earth's surface drawn to scale.

Five essential elements of a map are:

- (i) Title – This is used to tell us what the map is about
- (ii) A key – This is used to identify and interpret the signs and symbols used on that map
- (iii) A margin – This is used to bound the area shown by the map
- (iv) North direction – To indicate the north direction on a map
- (v) Scale – To show the relationship between the distance on that map and that of the ground.

2.1 Competency

Examine the importance of map reading and interpretation skills to demonstrate spatial reasoning.

2.2 Learning Objectives

- i. Explain the concept of map.
- ii. Discuss essential properties of map.
- iii. Explain different types of maps.
- iv. Interpret different maps.
- v. Develop a map using QGIS.

2.3 Learning Experiences

Use any of the suggestive strategies: concept mapping, lecture cum demonstration, inquiry-based learning, anticipation guide, project-based learning, cooperative learning, mini-lectures, brainstorming exercises, presentations, questioning, learning by doing.

- a. Check prior knowledge about map and list their ideas on a board or chart. Use power point or https://youtu.be/_xpN6K6Mmt0 to explain types of maps.
- b. Use Expert and Home group to discuss and explain the essential properties of map. Use <https://youtu.be/7Bt1UgwEUIQ> to explore the properties of map.
- c. Demonstrate or use <https://youtu.be/dm1iFRqC31I> to explain the steps of using QGIS to develop a map. (Dzongkhags or rivers)

Reflection questions:

1. Why is map reading and interpretation indispensable in geography?
2. How does map reading and interpretation help in making decisions in one's life?

2.2 Assessment

Suggestive assessment tools are: question and answer, rubrics, rating scale, quiz, checklist or any other relevant assessment tools.

2.3 Resources

Suggestive URL:

- <https://youtu.be/dwWrrjFgH3o> (types of maps)
- <https://www.mometrix.com/academy/5-elements-of-any-map/> (Elements of map)
- https://youtu.be/Eg4_duqH5Q4 (How to use of QGIS)
- <https://qgis.org/en/site/forusers/download.html> (URL to download QGIS software)

STRAND: PHYSICAL ENVIRONMENT

3. Theme: Land Formation Processes

The geomorphic processes of weathering, erosion and deposition create a large variety of landscapes and landforms. The processes that form different landscapes and create their unique landforms are largely determined by climate and geology.

3.1 Competency

Analyse the geomorphic processes to infer the significance of land features and its relation to culture.

3.2 Learning Objectives

- i. Discuss the river systems.
- ii. Explain the basic processes of land formation.
- iii. Describe different types of landforms
- iv. Relate the significance of land features to our tradition and culture.
- v. Locate major rivers on an outline map of Bhutan.

3.3 Learning Experiences

Use any suggestive strategies: inquiry- based learning, field exploration, project-based learning and community-centred learning environment or any other relevant strategies in teaching learning.

- a. Use <https://youtu.be/5FwR8FGasZk> to explore about the river system and prepare notes. In groups, students draw the diagram of drainage basin and present it.
- b. Use https://youtu.be/TQ3giQ3J_t4 to know the names of different landforms and factors responsible for its formation.
- c. Carry out a field visit to a nearby place to observe the impact of a river or stream on the landform and the community. Recommend suggestive measure to conserve and overcome environmental problems. Or arrange a student-community learning programme to discuss the impact of landforms on the livelihood, and the importance of resources.
- d. Use Google Earth and explore the drainage basin and drainage pattern of a place.
- e. Use QGIS software and develop a map showing the river system of Bhutan and interpret it.

Reflection Questions

1. Identify and describe a landform or landforms in the locality with spiritual and religious importance.
2. In what ways do landforms affect human and animal life on Earth?

7.4 Assessment

Suggestive assessment tools to assess students work are: journal, question and answer, writing report, rubrics and checklist or any other relevant tools.

7.5 Resources

Suggestive URL:

- <https://www.geographypods.com/21-river-features.html> (drainage basin and its characteristics)
- https://www.nchm.gov.bt/attachment/ckfinder/userfiles/files/River%20Flow%20Status%20_of%20Bhutan%202017%20%20.pdf (River Flow status of Bhutan)
- <https://www.slideshare.net/yaryalitsa/powerpoint-landforms-60> (types of land form images)
- https://youtu.be/wQnCyCAF_BY (Process and types of landform)
- <https://youtu.be/iURNoewVNQ> (Bhutan River Basin Management plan)
- https://youtu.be/BsqKTJtK_vw (landforms)
- https://youtu.be/TQ3giQ3J_t4 (river system & its landforms)
- <https://youtu.be/fdMmzY7XjFo> (stages of river)
- <https://youtu.be/7kgQNRQjIUU> (what is river?)
- <https://www.geo41.com/rivers-igcse#river-landforms> (river landforms)
- <https://www.geo41.com/rivers-igcse#river-profile> (river profile)

STRAND – PHYSICAL ENVIRONMENT

4. Theme: The Earth's Atmosphere

The air surrounding the Earth is called the atmosphere. The atmosphere is an integral part of our Earth. It is connected with the Earth due to the gravitational force of the Earth. It helps in stopping the ultra violet rays harmful for the life and to maintain suitable temperature necessary for life on the Earth.

4.1 Competency

Explore the impact of the atmosphere on the people and environment to understand its significance.

4.2 Learning Objectives

- i. Explain the structure of the atmosphere.
- ii. Explore the significance of atmosphere.
- iii. Discuss human activities and its impact on the atmosphere.

4.3 Learning Experiences

Use any of the suggestive strategies: demonstration and practice, inquiry-based learning, anticipation guide field exploration, project-based learning, cooperative learning, mini-lectures, brainstorming exercises, presentations, games, questioning, learning by doing and community-centered learning environment.

- a. Use power point, diagrams or <https://youtu.be/KXf39bQH6iE> to explore and understand the layers of the atmosphere. Students draw a diagram showing the layers of atmosphere.
- b. Use anticipation Guide to explore the significance of the atmosphere. Use <https://youtu.be/s6N6af3dpFg> or any other related materials to explore the significance of the atmosphere. Students note down the significance of the atmosphere.
- c. Use the link: <https://youtu.be/FhiUwclni2Q> to explore and list different human activities and its impact on atmosphere. Use *All Write Round Robin* strategy to discuss and explore other human activities and its impact.

Reflection Questions

1. What would happen if there is no atmosphere around the Earth?

4.4 Assessment

Suggestive assessment tools to assess students work are: question and answer, rubrics, rating scale, quiz, checklist or any other relevant tools.

4.5 Resources

Suggestive URL:

- https://youtu.be/Y0AOg_fPkog (layers of atmosphere)
- <https://youtu.be/DftEDVzGnMg> (layers of atmosphere)
- <https://climate.nasa.gov/causes/> (Human activities & its impact)
- <https://youtu.be/FhiUwclni2Q> (Human activities & its impact)
- <https://youtu.be/PZKjUUDeGpI> (Human activities & its impact)

STRAND: PEOPLE AND THE ENVIRONMENT

5. Theme: Resources and Economic Development

Everything material in our culture ultimately comes from natural resources. For example, coal, oil, soil, water, land, minerals, forests and timber, and air we breathe. The role natural resources has on earth is imperative. That is why it is so important for us to all have some accountability and why we need to protect and respect our environment.

5.1 Competency

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

5.2 Learning Objectives

- i. Explain the concept and types of resources.
- ii. Discuss types of minerals found in Bhutan.
- iii. Describe different types of rocks.
- iv. Explain the processes of rock formation (rock cycle).
- v. Analyse the sustainable use of resources.

5.3 Learning Experiences

Question and answer, project-based learning, field trip, group discussion, inquiry-based learning, inductive, deductive, mind mapping, give one get one and project work are some suggestive strategies.

- a. Use mind map or concept mapping to introduce the concept of resources and its type.
- b. Use, **Give one Get one** strategy to explore the minerals found in Bhutan.
- c. Use <https://www.learner.org/wpcontent/interactive/rockcycle/rockdiagram/> or any relevant diagrams or video clips to explore the formation of rocks.
- d. Students collect different rock samples found around the school campus and classify them based on their properties.
- e. Students in groups discuss the differences between rocks and minerals. Groups share their findings to the whole class. Use <https://byjus.com/chemistry/rocks-and-minerals/> to explore more information about rocks and minerals.
- f. In groups, students discuss how minerals contribute towards socio-economic development of our country and prepare a PowerPoint presentation.

- g. Using internet or any other relevant materials, explore the impacts of excessive use of natural resources (rocks & minerals) and suggest ways to minimise such issues.
- h. Using QGIS software, develop a mineral map of Bhutan.

Reflection Questions

1. How do humans affect the rock cycle?
2. What would happen if the natural resources are exploited to the maximum?

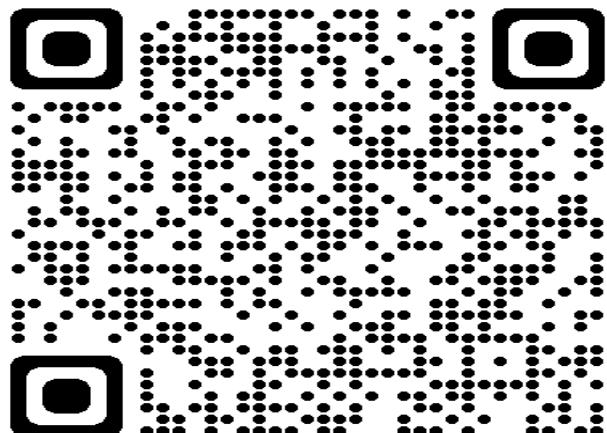
5.4 Assessment

Assessment tools such as rubrics, checklist, rating scale, anecdotal record, quiz, question- answer, muddiest point, 3-2-1 paper or any other relevant tools for assessing students' performance.

5.5 Resources

Suggestive URL:

- <https://byjus.com/chemistry/types-of-minerals/> (types of minerals and its classification)
- <https://kuenselonline.com/khothakpa-gypsum-mine-sharing-benefits-with-shumar-community/> (Kothakpa Gypsum Mining, Pema Gatshel)
- <https://www.britannica.com/video/73006/plates-margins-plate-Earth-surface-vents-magma> (Earth's crust and Igneous rock formation)
- https://en.wikipedia.org/wiki/Environmental_effects_of_mining (effects of mining)
- <https://youtu.be/jP1qbwSGmNs> (Rock cycle)
- <https://youtu.be/7CnjoCu1154> (Rock types and its formation)
- <https://youtu.be/3fYIKUUyj4M> (gypsum extraction and uses)
- <https://youtu.be/wMg7f5g6l-o> (types of rocks and minerals, and its uses)
- <https://youtu.be/8a7p1NFn64s> (Brief introduction to minerals)
- https://youtu.be/32NG9aeZ7_c (identifying minerals)
- https://youtu.be/ZkHp_nnU9DY (minerals & rocks)
- <https://youtu.be/cyBLmW5k06c> (How to identify rocks)
- https://web.ccsu.edu/faculty/kyem/GEOG473/7thWeek/Mineral_resources.htm (minerals, types & interventions)



(QR code for rock cycle)

STRAND: PEOPLE AND THE ENVIRONMENT

6. Theme: Population and Settlement

Population Geography is a study of demographic phenomena which includes natality, morality, growth rates etc., through both space and time. Increase or decrease in population indicates population distribution and growth. Settlement is a place where people live and interact through activities such as agriculture, trade and entertainment.

6.1 Competency

Analyse the natural characteristics of a place and relate their influence on culture and identity.

6.2 Learning Objectives

- i. Explain human population.
- ii. Explain the change in population.
- iii. Discuss factors affecting population distribution.
- iv. Describe the concept and types of settlement.
- v. Examine the influence of physical features on culture and identity.

6.3 Learning Experiences

Use any strategies such as cooperative learning, mini-lectures (guest speaker), resource based learning, brainstorming exercise, presentations, corners, games, questioning, learning by doing or any other relevant strategies for teaching learning process.

- a. Use think-pair-share to explain human population.
- b. Use **corners** or any other relevant strategies to explore factors affecting population distribution.
- c. Use KWLH to explore the concept of settlement and its type. Use <https://youtu.be/nKQ0yxkDJLo> to explore more information about settlement.
- d. Students share about their place of origin (Dzongkhag/Gewog/Village, language, dress) to understand and relate the cultural diversity.
- e. Students enquire from their family members about the location of their village relating to altitude, climate and topography, and describe how physical features have influenced their place of origin. Prepare MS PowerPoint presentation on their findings.
- f. Using relevant materials such as video clips, PowerPoint and other reading materials on cultural diversity, students write a short paragraph on:
 - How climate, topography, and natural resources influence culture and identity?
 - How topographic features, natural resources and climate influence population distribution and cultural development?

Reflection Questions

1. How does the Earth's surface affect the culture of a place?
2. How do landforms and climate influence culture of a place?

6.4 Assessment

Use checklist, rubrics, questioning method, 3-2-1 paper, rating scale to assess students' learning.

6.5 Resources

Suggestive URL:

- <https://wonderopolis.org/wonder/how-does-earths-surface-affect-culture> (cultural diversity)
- <http://www.anderson.k12.ky.us/Downloads/5themes.pdf>
- (location, place human/environment interaction)
- <https://youtu.be/KXCI1kPjzFM> (how geography defines culture)
- <https://www.socialstudies.com/pdf/FH411VTG.pdf> (How to study culture)
- <https://youtu.be/gyNZQQGX5s4> (factors for population change)
- <https://youtu.be/3dRaNob9Fmo> (changing Population)
- <https://youtu.be/b-iETXFRIk> (settlement pattern and its function)
- <https://youtu.be/05yd9bw5PB8> (settlement)

STRAND: PEOPLE AND THE ENVIRONMENT

7. Theme: Hazards and Disasters

A hazard is a natural process or phenomenon that may pose negative impacts on the economy, society, and ecology, including both natural factors and human factors that are associated with the natural ones. Hazards are the origins of disasters. Disasters are violent events that are outside the control of humans. They are caused by the forces of nature and may result in loss of life, injury, and damage to property. There are many types of natural disaster, including avalanche, drought, earthquake, flood, volcanic eruption, storm and wildfire.

7.1 Competency

Use indigenous and scientific knowledge to understand the measures to manage and address disasters.

7.2 Learning Objectives

- i. Discuss potential hazards and disasters in Bhutan.
- ii. Suggest measures to reduce disasters.
- iii. Exhibit life-saving skills during disaster.
- iv. Design evacuation map for disaster risk reduction and preparedness.

7.3 Learning Experiences

Use any of the strategies such as: Cooperative learning, mini-lectures, guest speaker, debates, brainstorming exercises, presentations, games, Questioning, learning by doing or relevant strategies in teaching learning process.

- a. Use <https://pediaa.com/difference-between-hazard-and-disaster/> to understand the difference between hazards and disasters. Students prepare notes on hazards and disasters and share the points.
- b. Using images and video clips, discuss the potential hazards and disasters. Use 1 Minute paper strategy and list potential hazards in the community or in Bhutan.
- c. Using relevant resources, students explore basic information about earthquake, flood, wind storm, landslide, GLOF, fire and prepare notes.
- d. Organise a debate on ‘Natural disaster is more common than human induced disaster in our country’.
- e. Use ICT and other resources to develop a classroom evacuation map. Display the work.
- f. Conduct a hazard hunting exercise in the class. Prepare a list of hazardous items. Reposition the
- g. hazardous items to reduce the impact of disasters. Carry out a similar activity at home or in hostel.

- h. Organise a simulation or mock drill exercise on any of the disasters (earthquake, fire, wind storm, lightning and landslide) in collaboration with School Disaster Focal Person for sensitization and preparedness.

Reflection Questions

1. How would hazard lead to disaster?
2. What are some the problems of disaster preparedness? Suggest measures to overcome these problems.

5.4 Assessment

Assess student's work using appropriate tools such as rubrics, checklist, rating scale, anecdotal record, 3-2-1 paper, anticipation guide, concept mapping or any other relevant tools for assessment.

5.5 Resources

Suggestive URL:

- https://www.unescap.org/sites/default/files/Bhutan_2.pdf (types of hazards and disaster in Bhutan)
- <https://www.ddm.gov.bt/> (department of disaster management)
- <https://youtu.be/ybjSHBAO6k0> (natural hazards and disasters)
- <https://youtu.be/1bmOmozR7ZQ> (hazards)
- <https://youtu.be/h3l94aZSbGM> (Earthquake Hazards)
- <https://youtu.be/FowixCmKNKs> (causes and effects of earthquake)
- <https://youtu.be/USLHmwvpjX8> (Education for disaster preparedness)
- <https://youtu.be/7YmHvh99kUQ> (Disaster Preparedness & Risk Reduction)
- https://www.preventionweb.net/files/2743_Introdp.pdf (introduction to disaster preparedness)
- <https://www.nap.edu/read/1840/chapter/7#30> (preparedness for emergency)
- <https://youtu.be/gFphEEAxQLA> (Earthquake safety tips)
- <https://clarkscience8.weebly.com/patterns-of-earthquakes-and-volcanoes.html> (Pattern of earthquake and volcano)
- <https://www.britannica.com/science/earthquake-geology> (Earthquake)
- <https://www.britannica.com/science/volcano> (Volcano)

STRAND: PEOPLE AND THE ENVIRONMENT

8. Theme: Human Environment Interaction

Humans shape the landscape through their interaction with the land, which has both positive and negative effects on the environment. As an example of the human-environment interaction, think about how people living in cold climates have often mined coal or drilled for natural gas in order to heat their homes.

8.1 Competency

Analyse the interaction between human and environment to understand the ecosystem for human wellbeing.

8.2 Learning Objectives

- i. Describe ecosystem and food chain.
- ii. Explain human interaction with the environment.
- iii. State ways to combat environmental problems.

8.3 Learning Experiences

Strategies such as problem-based learning, project-based learning, inquiry-based learning, 7 E's Learning Model, KWLH are suggestive strategies.

7Es Model

- a. Brainstorm on biotic & abiotic components to understand their relationship in the ecosystem.
- b. In groups, students discuss and come up with various environmental pollutions.
- c. Using ICT, students investigate the causes and effects of pollution. Students prepare MS PowerPoint presentation.
- d. Groups present their findings to the class followed by question answer session.
- e. Students suggest measures to reduce environmental pollution. Design awareness posters to sensitize the school community.
- f. Use checklist or rating scale or rubrics to assess the progress and presentation of the task.
- g. Students identify a polluted area in the school or community and carryout cleaning campaign to create awareness on waste management.

KWLH Strategy

- a. Students share their ideas on the components of the environment (biotic & abiotic) and their relationship in ecosystem.
- b. Students explore types of pollution faced by different countries using ICT or other related materials to find out the cause and effect along with measures to combat environmental pollution.
- c. Students prepare a list of causes, effects and measures of environmental pollution learnt from internet sources.
- d. Students use internet facilities to explore further on environmental pollution and measures, and use this knowledge of pollution control to resolve problems in their community.

Reflection Questions

1. What are the primary and secondary pollutants?
2. Assess the positive and negative impact of human on the environment.

8.4 Assessment

Use rubrics, checklist, rating scale, quiz, question- answer or any other relevant tools for assessing students' learning.

8.5 Resources

Suggestive URL:

- <http://www.sgtbkhalsadu.ac.in/colleges/tutorial/112704042020162813.pdf> (Types of pollution, causes, effects and measures)
- <https://youtu.be/OqHp03RRTDs> (types of pollution and its causes)
- <https://fieldstudies.org/wp-content/uploads/2019/03/Bhutan-Syllabus-SFS-3050-Land-Use-Natural-Resources-and-Conservation.pdf> (natural resources of Bhutan)
- <https://www.adb.org/sites/default/files/institutional-document/32180/bhu-cea-nov2004.pdf> (Country environmental Analysis, role of natural resources for the economy)
- http://d2ouvy59p0dg6k.cloudfront.net/downloads/water_in_the_economies_policy_brief_for_government.pdf (ppt on water resources)
- https://unctad.org/system/files/official-document/aldc2012_Bhutan.pdf (Bhutan's experience in socio-economic development-UNCTAD)
- <https://earthyb.com/blog/environmental-problems-solutions/> (Environmental problems & solutions)
- <https://youtu.be/HvvDoDRO8FY> (Human- Environment)

Instructional Hours and Weighting Based on Competency

SI No.	Strand	Competencies	Weighting (%)	Instructional time (minutes)
1	Time and space	Assess the significance of latitudes and longitudes to infer the weather and climate of a place.	15	720
		Examine the importance of map reading and interpretation skills to demonstrate spatial reasoning.	15	720
2.	People and environment	Evaluate the importance of natural resources for balanced socio-economic development.	10	480
		Analyse the natural characteristics of a place and relate their influence on culture and identity.	10	480
		Use indigenous and scientific knowledge to understand measures to manage and address disasters.	10	480
		Analyse the interaction between human and environment to understand the ecosystem for human wellbeing.	10	480
		Explore the impact of the atmosphere on people and environment to understand its significance.	10	480
3.	Physical Environment	Analyse the geomorphological processes to infer the significance of land features and its relation to culture.	20	960
	Total		100	4800

STRAND – TIME AND SPACE**1. Theme: The Earth's Grid**

A system of lines is used to find the location of any place on the surface of the Earth. It is commonly called a grid system. It is made up of two sets of lines that cross each other. One set of lines of latitude that runs in an east-west direction. The other set of lines of longitude that runs in a north-south direction. Although these are only imaginary lines encircling the Earth, they can be drawn on globes and maps as if they actually existed.

1.1 Competency

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

1.2 Learning Objectives

- i. Describe the importance of latitudes and longitudes.
- ii. Identify latitudes and longitudes of places on a map.
- iii. Discuss the factors affecting the climate.
- iv. Calculate time and longitudes.
- v. Explain the world heat zones and time zones.

1.3 Learning Experiences

Use any of the suggestive teaching methods: KWL, think-Pair-Share, fish bowl, anticipation guide, resource-based learning, activity-based learning, demonstration, problem-based learning, cooperative learning, inquiry based learning and experiential learning or may use any other relevant strategies for teaching learning process.

- a. Students observe the lines of latitude and longitude on the world map, discuss why these lines are important and present their findings to the class.
- b. Use <https://youtu.be/gsGLc-BvWZY> to practice how to locate places on a map.
- c. Explore various sources to discuss important lines of latitude and longitude to understand its significance.
- d. Use <https://www.gps-coordinates.net/> to explore and find out direction, location and altitude of different places.
- e. Use <https://youtu.be/I2eZR15Q4G0> to explore the factors that affect the climate of a place.
- f. Demonstrate procedures to calculate time. Use <https://youtu.be/I2eZR15Q4G0> to understand International Standard time/UTC, Standard time and Local time.

- g. Use <https://youtu.be/0qfJdgPCTc> to demonstrate the procedures to calculate the longitude of a place.

Reflection Questions

1. How does longitude affect the time of a place?
2. Among the various factors affecting climate of Bhutan, which is the most dominant one and why?

1.4 Assessment

Use checklist, rubrics, rating scale, question-answer, think pair share, muddiest point, 3-2-1 paper, 1-minute paper, feedback, etc. for assessing students' task.

1.5 Resources

Suggestive URL:

- o <https://www.britannica.com/science/latitude> (latitude and longitude)
- o <https://youtu.be/HvCvANs7O7k> (importance of latitudes and longitudes)
- o <https://byjus.com/questions/give-the-importance-of-longitudes-and-latitudes/#:~:text=The%20lines%20of%20longitude%20and,of%20any%20place%20on%20earth>. (importance of latitude and longitude)
- o <https://askinglot.com/what-is-importance-of-latitude-and-latitude>. (Importance of latitudes and longitude)
- o <https://www.thoughtco.com/equator-hemisphere-tropic-of-cancer-capricorn-1435089> (important lines of latitudes and longitude)
- o <https://askinglot.com/open-detail/375099> (lines of latitudes and longitude)
- o <https://youtu.be/OnPuCgkc77E> (how to add and subtract hours and minutes)
- o <https://youtu.be/lI1a-4ugjSw> (steps to calculate time)

STRAND – TIME AND SPACE

2. Theme – Map Reading & Interpretation

A map is a portion or part of the features of the earth's surface drawn to scale on a plane surface such as paper, card, plastic, cloth or some other material. Or a map is a representation on any plane surface of the features of part or portion of the earth's surface drawn to scale.

A map must have the five essential elements:

- (vi) A title – This is used to tell us what the map is about
- (vii) A key – This is used to identify and interpret the signs and symbols used on that map
- (viii) A margin – This is used to bound the area shown by the map
- (ix) North direction – To indicate the north direction on a map
- (x) Scale – To show the relationship between the distance on that map and that on the ground.

2.1 Competency

Examine the importance of map reading skills and interpretation to demonstrate spatial reasoning skills.

2.2 Learning Objectives

- I.Explain types of scale and conversion.
- II.Interpret the topographical maps.
- III.Illustrate and interpret relief features from contour map.
- IV.Design a map using QGIS.

2.3 Learning Experiences

Use any of the suggestive teaching methods: KWL, think-Pair-Share, fish bowl, anticipation guide, resource-based learning, activity-based learning, demonstration, problem-based learning, cooperative learning, inquiry based learning and experiential learning, work sheet-based assessment or may use any other relevant strategies for teaching learning process.

- a. Check prior knowledge of student about map and list their ideas on a board or chart.
Use PowerPoint or URL: <https://youtu.be/mFiQjhrJCKs> to discuss and explain scale and conversion of scale.
- b. Use <https://youtu.be/zqPMYGDxCr0> or available resources to interpret topographical map.
- c. Distribute a copy of topographic map to discuss and interpret topographic map (Physical and human made features, cultivated land, settlement) with their shoulder partner and share it to the class.
- d. Demonstrate the steps of using QGIS and develop a Dzongkhag river map. (River map of Bhutan)

Reflection Question

1. What are the essential elements of map reading?
2. What are some of the benefits of possessing map reading skills in a person?

2.4 Assessment

Use checklist, rubrics, rating scale, question-answer, think pair share, muddiest point, 3-2-1 paper, 1-minute paper, feedback, etc. for assessing students' task.

2.5 Resources

Suggestive URL links:

- <https://youtu.be/1fWje3ee0E8> (Map scale: Refractive fraction)
- <https://youtu.be/N0uwalsS1ag> (Reading 6 grid reference)
- <https://youtu.be/QIrELLSWWB8> (Grid reference)
- <https://youtu.be/dwWrriFgH3o> (types of map)
- <https://youtu.be/bENEygui4jo> (topographical map skills)
- https://youtu.be/Eg4_dugH5Q4 (Use of QGIS)
- <https://youtu.be/FqJrmnQ9sBs> (How to read maps-scale& distance)
- <https://youtu.be/SMuGzHMFuyE> (How to draw contour lines)
- <https://youtu.be/9w-KOodmiZc> (Cross section map work)
- <https://youtu.be/0cF0ovA3FtY> (Interpretation of topographical Map)
- <https://youtu.be/Spi-7sT2Y5E> (how to find grid figure)
- <https://qgis.org/en/site/forusers/download.html> (URL to download QGIS software)
- https://www.google.com/search?q=topographic+map&rlz=1C1AVFC_enBT851BT853&source=lnms&tbo=isch&sa=X&ved=2ahUKEwjpqa392tnuAhXPc30KHQfhATsQ_AUoAXoECAIQAw&biw=1088&bih=504&dpr=1.25 (Various topographic map)

STRAND – PHYSICAL ENVIRONMENT

3. Theme: Land formation Processes

The movement of water is significant for understanding the environment. Rivers shape our landscape and it is important to understand what causes flooding and what the effects of running water are.

3.1 Competency

Analyse the geomorphological processes to infer the significance of land features and its relation to culture.

3.2 Learning Objectives

- i. Discuss stages of river.
- ii. Describe the landforms at different stages of river.

3.3 Learning Experiences

Use any of the methods: demonstration and practice, inquiry-based learning, field exploration, project-based learning, cooperative learning, mini-lectures, brainstorming exercises, presentations, games, the Socratic questioning, learning by doing and community-centred learning environment.

- a. Use https://youtu.be/8JM71mcw_LI to discuss and understand the stages of river.
- b. In groups, students prepare PowerPoint presentation on the work of river at different stages using library, IT laboratory or any other convenient sources. Make a presentation.
- c. Use <https://www.geo41.com/rivers-igcse#river-landforms> or any other relevant resources to explore and discuss the landforms formed by the river. In groups, make a model of any feature formed by rivers.
- d. Identify different landforms in the locality to carry out a project work to understand its formation and significance.

Reflection Questions

1. What are the benefits of the landforms for people and animals?
2. Which landform would you prefer to live on and why?

3.4 Assessment

Use checklist, rubrics, rating scale, 3-2-1 paper, 1-minute paper, muddiest point etc. or any other relevant assessment tools to assess the student's task.

3.5 Resources

Suggestive URL:

- <https://youtu.be/fdMmzY7XjFo> (Stages of river and landform)
- <https://youtu.be/wi0fT3TCIGs> (Meander and Ox Bow Lake)
- <https://youtu.be/A47ythEcz74> (Delta formation)
- <https://youtu.be/Y6JnCSWqOto> (Levees Formation)
- <https://youtu.be/JqFhmZc5Wis> (Landforms forms by erosion and deposition).
- <https://www.quora.com/What-is-the-work-of-a-river> (work of a river)
- <https://www.geo41.com/rivers-igcse#river-profile> (river profile)
- <https://www.geo41.com/rivers-igcse#drainage-basins-igcse> (drainage basins)
- <https://www.geo41.com/rivers-igcse#river-processes> (river processes)

STRAND - PHYSICAL ENVIRONMENT

4. Theme: The Earth's Atmosphere

The air surrounding the Earth is called the atmosphere. The atmosphere is an integral part of our Earth. It is connected with the earth due to the gravitational force of the earth. It helps in stopping the ultra violet rays harmful for the life and maintain the suitable temperature necessary for life on the Earth.

4.1 Competency

Examine the structure and composition of atmosphere to understand its significance to the Earth.

4.2 Learning Objectives

- i. Describe the structure and composition of the atmosphere.
- ii. Explain the significance of atmosphere.

4.3 Learning Experiences

Use any of the methods: demonstration and practice, inquiry based learning, field exploration, project based learning, cooperative learning, mini-lectures, brainstorming exercises, presentations, games, questioning, learning by doing and community-centred learning environment.

- Brainstorm on the structure of atmosphere. Use <https://youtu.be/s6N6af3dpFg> to explore the structure and significance of the atmosphere.
- Use various sources (Video clips, PPT, Internet, etc.) to explore about the composition of atmosphere. Students prepare PowerPoint presentation and share their findings.

Reflection Questions

1. Which atmospheric layer is the most important and why?
2. What would happen to the Earth if it was without atmosphere?

4.4 Assessment

Use assessment tool such as rubrics, checklist, rating scale, anecdotal record, quiz, and other relevant assessment tools and techniques can be used to assess student's task.

8.5 Resources

Suggestive URL:

- <https://youtu.be/ODIJgFAT6RA> (Composition of atmosphere)
- <https://www.clearias.com/composition-structure-earth-atmosphere/> (atmosphere)

- <https://youtu.be/7XkH6NnUpFQ> (composition & significance of atmosphere)
- <https://courses.lumenlearning.com/geophysical/chapter/significance-of-the-atmosphere/> (significance of atmosphere)
- <https://byjus.com/questions/what-is-the-importance-of-the-atmosphere/#:~:text=The%20atmosphere%20is%20an%20important,atmosphere%20is%20essential%20for%20life>. (Importance of atmosphere)

STRAND: PEOPLE AND THE ENVIRONMENT

5. Theme: Resources and Economic Development

Everything material in our culture ultimately comes from natural resources. For example, coal, oil, soil, water, land, minerals, forests and timber, and air we breathe. The role natural resources has on earth is imperative indeed. That is why it's so important for us to all have some accountability and why we need to protect and respect our environment.

5.1 Competency

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

5.2 Learning Objectives

- i. Describe soil and its properties.
- ii. Explain soil forming factors.
- iii. Classify soils.
- iv. Explain natural vegetation.
- v. Explain the types and significance of natural vegetation.
- vi. Explain the causes of change in population.
- vii. Analyze the importance of addressing population change.
- viii. Classify the renewable and non-renewable resources.
- ix. Describe the importance of natural resources.

5.3 Learning Experiences

Suggestive strategies are group discussion, lecture cum demonstration, presentation, 7Es model, inquiry-based learning, field exploration, project-based learning and community- centred learning environment.

- i. Use <https://youtu.be/ko-GJDbnXE8> to understand about the properties of soil. In groups collect soil samples and classify the soil based on their properties.
- ii. Use <https://youtu.be/IgoLzst6jw0> or any other resources to explore about the soil forming factors. Assign topic to each team for discussion. Prepare PowerPoint on assigned topic and present to other teams.
- iii. Assign project work on soil profile to comprehend the layers of soil.
- iv. Use <https://youtu.be/cNx4czkFLbA> to understand the physical and chemical properties of soil.
- v. Use <https://youtu.be/xne9JI9TUUE> to improvise a simple pH testing kit to test the chemical properties of soil found around their place.
- vi. Brainstorm on the natural vegetation to understand student's prior knowledge. Use any relevant teaching learning materials to discuss on natural vegetation and

- its significance.
- vii. Probe students on how the natural resources (soil, vegetation, water) influence the distribution of population.
 - viii. Brainstorm on the human population as resource for socio-economic development. Use <https://www.economicsdiscussion.net/economic-development/population-growth-and-economic-development-a-close-view/11808> to explore on the importance of population for economic growth.
 - ix. Use <https://www.economicsdiscussion.net/population-explosion/14-major-negative-effects-of-population-explosion/4461> to explore the adverse impact of population on socio-economic development.
 - x. Use Fish bowl strategy to discuss about the renewable and non-renewable resources. Use <https://youtu.be/HtI2gnwAEuI> to explore more information about the renewable and non-renewable resources.
 - xi. Use <https://environmentgo.com/12-importance-of-natural-resources/> or any relevant teaching learning materials to list down the importance of natural resources. Discuss in groups and share their findings.

Reflection Questions

1. How does vegetation affect human and animal life?
2. What are the consequences of rapid growth of population for a country? Suggest suitable measures to reduce it.

5.4 Assessment

Suggestive assessment tools to assess students' work are: journal, question and answer, writing report, rubrics, checklist, quiz or use any other relevant tools.

5.5 Resources

Suggestive URL:

- <https://www.worldatlas.com/articles/5-major-types-of-vegetation-in-the-world.html> (vegetation)
- <https://www.bhutan.travel/page/plants-animals> (photo of some flora and fauna in Bhutan)
- <http://www.abhidharmatours.com/attractions-in-bhutan/flora-and-fauna-in-bhutan/> (National parks)
- <https://www.worldometers.info/demographics/bhutan-demographics/#pop> (Bhutan demographic)
- <https://youtu.be/vqtdFacIWf0> (soil profile)

- https://youtu.be/og9A_Apr534 (animation on soil profile and characteristics)
- https://unctad.org/system/files/official-document/aldc2012_Bhutan.pdf (Bhutan's socio-economic development-UNCTAD)
- <https://youtu.be/WYt7xwAzDtU> (soil composition)
- <https://youtu.be/voWgADFhht8> (How is soil formed)
- <https://youtu.be/SXp8Lg0SFPQ> (How to read soil texture triangle)
- https://youtu.be/SL8qCL_fGeM (types of soil)
- <https://youtu.be/wMft5HOXues> (natural vegetation & wildlife)
- <https://youtu.be/44Bc9Eto2Z0> (renewable and non-renewable resources)
- https://www.nrcs.usda.gov/wps/portal/nrcs/detail/wa/soils/?cid=nrcs144p2_036333#:~:text=The%20five%20factors%20are%3A%201,different%20soil%20individual%20will%20form (soil forming factors)

STRAND: PEOPLE AND ENVIRONMENT

6. Theme: Hazards and Disasters

A hazard is a natural process or phenomenon that may pose negative impacts on the economy, society, and ecology, including both natural factors and human factors that are associated with the natural ones. Hazards are the origins of disasters. Disasters are violent events that are outside the control of humans. They are caused by the forces of nature and may result in loss of life, injury, and damage to property. There are many types of natural disaster, including avalanche, drought, earthquake, flood, volcanic eruption, storm and wildfire.

6.1 Competency

Use indigenous and scientific knowledge to understand the measure to manage and address disasters.

6.2 Learning Objectives

- Distinguish between hazards and disasters.
- Differentiate natural hazards from human induced hazards.
- Discuss the causes and effects of disasters.
- Describe the common hazards in Bhutan.
- Suggest measures to mitigate disasters.

6.3 Learning Experiences

Use any of the methods such as cooperative learning, mini-lectures, debates, brainstorming exercises, presentations, games, the Socratic Questioning, learning by doing as to teach the concepts of hazard and disaster.

- a. Use <https://eco-intelligent.com/2017/01/21/hazard-vs-disaster-the-principle-behind-disastermanagement/#:~:text=A%20hazard%20is%20any%20phenomena,all%20hazards%20are%20not%20disasters> to discuss the differences between hazard and disaster. Prepare notes.
- b. Using relevant resources, explore information on disaster (earthquake, flood, wind storm, landslide, GLOF and fire). Prepare PPT on its causes, effects and measures.
- c. Carry out a hazard hunting exercise in the school campus to identify types of hazards in the school and suggest measures to mitigate it.
- d. Prepare posters, video clips to create awareness on prominent hazards in their localities.
- e. Conduct a simulation or role play on any of the disasters (earthquake, fire, wind storm, lightning, landslide, etc.) in consultation with School Disaster Focal Person.
- f. Develop an evacuation map for school or home using ICT skills.
- g. Use ICT skills to develop an individual disaster management plan to be used at home in the event of any disasters.

Reflection Questions

1. What are some of the common human induced hazards in Bhutan? Explain some

- the causes and consequences of such hazards.
2. Are these hazards avoidable? Explain.

6.4 Assessment

Tools such as rubrics, checklist and rating scale are suggested to assess student task or any other relevant tools.

6.5 Resources

Suggestive URL:

- <https://www.toppr.com/ask/search/?query=difference+between+disasters+and+hazards&userId=MzQyNTkw&klass=all> (differences between hazards and disasters)
- <https://www.physio-pedia.com/Disaster Management> (types of disaster and its management)
- <https://restoreyoureconomy.org/main/types-of-disasters/> (types of disasters)
- <https://www.britannica.com/science/earthquake-geology> (earthquake)
- https://www.preventionweb.net/files/74873_finalndrmsndmabutan.pdf (disaster risk management strategy)
- https://www.unescap.org/sites/default/files/Bhutan_2.pdf (Disaster Management in Bhutan)
- <https://youtu.be/BD-kMiaC7O8> (causes & effects of disaster)
- https://www.unescap.org/sites/default/files/Bhutan_2.pdf (hazards and disaster in Bhutan)
- <https://www.ddm.gov.bt/> (department of disaster management)
- <https://youtu.be/ybjSHBAO6k0> (natural hazards and disasters)
- <https://youtu.be/1bmOmozR7ZQ> (hazards)
- <https://youtu.be/h3I94aZSbGM> (Earthquake Hazards)
- <https://youtu.be/FowixCmKNKs> (causes and effects of Earthquake)
- <https://youtu.be/USLHmwvpjX8> (Education for disaster preparedness)
- <https://youtu.be/7YmHvh99kUQ> (Disaster Preparedness & Risk Reduction)
- https://www.preventionweb.net/files/2743_Introdp.pdf (introduction to disaster preparedness)
- <https://www.nap.edu/read/1840/chapter/7#30> (preparedness for emergency)
- <https://youtu.be/gFphEEAxQLA> (Earthquake safety tips)
- <https://clarkscience8.weebly.com/patterns-of-earthquakes-and-volcanoes.html> (earthquake and volcano)
- <https://www.britannica.com/science/earthquake-geology> (Earthquake)
- <https://www.britannica.com/science/volcano> (Volcano)

STRAND: PEOPLE AND THE ENVIRONMENT

7. Theme: Settlement

Settlement is a place where people live and interact through activities such as agriculture, trade and entertainment. Settlement pattern refers to the shape of the settlement as seen from above. The shapes of early settlements were influenced by the surrounding landscape. Some examples of settlement patterns include, nucleated settlements, linear settlements and dispersed settlements.

7. 1 Competency

Explore the natural characteristics of a place and relate their influence on culture and identity.

7.2 Learning Objectives

- i. Classify the patterns of settlement.
- ii. Explain the pattern of settlement with illustration.
- iii. Describe the influence of natural landscape on culture and identity of a place.

7.3 Learning Experiences

Use any suggested teaching methods: Project based learning, Concept Mapping, Inquiry based learning, IDEAL problem-solving Model, learning station, Virtual tour (Google Earth), Problem based learning, questioning or any other relevant strategies for teaching learning process.

- a. Discuss the role of physical features in the development of one's own culture and identity. Use <https://youtu.be/0TddmTJxyI0> to explore unique culture and identity of Bhutan and share it to class.
- b. Use https://youtu.be/pEl5hIAi_fo to discuss and explain the factors affecting influencing the location of a settlement.
- c. Use <https://www.slideshare.net/mrLandi/igcse-settlement-29206960>, to understand settlement site, situation and patterns. Develop a model of any pattern of settlement and do a Gallery Walk.
- d. Use <https://study.com/academy/topic/settlement-patterns.html> to elaborate on the settlement pattern.
- e. Choose any settlement and explore how geographical features impact in the evolution of one's culture and identity.
- f. Use Google Earth to explore the settlement pattern of a place to understand its morphology.

Reflection Questions

1. Observe the settlement pattern in your locality, and describe the factors responsible in affecting the settlement.
2. What do landscapes convey us about culture of a place?

7.4 Assessment

Use checklist, rubrics, questioning method, 3-2-1 paper, rating scale, exit ticket to assess students' learning.

7.5 Resources

Suggestive URL:

- <https://youtu.be/0TddmTJxyI0> (culture of Bhutanese people: documentary)
- https://youtu.be/pEl5hIAi_fo (rural Settlement pattern)
- <https://youtu.be/6NgewgszDFk> (how does geography shape culture)
- <https://youtu.be/XtnDobzNzT8> (Human settlement)
- <https://study.com/academy/topic/settlement-patterns.html> (settlement pattern)
- <https://youtu.be/BfnitYBvN88> (How Geography shaped Japan)
- <https://youtu.be/b-iLTXFRIk> (Pattern of settlement)
- <https://sciencing.com/four-geographical-factors-influencing-culture-22061.html>
Geographical Factors Influencing Culture)
- <https://www.slideshare.net/mrLandi/igcse-settlement-29206960> (Settlement, site, situation and patterns)

STRAND: PEOPLE AND THE ENVIRONMENT

8. Theme: Human Environment Interaction

Humans shape the landscape through their interaction with the land, which has both positive and negative effects on the environment. As an example of the human- environment interaction, think about how people living in cold climates have often mined coal or drilled for natural gas in order to heat their homes.

8.1 Competency

Analyse the interaction between human and environment to understand the ecosystem for human wellbeing.

8.2 Learning Objectives

- i. Explain components of the environment.
- ii. Describe the interrelationship that exists among the various components.
- iii. Analyse the importance of environmental conservation.

8.3 Learning Experiences

Strategies such as Project based learning, cooperative learning, KWL, learning station, Mind map, 7 E's Model are suggestive and teacher may use any relevant or better strategies in teaching learning process.

- I. Use <http://www.dspmuranchi.ac.in/pdf/Blog/satyapriya52dspmucomS12.pdf> to discuss the differences between biotic and abiotic components of the environment and their relationship in the ecosystem.
- II. In groups, explore the following areas using internet or other relevant resources and prepare a MS PowerPoint and present it to class followed by question answer session.
 - Types of waste
 - Examples of waste
 - Sources of waste
 - Effects of waste
 - Measures to reduce waste

III. Students complete the activity using the knowledge gained from group presentation or using internet and any other relevant sources.

Sl.no	Type of waste	Meaning	Examples	Sources	Measures
1.	Liquid waste	Liquid waste refers to all grease, oil, sludges, wash water, waste detergents and dirty water that have been thrown away	Grease, oil, chemicals.	Factories, industries, hospitals, workshops	Disposing in proper place.
2.	Solid waste				
3.	Organic waste				
4.	Recycle waste				
5.	Hazardous Waste				
6.	Electrical waste (E- Waste)				

IV. Students design posters to create awareness on waste management to reduce impact on the environment.

V. Students select a polluted area by waste to prepare a waste management plan and implement it to resolve the issue.

Reflective Questions

1. Which component of the environment is most important and why?
2. What happens to the environment if it is used irresponsibly?

8.4 Assessment

Assessment tools such as rubrics, checklist, rating scale, quiz, question- answer or any other relevant forms of assessment for assessing student's task.

8.5 Resources

Suggestive URL:

- <http://www.sgtbkhalsadu.ac.in/colleges/tutorial/112704042020162813.pdf> (Types of pollution, causes& effects and its measures)
- <https://youtu.be/OqHp03RRTDs> (Types of pollution and its causes)
- <https://www.dtmskips.co.uk/blog/types-of-waste/> (types of waste)
- <http://www.dsparmuranchi.ac.in/pdf/Blog/satyapriya52dspmucos12.pdf> (Components of environment)
- <https://www.dw.com/en/five-of-the-worlds-biggest-environmental-problems/a-35915705> (Worlds' biggest environmental problems)
- <https://youtu.be/XJ6VtduDy> (Interaction in ecosystem)
- https://youtu.be/IKZMGBA_OIk (Human impacts on environment)
- <https://youtu.be/-HE8HnoXbBs> (Conserving our environment)

Instructional Hours and Weighting Based on Competency

Sl No.	Strand	Competencies	Weighting (%)	Instructional time (minutes)
1	Time and space	Examine the significance of latitudes and longitudes to locate and find the time of places.	15	720
		Examine the importance of map reading skills and interpretation to demonstrate spatial reasoning skills.	15	720
2.	People and environment	Evaluate the importance of natural resources for balanced socio-economic development of our country.	10	480
		Use indigenous and scientific knowledge to understand measures to manage and address disaster.	10	480
		Analyse the natural characteristics of a place and relate their influence on culture and identity.	10	480
		Analyse the interaction between human and environment to understand ecosystem for human wellbeing.	10	480
	Physical Environment	Analyse the geomorphic processes to infer the significance of land features.	20	960
		Examine the structure and composition of atmosphere to understand its significance to the Earth.	10	480
	Total		100	4800 min (80 hours)

Assessment Rubrics and Criteria for Classes VII & VIII.

Criteria for Project work and field work

Name	Criteria					Total
	Content (4)	Language (4)	Presentation (4)	Process (4)	Originality & creativity (4)	

Rubrics for project and field work

Criteria	Marking Range				Score
	4	3	2	1	
Content	Information presented is relevant, accurate and in logical order.	Information presented is substantially relevant, accurate and in logical order.	Information presented is to some extent relevant, accurate and in logical order.	Information presented is not relevant, accurate and in logical order.	
Presentation	Exceptionally clear and precise expression of ideas, transfer of ideas into product with appropriate illustrations.	Clear and precise expression of ideas, transfer of ideas into product with appropriate illustrations.	Little expression of ideas, transfer of ideas into product with appropriate illustrations.	No clear and precise expression of ideas, transfer of ideas into product with appropriate illustrations.	
Process	Proper planning with regular consultations.	Partial planning with some consultations.	Little planning with little consultations.	No proper planning and Consultation.	
Language	Language without grammatical error	Language with few grammatical errors.	Language with few grammatical errors.	Language full of grammatical errors.	
Originality & Creativity	Display of original and creative ideas.	Partial display of original and creative ideas.	Little display of original and creative ideas.	No display of original and creative ideas.	
Total Score					

Teachers may use the above rubric for assessing project and field work.

(Sample rating scale for Affective domain)

Name	Criteria										Teacher's comments
	Participation in learning	Respect for others	Curiosity for exploration	Responsibility	Empathy for others	Punctuality	Honesty	Intellectual drive	Concern for environment	Collaboration	
Activities											

Note: The above parameters to be rated as: **A**-Outstanding, **B** - Very Good, **C**- Good, **D** - Fair and **E**- Need improvement. This rating scale is to be used at least once in a term to assess the development of values and attitudes.

Criteria for Home Work

Name	Criteria					Total Score 20
	Completion (4)	Accuracy (4)	Presentation (4)	Originality & creativity (4)	Timely submission (4)	

Rubric for Home Work

Criteria	Marking Range				Score
	4	3	2	1	
Completion	100% complete	75% complete	50% complete	25% complete	
Accuracy	100% correct	75% correct	50% correct	25% correct	
Presentation	Work is crystal clear and legible	Work is clear and legible	Poor clarity and less legible	Not clear and illegible	
Originality & Creativity	Display of original and creative ideas.	Partial display of original and creative ideas.	Little display of original and creative ideas.	No display of original and creative ideas.	
Timely submission	Work submitted on time	Work submitted one day late	Work submitted two days late	Work submitted three days late	

Note: Homework as per the requirement