NEW NORMAL CURRICULUM

Instructional Guide

Geography Class VII & VIII

Royal Education Council

Paro Bhutan

Foreword

COVID-19 has suddenly caused unforgiving disruptions in the public education all over the world, and brought about threats of fragmentation due to disparities in accessibility and connectivity in many systems. In Bhutan too, continuity of education and learning has been severely affected as a result of nationwide school closures and due to restrictions and health protocols. The disruptions have led to challenges in many existing patterns and trends in education resulting in a massive shift away from learning and teaching in traditional settings with physical interactions to the maximum in terms of relevancy and efficiency. This has caused a major problem for children living in poverty worldwide, who often rely on the physical settings of their schools for educational materials, guidance, and, sometimes, the only decent meal of the day.

In the new normal education, human interaction and well-being is a priority. Technology, particularly digital technology that enables communication, collaboration and learning across distance, is a formidable tool – not a panacea but a source of innovation and expanded potentials. As we embrace this exceptional opportunity to transform the world, and as we reimagine the organization of our educational institutions and learning environments, we will need to think about where we want to go.

In the post COVID 19 era, we must prioritize the development of the whole person not just academic knowledge. Inspiration for the change can be drawn from the 1996 Delors report, *Learning the treasure within*, in its specification of four pillars of learning as "learning to know", "to do", "to be", and "to live together". Therefore, curricula must be increasingly perceived as an integrated and based on themes and problems that allows learners to learn 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 and find purpose and be better able to participate in social and political milieu.

The New Normal Curriculum is, not just a mere response to the pandemic, but also a culmination of the curriculum reform work for the last four years by the Royal Education Council. It 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. We are optimistic that this move orients our education process towards nurturing nationally rooted and globally competent citizens.

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

(Kinga Dakpa)
Director General

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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.

Advisors:

Kinga Dakpa, Director General, Royal Education Council, Paro

Wangpo Tenzin, Curriculum Specialist, Royal Education Council, Paro

Copy Editors:

Norbu Wangchuk, Curriculum Specialist, Royal Education Council, Paro

Tashi Zangpo, Curriculum Developer, Royal Education Council, Paro

Research and Writing:

Cheku, Teacher, Woochu LSS, Paro

Karma Nidup, Teacher, Dawakha LSS, Paro

Sonam Wangdi, Teacher, Doteng LSS, Paro

Tandinla, Teacher, Samtengang CS, Wangdue

Norbu Wangchuk, Curriculum Specialist, REC, Paro

Design & Layout:

Tashi Zangpo, REC, Paro

Contents

Introduction

The 21st Century Education framework stipulates the emphasis on the thematic based learning areas with a comprehensive support system. The theme-based approach lends greater opportunities for experiential learning contextualised to the learner's physical, social, political, economic, spiritual and cultural setting. An approach, which mandates learning through active engagement of learners. Roles of teacher's are transformed from knowledge transmitter to facilitation, guide, evaluator, researcher and motivator.

The conventional education, which is predominantly knowledge based and examination centred teaching and learning has been the time old practices, and the stress of this model is on the learning of textual information perceived by educators important for the grade. On the other hand, with the advancement in ICT, the world is flooded with such information, which are widely read by all at their leisure. What learners cannot acquire from the multiple sources are the skills, which are crucial in facilitating learners realise their potential to be socially responsible and productive individuals and contribute in the nation building processes – economic, social, political development. In the contemporary world, the knowledge-based education compromises the development of psychomotor and affective domains of learning, which affects the holistic development of learners.

Despite the stigma of COVID 19 pandemic as destroyer, it presents wider scope and opportunities for creation and innovation, generally perceived more efficient and effective in work places and social activities. The pandemic situation explicated that the old ways of working, teaching and learning, and lifestyle have limitations. Consequently, new normal ways of how we work and live, teach and learn are the contemporary traditions. In this context, an overhaul of how we think and do is an imperative, not a choice. The transformation of classroom instruction from teacher centred to learner centred teaching and learning, however calls for the following adjustment, or even the overhaul of a few practices.

i. Reduction of learning content to facilitate deep learning as opposed to the width of the teaching through the active engagement of learners.
ii. Integration of ICT as tools and ends of learner's education. The use of multimedia and ICT software is commonly utilised in teaching and learning as innovation to introduce variation in stimuli and sustain learner's interest and zeal in learning.

iii. Adoption of theme based learning content, which facilitates to broaden the horizon of learning beyond the four walls, and stimulates the transfer of learnt concepts to the learner's immediate environment. This arrangement makes learner aware of the realities of the social, political, economic and cultural practices and ethos of the society. Being aware of the immediate environment of the scopes and challenges, learner is sensitized of the opportunities and issues, which may need attention for better future for the society.

iv. Consideration to ground the curriculum design and instruction approaches the epistemological theories is imperative to facilitate deep learning as opposed to factual learning. However, the selection and use of them is subject to the nature of respective subject. For instance, constructivism is more apt for science, while connectivism is relevant for languages and ICT curricula.

v. Active engagement of learners is imperative of the competency-based education and learning. Inevitably, summative assessment has limitation in gauging the progressive development of the learner. This is achieved objectively by the use of the continuous formative assessment (CFA). However, if summative assessment evidences are used to provide feedback to help learner in learning, it can serve as one of the techniques of CFA.

The curriculum adapted and grounded on the above wisdom, the principle of competency based learning, inspired by being aware of reality of the immediate environment, and the belief system of the society may be arbitrarily termed as the New Normal Curriculum. Learning is facilitated through the "Instructional Guide" with learners taking responsibilities of their learning; teachers facilitate and guide learners in the due course of their active engagement and assess their performance for improvement in their learning.

In the New Normal Curriculum, deep learning synonymous to "less is more" is facilitated with the use of Instructional Guide for each subject and specific class. The content of the instruction in the guide for the subjects are aligned with the curriculum framework with partial reference to the existing textbooks. Therefore, it is purported to achieve the following objectives:

i. Facilitate learning anywhere, any time with learner being responsible for the learning.

ii. Facilitate deep learning with awareness and sensitivity of the realities of the world around.

iii. Strengthen competency based learning and experiential learning to foster sensitivity of realities of the life and environment.

iv. Strengthen blended learning and flip classroom with multimedia, digital pedagogies and ICT devices and websites as the tools and learning content.

v. Guide parents in facilitating learning of their children.

vi. Inspire teachers to assume the roles of facilitation, guide, motivator and evaluator.

vii. Helps in the prioritization of learning content with emphasis to create time and space for active engagement of learners.

viii. Facilitate the use of CFA for learning through objective observation and guidance.

CLASS VII

Strand: Time and Space

1. Theme: Significance of Earth's Grid

1.1. Competencies

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

1.2. Objectives

- 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.

1.3. Pedagogy or Learning Experiences

Pedagogies such as project based learning, inquiry based learning, guest speaker, cooperative learning, debate, brainstorming, stimulation are suggestive and may use any relevant or better pedagogy in teaching learning process.

a. Ask diverse questions to check student's prior knowledge on the motions of the earth and its effects.
b. Provide a Power Point presentation or audio recording or video clip on rotation and revolution of the earth to determine the conditions of weather and climate of a place.
c. Demonstrate the location of places using lines of latitude and longitude on the earth using globes or maps to understand the significance of latitude and longitude.

OR

Brainstorm on the earth's grid- Students generate a wide range of ideas for discussion on the earth's grid for finding solutions to problems, approaching questions and explaining results.

i. Students brainstorm and make a list of ideas or points about the earth's grid in groups.
ii. Groups present their ideas to the class and other groups provide feedback and suggestions.
iii. Compile and validate the ideas or points.

d. Use a link https://www.youtube.com/watch?v=0qfjJdgPCTc to learn the process of time calculation and enable them to calculate time of any given place to understand the importance of local and standard time.
e. Using internet, students in groups explore the structure of the atmosphere to understand its significance. Prepare Ms Power point on the structure of the atmosphere and its significance.

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

i. Website Links:

http://www.ketteringschools.org/userfiles/1375/classes/13956/latitudeandlongitude.pdf (latitude and longitude)

https://www.youtube.com/watch?v=X1DkiuaFCuA (understanding time zones)

https://www.youtube.com/watch?v=YORm7xbIbTs&list=TLPQMDkwMjIwMjEh_I2MybEbnQ&index=3 (Time zone)

https://www.youtube.com/watch?v=kTht_MxbUx4 (understanding time zones)

https://www.youtube.com/watch?v=iPp2KZWBR5k (latitudes and longitudes)

ii. Textbook
iii. Maps and Globes

Strand: People and Environment

2. Theme: Resources for Socio-Economic Development

2.1. Competencies

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

2.2. Objectives

- Describe different types of rocks.
- Explain the processes of rock formation (rock cycle).
- Discuss minerals and types.
- Discuss the concept and types of resources.
- Explain the sustainable use of resources.

2.3. Pedagogy or Learning Experiences

Question and answering, project based learning, field trip, group discussion, inquiry based learning, inductive, deductive and project work are some suggestive pedagogies or use any relevant methods of teaching learning.

a. Use link, https://www.britannica.com/video/73006/plates-margins-plate-Earth-surface-vents-magma OR use a diagram depicting the layers of earth to support students understanding on the formation of rocks.
b. Students collect different rock samples found around the school campus and classify them based on the properties of rock.
c. Students in groups discuss the differences between rocks and minerals. Groups share their findings to whole class. Using ICT facilities or any relevant source, explore minerals and its contribution to the socio- economic development of Bhutan.

d. Using internet or any other relevant material, explore the impacts on excessive use of natural resources (rocks & minerals) and suggest ways to overcome such issues in future.

2.4 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 student's task.

2.5 Resources

Use suggestive websites/youtube videos or any relevant materials to explore and learn more about the topic.

i. Website Links:

https://byjus.com/chemistry/types-of-minerals/ (types of minerals and its classification)

https://www.facebook.com/Kuensel/posts/3414533231914885 (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://www.britannica.com/video/143173/materials-cycle-forms-sedimentary-rock-Sediments-magma(rock cycle)

https://www.youtube.com/watch?v=jjCEWkCiZ9M (types of rocks and minerals, and its uses)

https://www.youtube.com/watch?v=3fYlKUUyj4M (gypsum extraction and uses)

ii. Textbook

Strand: People and Environment

3. Theme: Influence of Physical Features on Human Lives

3.1. Competencies

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

3.2. Objectives

- Explain human interaction with the environment.

3.3. Pedagogy/ Learning Experiences

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

Using suggestive links:

i. https://wonderopolis.org/wonder/how-does-earths-surface-affect-culture
ii. http://www.anderson.k12.ky.us/Downloads/5themes.pdf
iii. https://www.youtube.com/watch?v=KXCi1kPjzFM
iv. https://www.socialstudies.com/pdf/FH411VTG.pdf

a. To understand and relate the cultural diversity in their classroom, students share about their place of origin (Dzongkhag/Gewog/Village).
b. Using relevant materials such as video clips, MS power point and other reading materials on cultural diversity, students write a short paragraph on:
    - How climate, topography, and natural resources influence culture and adapt to their environment?

- How topographic features, natural resources and climate influence population distribution and cultural development?

c. 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 Power Point presentation on their findings.

3.4. Assessment

Use checklist or rubrics, questioning method, rating scale to assess students' learning.

3.5. Resources

i. Websites links:

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://www.youtube.com/watch?v=KXCi1kPjzFM (how geography defines culture)
https://www.socialstudies.com/pdf/FH411VTG.pdf

ii. Textbook

Strand: People and Environment

4. Theme: Managing Hazard and Disaster

4.1. Competencies

- Design disaster contingency plan by using mapping skills.

4.2. Objectives

- Exhibit life-saving skills during disaster.
- Suggest measures to reduce disasters.

4.3. Pedagogy or Learning Experiences

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

Using the suggested websites or any other relevant websites;

i. https://www.esc.cam.ac.uk/research/research-groups/cambridge-volcano-seismology/all-about-earthquakes-and-volcanoes
ii. https://www.toppr.com/ask/search/?query=difference+between+disasters+and+hazards&userId=MzQyNTkw&klass=all
iii. https://clarkscience8.weebly.com/patterns-of-earthquakes-and-volcanoes.html
iv. https://www.britannica.com/science/earthquake-geology
v. https://www.britannica.com/science/volcano,

a. Using images and video clips, discuss the potential and prominent hazards and disasters.
b. Students explore information on earthquake, flood, wind storm, landslide, GLOF and fire to understand their causes and effects.
c. Organize debate on 'severity of natural and human induced disaster in our country'.

d. Conduct hazard hunting exercise in the class and prepare a list of hazardous items. Reposition the hazardous items to reduce the impact of disaster. Carry out a similar activity at home or in hostel.

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

f. Use ICT tools to develop a school evacuation map for practical application.

4.4. 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.

4.5. Resources

i. Website links:

https://www.unescap.org/sites/default/files/Bhutan_2.pdf (PPT on types of hazards and disaster in Bhutan)

https://www.ddm.gov.bt/ (department of disaster management)

https://www.youtube.com/watch?v=ybjSHBAO6k0 (natural hazards and disasters)

https://www.youtube.com/watch?v=1bmOmozR7ZQ (hazards)

https://www.youtube.com/watch?v=h3l94aZSbGM (Earthquake Hazards)

https://www.youtube.com/watch?v=FowixCmKNKs (causes and effects of Earthquake)

https://www.youtube.com/watch?v=USLHmwvpjX8 (Education for disaster preparedness)

https://www.youtube.com/watch?v=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 response, recovery, and reconstruction)

ii. Textbook

Strand: People and Environment

5. Theme: Human Impact on Environment

5.1. Competencies

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

5.2. Objectives

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

5.3. Pedagogy or Learning Experiences

Pedagogies such as problem based learning, project based learning, inquiry based learning, 7 Es Learning Model, KWLH are suggestive or use any other relevant or better pedagogies in teaching learning process.

5.3.1. 7Es Model

a. Check student's prior knowledge by asking questions about the biotic & abiotic components and 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 power point presentation on their findings.

d. Groups present their work to the class followed by question answer session.

e. Students prepare remedial solutions related to pollution in their daily lives and design poster for awareness, and to mitigate environmental pollution.

f. Teacher uses 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 prepare plan to mitigate the problem.

5.3.2. KWLH Strategy

a. Students share their ideas on 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.

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.

5.4. Assessment

Use rubrics, checklist, rating scale, quiz, question- answer or any other relevant tools for assessing student's task.

5.5. Resources

i. Website Links:

http://www.sgtbkhalsadu.ac.in/colleges/tutorial/112704042020162813.pdf (Types of pollution, causes, effects and measures)

https://www.youtube.com/watch?v=OqHp03RRTDs (Animation on 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)

ii. Textbook

Strand: Physical Environment

6. Theme: Process of Land Formation and Its Impact on Human Life

6.1. Competencies

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

6.2. Objectives

- Discuss the river systems.
- Explain the basic processes of land formation.
- Locate major rivers on an outline map.
- Describe different types of landforms

6.3. Pedagogy or 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. Using the given web link;
https://www.youtube.com/watch?v=fdMmzY7XjFo
https://www.geo41.com/rivers-igcse#drainage-basins-igcse
https://www.geo41.com/rivers-igcse#river-landforms , explore the characteristics of different landforms.
b. Probe students to name various landforms and factors responsible for shaping it. Elaborate on the different agents of gradation with focus on drainage basin.

c. Using GPS or GIS or Google Earth, explore drainage basin and drainage pattern of a place.

d. 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 student-community learning programme to discuss the impact of landforms on the livelihood, and the importance of resources.

6.4. Assessment

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

6.5. Resources

i. Website Links:

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%20of%20Bhutan%202017%20%20.pdf (River Flow status of Bhutan)

https://www.slideshare.net/yaryalitsa/powerpoint-landforms-60 (slideshow on types of land form images)

https://www.youtube.com/watch?v=wQnCyCAF_BY (animation video on process and types of landform)

https://www.youtube.com/watch?v=iURNoewVNXQ (Bhutan River Basin Management plan)

https://www.youtube.com/watch?app=desktop&v=uI78xoEkm0c (animated video of drain basin of India)

https://www.youtube.com/watch?v=BsqKTJtK_vw (landform)

ii. Textbook

iii. Annexures or Appendix

(Use the Rubrics of page 76 of text book for project work and Field work)

Instructional Hours and Weighting Based on Competency

Sl No.	Strand	Competencies	Weighting (%)	Instructional time (minutes)	Periods (40 minutes)
1	Time and space	Examine the significance of latitudes and longitudes to infer the weather and climate of a place	30	1440	36
2.	People and environment	Evaluate the importance of natural resources for the balanced socio-economic development of our country.	10	480	12
		Recommend ways to minimise pollutions to understand the impact on the environment	10	480	12
		Design disaster contingency plan by using mapping skills	10	480	12
		Analyse the natural characteristics of a place and their influence on culture and identity	10	480	12
3.	Physical Environment	Explore characteristics of various landforms to understand the process of gradation and relate the landforms to our culture	30	1440	36
	Total		100	4800	120

CLASS VIII

Strand – Time and Space

1. Theme – Earth's Grid and Its Significance

1.1. Competencies

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

1.2. Objectives

- Describe the importance of latitudes and longitudes.
- Identify latitudes and longitudes of places on a map.
- Calculate time and longitudes.

1.3. Pedagogy or 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. Discuss the importance of latitude and longitude for mapping purpose.

b. Using the link, https://www.youtube.com/watch?v=gsGLc-BvWZY, students practice to locate places on a map.

c. Using ICT, design important lines of latitude and longitude to understand its significance.

d. Using the link, (https://www.gps-coordinates.net/), students explore and find out direction, location and altitude of different places.

e. Demonstrate procedures to calculate time or use the link https://www.youtube.com/watch?v=0qfjJdgPCTc to understand International Standard time/UTC, Standard time and Local time.

f. Using the web link, https://www.academia.edu/34222024/MAP_READING_and_INTERPRETATION to introduce map reading and interpretation skills.

OR

Use internet facilities to explore the following:

- Topographic map.
- Features of contour lines.
- Uses of topographic maps.

1.4. Assessment

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

1.5. Resources

i. Website Links:

https://study.com/academy/lesson/topographic-map-lesson-plan.html (Topographic map lesson plan)

http://www.orange.wateratlas.usf.edu/education/curriculum/orange/lessons/WA03_Contour_Mapping-T.pdf (Contour plan lesson plan)

https://www.commonsense.org/education/lesson-plans/mastering-map-reading (Map reading)

https://www.usgs.gov/science-support/osqi/yes/resources-teachers/27-ideas-teaching-topographic-maps (Teaching topographic map)

https://www.esi.utexas.edu/files/061-Lesson-Plan-Mapping-Unknown.pdf (lesson plan on mapping)

https://www.youtube.com/watch?v=MDRIXoZKEEo (how to locate places using longitude and latitude)

https://www.academia.edu/34222024/MAP_READING_and_INTERPRETATION (Map reading and interpretation skill)

https://www.youtube.com/watch?v=QIrELLSWWB8 (Map reading and interpretation skill)

https://www.youtube.com/watch?v=zqPMYGDxCr0(Map reading and interpretation skill)

Strand: People and Environment

2. Theme: Resources for Socio-Economic Development

2.1. Competencies

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

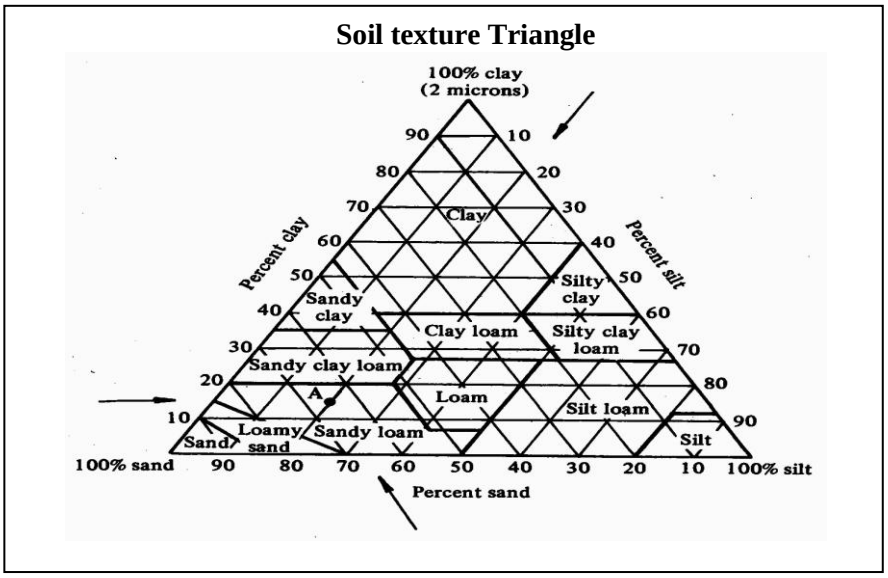
2.2. Objectives

- 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.

2.3. Pedagogy or Learning Experiences

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

i. Student in groups collect soil samples to examine the soil properties.
ii. Students prepare a model of soil profile to comprehend the properties of soil.
iii. Using link, https://www.youtube.com/watch?v=cNx4czkFLbA OR use soil texture triangle to comprehend physical and chemical properties of soil.



iv. Using link, https://www.youtube.com/watch?v=xne9Jl9TUUE students improvise a simple pH testing kit to test the chemical properties of soil found around their place.

v. Using internet, students explore soil as a factor affecting the vegetation.

vi. Using the knowledge of the earth's grid, analyse the differences in vegetation and its impact on living organisms.

vii. Probe students on how the natural resources (landform, soil, vegetation) influence the distribution of population.

viii. Use link, https://www.worldometers.info/demographics/bhutan-demographics/#pop to explore the impact of population on socio-economic development.

2.4. Assessment

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

2.5. Resources

i. Website Links:

https://www.worldatlas.com/articles/5-major-types-of-vegetation-in-the-world.html (major vegetation of the world)

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 and sanctuary of Bhutan)

https://www.worldometers.info/demographics/bhutan-demographics/#pop(Bhutan demographic)

https://www.youtube.com/watch/vqtdFaclWf0 (soil profile)

https://www.youtube.com/watch?v=og9A_Apr534 (animation on soil profile and characteristics)

https://www.youtube.com/watch?v=cNx4czkFLbA (soil texture triangle)

https://www.youtube.com/watch?v=xne9Jl9TUUE (improvised pH soil test kits)

https://unctad.org/system/files/official-document/aldc2012_Bhutan.pdf (Bhutan's experience in socio-economic development-UNCTAD)

ii. Textbook

Strand: People and Environment

3. Theme – Managing Hazard and Disaster

3.1. Competencies

- Design disaster contingency plan by using mapping skills.

3.2. Objectives

- 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.

3.3. Pedagogy or 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.

Using the suggested websites or any other relevant websites,

https://www.esc.cam.ac.uk/research/research-groups/cambridge-volcano-seismology/all-about-earthquakes-and-volcanoes

https://www.toppr.com/ask/search/?query=difference+between+disasters+and+hazards&userId=MzQyNTkw&klass=all
https://clarkscience8.weebly.com/patterns-of-earthquakes-and-volcanoes.html
https://www.britannica.com/science/earthquake-geologyhttps://www.britannica.com/science/volcano,

a. Create awareness on hazards and disaster by using images, video clips and providing real life examples by highlighting potential and prominent hazards.
b. Explore information on the causes and effects of disaster (earthquake, flood, wind storm, landslide, GLOF, fire, and etc.)
c. Debate on 'natural and human induced disasters' by providing necessary feedback and reinforcements.
d. Carry out hazard hunting in the school campus to identify types of hazards in classrooms or school and suggest measures to mitigate it.
e. Conduct or initiate simulation on any of the disasters (earthquake, fire, wind storm, lightning, landslide, etc.) in consultation with School Disaster Focal Person.
f. Collaborate with ICT tutor in developing evacuation map for classrooms or school by using different ICT tools (software, apps) for practical application.
g. Critique Disaster Management Plan of any organization.
h. Develop an individual disaster management plan to be used at home in the event of any disasters.

3.4. Assessment

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

3.5. Resources

Website Links:
https://www.esc.cam.ac.uk/research/research-groups/cambridge-volcano-seismology/all-about-earthquakes-and-volcanoes (Earth and volcano)
https://www.toppr.com/ask/search/?query=difference+between+disasters+and+hazards&userId=MzQyNTkw&klass=all (differences between hazards and disasters)
https://clarkscience8.weebly.com/patterns-of-earthquakes-and-volcanoes.html (patterns of earthquake and volcanoes)

https://www.britannica.com/science/earthquake-geology (earthquake)

https://www.britannica.com/science/volcano, (volcano)

file:///C:/Users/PC/Downloads/Status-of-Disaster-Risk-Reduction-in-Schools%20(2).pdf (Status of disaster risk reduction in Bhutanese schools)

https://www.preventionweb.net/files/74873_finalndrmsndmabhutan.pdf (disaster risk management strategy)

https://www.unescap.org/sites/default/files/Bhutan_2.pdf (Disaster Management in Bhutan)

Strand – People and Environment

4. Theme: Influence of Physical Features on Human Lives

4.1. Competencies

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

4.2. Objectives

- Describe impacts of natural characteristics of a place and their influence on culture and identity.
- Classify patterns of settlement.

4.3. Pedagogy/ Learning Experiences

Use any suggested teaching methods: Project based learning, Concept Mapping, Inquiry based learning, IDEAL problem solving Model, Learning station, Problem based learning, questioning or any other relevant strategies for teaching learning process.

a. Discuss prior knowledge on how physical features have affected the development of one' own culture and identity. Students share unique culture and identity of Bhutan owing to its geographical location after using the link, https://www.youtube.com/watch?v=0TddmTJxyI0

b. Use graphic organizer to examine the influence of physical features on their culture, and use **KWL** chart to write a summary on it.

c. Use link https://www.youtube.com/watch?v=pEI5hlAi_fo to discuss factors affecting settlement and explain the factors influencing the location of a settlement.

d. Using links, https://www.youtube.com/watch?v=6NgewgszDFk and

https://www.youtube.com/watch?v=XtnDobzNzT8 discuss how geography has shaped culture and relate it to Bhutanese context.

e. Choose any settlement and explore how geography impacts in developing culture and identity.

f. Use link, https://study.com/academy/topic/settlement-patterns.html to elaborate on settlement pattern.

g. Use link, https://www.slideshare.net/mrLandi/igcse-settlement-29206960, to refer settlement site, situation and patterns, and develop a model or draw an ideal settlement incorporating all the factors.

4.4. Assessment

Use checklist, rubrics, questioning, rating scale, memory matrix, anecdotal, quiz, 3-2-1 paper, muddiest point and mind map to assess student's task.

4.5. Resources

Website Links:

https://www.youtube.com/watch?v=0TddmTJxyI0(A glimpse into the life and culture of Bhutanese people: a documentary)

https://www.youtube.com/watch?v=pEI5hlAi_fo(rural Settlement pattern)

https://www.youtube.com/watch?v=6NgewgszDFk (how does geography shape culture)

https://www.youtube.com/watch?v=XtnDobzNzT8 (Human settlement)

https://study.com/academy/topic/settlement-patterns.html(settlement pattern)

https://www.youtube.com/watch?v=BfnitYBvN88 (How Geography shaped Japan)

https://sciencing.com/four-geographical-factors-influencing-culture-22061.html (Four Geographical Factors Influencing Culture)

https://www.slideshare.net/mrLandi/igcse-settlement-29206960 (Settlement, site, situation and patterns)

Strand – People and Environment

5. Theme: Human Impact on Environment

5.1. Competencies

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

5.2. Objectives

- Explain components of the environment.
- Describe the interrelationship that exist among the various components.
- Analyse the importance of environmental conservation.
- Analyse the importance of addressing population change.

5.3. Pedagogy or Learning Experiences

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

a. Use the link, http://www.dspmuranchi.ac.in/pdf/Blog/satyapriya52dspmucomS12.pdf to discuss and explain the differences between biotic and abiotic components of the environment and their relationship in the ecosystem.

b. Students in groups explore on the following areas using internet or other relevant resources and prepare a MS power point and present to class followed by question answer session.

   i. Types of waste
   ii. Examples of waste
   iii. Sources of waste
   iv. Effects of waste
   v. Measures to reduce waste

c. 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)				

d. Students design poster to create awareness on waste management to reduce impact on environment.
e. Students identify the area polluted by waste and prepare waste management plan to resolve the issue.

5.4. Assessment

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

5.5. Resources

i. Website Links:

http://www.sgtbkhalsadu.ac.in/colleges/tutorial/112704042020162813.pdf (Types of pollution, causes& effects and its measures)

https://www.youtube.com/watch?v=OqHp03RRTDs (Animation on types of pollution and its causes)

https://www.dtmskips.co.uk/blog/types-of-waste/ (types of waste)

http://www.dspmuranchi.ac.in/pdf/Blog/satyapriya52dspmucomS12.pdf (Components of environment)

https://www.dw.com/en/five-of-the-worlds-biggest-environmental-problems/a-35915705 (Worlds' biggest environmental problems)

ii. Refer textbook

Strand – Physical Environment

6. Theme: Process of Land Formation and Its Impact on Human Life

6.1. Competencies

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

6.2. Objectives

- Locate features on a map.
- Illustrate relief features from contour map.
- Discuss stages of river.

6.3. Pedagogy or Learning Experience

1. 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. Brainstorm on different maps (political, physical, topographic, climate, economic, and thematic maps) and discuss scale.
   b. Demonstrate the conversion of scales using text book or suggested resources and practice conversion using the link, https://www.youtube.com/watch?v=mFiQjhrJCks
   c. Discuss the importance of grid reference using textbook or link, https://www.youtube.com/watch?v=Spi-7sT2Y5E to locate different features.
   d. Use the link, https://www.youtube.com/watch?v=CoVcRxza8nI to interpret topographical map with the help contours and conventional symbols.

2. Identify different landforms in their surrounding and choose any landform to carry out a project on its formation and its impact to the community.

6.4. 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.

6.5. Resources

i. Website Links:

https://www.youtube.com/watch?v=mFiQjhrJCks(types of map scale and how to convert Statement scale into Representative Fraction (R.F) and R.F into Statement Scale)

https://www.youtube.com/watch?v=Spi-7sT2Y5E (how to find four figure grid and six figure grid)

https://www.youtube.com/watch?v=9w-KOodmiZc (how to plot contour section and find out relief features)

https://www.youtube.com/watch?v=9w-KOodmiZc (plotting contour)

https://www.youtube.com/watch?v=fdMmzY7XjFo (Stages of river and landform)

https://www.youtube.com/watch?v=wi0fT3TCIGs (Meander and Ox Bow Lake)

https://www.youtube.com/watch?v=A47ythEcz74 (Delta formation)

https://www.youtube.com/watch?v=Y6JnCSWqOto (Levees Formation)

https://www.google.com/search?q=topographic+map&rlz=1C1AVFC_enBT851BT853&source=lnms&tbm=isch&sa=X&ved=2ahUKEwjpqa392tnuAhXPc30KHQfhATsQ_AUoAXoECAIQAw&biw=1088&bih=504&dpr=1.25 (Various topographic map)

ii. Textbook

Instructional Hours and Weighting Based on Competency

Sl No.	Strand	Competencies	Weighting (%)	Instructional time (minutes)	Periods (40 minutes)	Remarks
1	Time and space	Examine the significance of latitudes and longitudes to infer the weather and climate of a place	30	1440	36	
2.	People and environment	Evaluate the importance of natural resources for the balanced socio-economic development of our country.	10	480	12	
		Recommend ways to minimise pollutions to understand the impact on the environment	10	480	12	
		Design disaster contingency plan by using mapping skills	10	480	12	
		Analyse the natural characteristics of a place and their influence on culture and identity	10	480	12	
3.	Physical Environment	Explore characteristics of various landforms to understand the process of gradation and relate the landforms to our culture	30	1440	36	
	Total		**100**	**4800**	**120**	