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SENIOR SCHOOL CURRICULUM DESIGN

GRADE 10

GEOGRAPHY

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT
2024

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

Nurturing Every Learner's Potential

SENIOR SCHOOL CURRICULUM DESIGN

GRADE 10

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NATIONAL GOALS OF EDUCATION

Education in Kenya should:

1. Foster nationalism and patriotism and promote national unity.

Kenya's people belong to different communities, races and religions, but these differences need not divide them. They must be able to live and interact as Kenyans. It is a paramount duty of education to help young people acquire this sense of nationhood by removing conflicts and promoting positive attitudes of mutual respect which enable them to live together in harmony and foster patriotism in order to make a positive contribution to the life of the nation.

2. Promote the social, economic, technological and industrial needs for national development.

Education should prepare the youth of the country to play an effective and productive role in the life of the nation.

a) Social Needs

Education in Kenya must prepare children for changes in attitudes and relationships which are necessary for the smooth progress of a rapidly developing modern economy. There is bound to be a silent social revolution following in the wake of rapid modernization. Education should assist our youth to adapt to this change.

b) Economic Needs

Education in Kenya should produce citizens with the skills, knowledge, expertise and personal qualities that are required to support a growing economy. Kenya is building up a modern and independent economy which is in need of an adequate and relevant domestic workforce.

c) Technological and Industrial Needs

Education in Kenya should provide learners with the necessary skills and attitudes for industrial development. Kenya recognizes the rapid industrial and technological changes taking place, especially in the developed world. We can only be part of this development if our education system is deliberately focused on the knowledge, skills and attitudes that will prepare our young people for these changing global trends.

3. Promote individual development and self-fulfilment

Education should provide opportunities for the fullest development of individual talents and personality. It should help children to develop their potential interests and abilities. A vital aspect of individual development is the building of character.

4. **Promote sound moral and religious values.**
Education should provide for the development of knowledge, skills and attitudes that will enhance the acquisition of sound moral values and help children to grow up into self-disciplined, self-reliant and integrated citizens.

5. **Promote social equity and responsibility.**
Education should promote social equality and foster a sense of social responsibility within an education system which provides equal educational opportunities for all. It should give all children varied and challenging opportunities for collective activities and corporate social service irrespective of gender, ability or geographical environment.

6. **Promote respect for and development of Kenya's rich and varied cultures.**
Education should instill in the youth of Kenya an understanding of past and present cultures and their valid place in contemporary society. Children should be able to blend the best of traditional values with the changing requirements that must follow rapid development in order to build a stable and modern society.

7. **Promote international consciousness and foster positive attitudes towards other nations.**
Kenya is part of the international community. It is part of the complicated and interdependent network of peoples and nations. Education should therefore lead the youth of the country to accept membership of this international community with all the obligations and responsibilities, rights and benefits that this membership entails.

8. **Promote positive attitudes towards good health and environmental protection.**
Education should inculcate in young people the value of good health in order for them to avoid indulging in activities that will lead to physical or mental ill health. It should foster positive attitudes towards environmental development and conservation. It should lead the youth of Kenya to appreciate the need for a healthy environment.

LEARNING OUTCOMES FOR SENIOR SCHOOL

By the end of senior school, the learner should be able to:

1. Communicate effectively and utilise information and communication technology across varied contexts.
2. Apply mathematical, logical and critical thinking skills for problem solving.
3. Apply basic research and scientific skills to manipulate the environment and solve problems.
4. Exploit individual talents for leisure, self-fulfilment, career growth, further education and training.
5. Uphold national, moral and religious values and apply them in day to day life.
6. Apply and promote health care strategies in day to day life.
7. Protect, preserve and improve the environment for sustainability.
8. Demonstrate active local and global citizenship for harmonious co-existence.
9. Demonstrate appreciation of diversity in people and cultures.
10. Manage pertinent and contemporary issues responsibly.

THE SENIOR SCHOOL IN THE COMPETENCY BASED CURRICULUM (CBC)

Senior School is the forth level of Basic Education in the Competency Based Curriculum (CBC) that learners shall come to after the Pre-Primary, Primary and Junior School (JS). The essence of Senior School is to offer learners a Pre- University/ Pre-career experience where the learners have an opportunity to choose pathways where they have demonstrated interest and/or potential at the earlier levels. Senior school comprises three years of education for learners in the age bracket of **15 to 18 years** and lays the foundation for further education and training at the tertiary level and the world of work. In the CBC vision, learners exiting this level are expected to be ***engaged, empowered and ethical citizens*** ready to participate in the socio-economic development of the nation.

At this level, learners shall take **SEVEN (07) learning areas (LAs)** as recommended by the *Presidential Working Party on Educational Reforms* (PWPER). These shall comprise **Four Compulsory** learning areas, and Three learning areas opted for by the learner according to their choses Pathway. While English and Kiswahili are indicated as Compulsory, the learners who opt for these learning areas as their subjects of specialization shall go through a *differentiated curriculum* in terms of scope, experiences and assessment. Such learners shall; therefore, take *Advanced English* or *Kiswahili Kipevu* with additional two lessons. It is recommended that AT LEAST TWO learning areas should be from chosen Pathway. In exceptional cases, some learners may opt for ONE learning area from the chosen Pathway and a maximum of TWO learning areas from any of the three pathways; depending on the learner's career projections and with guidance by the principals at Senior School.

PROPOSED LIST OF SUBJECTS AT SENIOR SCHOOL

Compulsory Subjects	Science, Technology, Engineering & Mathematics (STEM)	Social Sciences	Arts & Sports Science
1. English 2. Kiswahili/KSL 3. Community Service Learning 4. Physical Education ***NB: ICT skills will be offered to all students to facilitate learning and enjoyment***	5. Mathematics/Advanced Mathematics 6. Biology 7. Chemistry 8. Physics 9. General Science 10. Agriculture 11. Computer Studies 12. Home Science 13. Drawing and Design 14. Aviation Technology 15. Building and Construction 16. Electrical Technology 17. Metal Technology 18. Power Mechanics 19. Wood Technology 20. Media Technology* 21. Marine and Fisheries Technology*	22. Advanced English 23. Literature in English 24. Indigenous Language 25. Kiswahili Kipevu/Kenya Sign Language 26. Fasihi ya Kiswahili 27. Sign Language 28. Arabic 29. French 30. German 31. Mandarin Chinese 32. History and Citizenship 33. Geography 34. Christian Religious Education/ Islamic Religious Education/Hindu Religious Education 35. Business Studies	36. Sports and Recreation 37. *Physical Education (C)* 38. Music and Dance 39. Theatre and Film 40. Fine Arts

LESSON DISTRIBUTION AT SENIOR SCHOOL

The number of lessons in each of the compulsory learning areas shall be 4; while the optional areas shall be 6 lessons each. A lesson shall be 40 minutes. The "free" lessons shall be used for development of ICT skills, Pastoral Instruction Programme (PPI), projects, collaborative study and further reading.

ESSENCE STATEMENT

Geography is the study of the Earth, people and their inter-relationships in the context of place, space, environment and time. It draws content from a wide range of disciplines such as Computer Science, Economics, Engineering, Mathematics, Cartography and History. The content is organized around the themes of human-environment interactions, location, place, movement and region. There are two main branches of Geography namely; Physical and Human Geography. The practical components of Map work, Fieldwork, Photograph work, Geographic Information Systems (GIS), Elementary Surveying and Statistics cut across the Physical and Human Geography.

Geography incorporates distinctive knowledge that equips the learner with the 21st Century competencies in order to cope with environmental and societal challenges at local, national, regional and global levels. To enrich the content, therefore, the Pertinent and Contemporary Issues are infused and integrated in the curriculum. Further, the subject is fundamental in the attainment of the National Goals of Education and global aspirations on sustainable development. It also lays a strong foundation for further education and career development.

The study of Geography adopts the *Learning Styles Models* that emphasize on creation of knowledge through transformative experiences for lifelong learning and in-depth understanding of the environment. |Learning of Geography therefore, should be practical and culturally responsive to the natural and human phenomena in the local and extended environments. In addition, the subject should engage the learner in meaningful and relevant activities which allow application of concepts learnt and foster positive attitude towards the environment.

SUBJECT GENERAL LEARNING OUTCOMES

By the end of Senior Secondary, the learner should be able to:

1. Demonstrate an understanding of the relationship between Geography and other disciplines for career development
2. Apply appropriate geographical knowledge, skills, values and attitudes as a basis for technological and industrial development
3. Manage and conserve the physical and human environments for socio-economic development
4. Appreciate the interdependence between the Earth's systems and processes for environmental sustainability
5. Use individual talents and geographical skills for self-reliance and spatial interactions at local, national, regional and global levels

SUMMARY OF STRANDS AND SUB STRANDS

	Strand	Sub-Strand	Suggested Number of Lessons
1.0	**Practical Geography**	Introduction to Geography	8
		Map Reading and Interpretation	13
		Statistical Methods	12
		Geographic Information System	13
2.0	**Natural Systems and Processes**	Rocks	18
		Earth Movements	6
		Folding	12
		Vulcanicity	13
		Earthquakes	10
3.0	**Human and Economic Activities**	Agriculture	15
		Mining	20
		Energy	20
		Industry	20
	Total Number of Lessons		**180**

Note: The suggested number of lessons per Sub Strand may be less or more depending on the context.

STRAND 1.0: PRACTICAL GEOGRAPHY

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Practical Geography	**1.1 Introduction to Geography** (08 lessons)	By the end of the sub strand, the learner should be able to**:** a) analyse the branches of Geography for in-depth understanding of the subject, b) examine the importance of studying Geography for sustainable development, c) explore the relationship between Geography and other disciplines for identification of career pathways, d) select possible careers from branches of Geography in the society, e) appreciate the significance of Geography in day-to-today life.	The learner is guided to**:** • Brainstorm on the meaning and branches of Geography and make class presentations • Use print or digital resources to establish the importance of studying Geography and write notes • Discuss the relationship between Geography and other disciplines and present in class • Engage with resource person on meaning of career, factors to consider in choosing a career and careers related to Geography and take notes. • Create posters on careers related to Geography and display in school • Engage in work shadowing on a	How does the study of Geography impact on peoples lives?

			possible career in Geography and share experiences in class. • Conduct a digital or library research on the significance of Geography in day-to-today life and make class presentations	

Core Competencies to be developed:

- Communication and Collaboration: The skill of effective communication as the learner discusses the relationship between Geography and other disciplines and presents in class
- Critical Thinking: The skill of interpretation and inference as the learner brainstorms on the meaning and branches of Geography
- Creativity and Imagination: The skill of making connections as the learner creates posters on careers related to Geography

Values:

- Unity: Learner cooperates as they discuss in groups the relationship between Geography and other disciplines and makes class presentations
- Responsibility: Learner remains accountable as they use digital resources to establish the importance of studying Geography

Pertinent and Contemporary Issues (PCIs):

- Self-Awareness: Learner engages in work shadowing on a possible career in Geography and shares experiences in class
- Creative Thinking: Learner creates a poster on careers related to Geography and displays in school

Strand	Sub-Strand	Suggested Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Practical Geography	**1.1 Map Reading and Interpretation** (13 lessons)	By the end of the sub-strand, the learner should be able to**:** a) illustrate the various methods of representing relief on topographical maps, b) interpret relief, drainage and vegetation on topographical maps for resource mapping, c) draw sketch sections from topographical maps for interpreting relief, d) appreciate the use of map reading and interpretation skills for national development.	The learner is guided to**:** • Brainstorm on meaning and types of maps and share in class • Use print or digital resources to research on the various methods of representing relief, drainage and vegetation on topographical maps and draw sketches • Discuss how relief, drainage and vegetation are interpreted on topographical maps and make class presentations • Watch video clips on relief, drainage, and vegetation and take notes • Draw sketch sections from topographical maps and display in class. • Use relief, drainage and vegetation on topographic maps to identify various economic activities that can be undertaken in a given area.	How do we read and interpret topographical maps?

Core Competencies to be developed:

- Self-Efficacy: The skill of self-awareness and planning as the learner draws sketch sections from topographical maps and display in class
- Digital Literacy: The skill of interacting with technology as the learner watches video clips on relief, drainage, and vegetation and take notes
- Critical Thinking: The skill of interpretation and inference as the learner discusses how relief, drainage and vegetation are interpreted on topographical maps and make class presentations

Values:

- Unity: Learner strives to achieve a common goal as they use print or digital resources to research on the various methods of representing relief on topographical maps and draws sketches
- Respect: Learner respects diverse opinions as they discuss how relief, drainage and vegetation are interpreted on topographical maps and makes class presentations
- Responsibility: Learner takes care of digital devices as they watch video clips on relief, drainage and vegetation

Pertinent and Contemporary Issues (PCIs):

- Self-Awareness: Learner draws sketch sections from topographical maps and displays in class
- Environmental Education: Learner discusses relief, drainage, and vegetation on topographical maps
- Online Safety: Learner watches video clips on relief, drainage and vegetation

Strand	Sub-strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Practical Geography	**1.2 Statistical Methods** (12 lessons)	By the end of the sub strand, the learner should be able to: a) analyse the importance of statistics in Geography, b) explore the limitations of statistics in explaining geographical facts, c) examine the methods of data collection, analysis and presentation in geographical studies, d) collect, analyse, interpret and present statistical data on a Geographical phenomenon, e) appreciate the importance of statistics in day-to-day life.	The learner is guided to: • Brainstorm on the importance of statistics in Geography and share in class • Conduct library research on the limitations of using statistics in explaining geographical facts and write notes • Role play the methods of data collection in Geography • Discuss methods of data analysis (*measures of central tendency*), presentation *(Combined bar and line graphs, Comparative/group /multiple bar graphs)* and interpretation and make presentations in class • Carry out research within the school on a selected geographical topic (*collect data, analyse, interpret, present the data)* and write a report • Use digital resources to make presentations in class on the research	How do we use statistics in day-to-day life?

			findings	

Core Competencies to be developed:

- Critical Thinking and Problem Solving: The skill of research as the learner conducts library research on the limitations of statistics in explaining geographical facts and writes notes
- Creativity and Imagination: The skill of asking questions as the learner role plays the methods of data collection
- Learning to Learn: The skill of investigation as the learner carries out research within the school on a selected geographical topic

Values:

- Integrity: Learner exhibits honesty as they carry out research within the school on a selected geographical topic
- Respect: Learner expresses patience as they brainstorm on the importance of statistics in Geography and makes presentation in class

Pertinent and Contemporary Issues (PCIs):

- Critical Thinking: Learner discusses the methods of data analysis and interpretation and makes presentation in class
- Social Cohesion: Learner works with others as they brainstorm on the importance of statistics in Geography

Strand	Sub- Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Practical Geography	**1.4 Geographic Information Systems (GIS)** **(13 lessons)**	By the end of the sub-strand, the learner should be able to: a) explain Geographic Information Systems (GIS), Global Positioning System (GPS) and Remote Sensing (RS) as geospatial technologies, b) describe components of GIS as used in geo-referencing information, c) examine the importance of GIS in geographical studies, d) apply GIS in locating key features in the locality, e) acknowledge the importance of GIS in day-to-day life.	The learner is guided to: • Brainstorm on GIS, GPS and RS as geospatial technologies and present in class • Discuss the components of GIS *(data, software, hardware, users and methods)* and present in class • Use print or digital resources to research on the importance of GIS in geographical studies and write notes • Convert geographic coordinates *(from decimal degrees to degrees, minutes and seconds)* and present in class • Use digital resources to locate points on the earth's surface and peer evaluate • Create posters on the importance of GIS in geographical studies and display in school	How is geospatial technology useful to humans?

Core Competencies to be developed:

- Learning to Learn: The skill of sharing learnt knowledge as the learner converts geographic coordinates and present in class
- Digital Literacy: The skill of interacting with technology as the learner uses digital resources to locate points on the earth's surface

Values:

- Responsibility: Learner offers leadership and guidance to others as they use print or digital resources to research on the importance of GIS in geographical studies
- Respect: Learner displays open-mindedness as they discuss the components of GIS

Pertinent and Contemporary Issues (PCIs):

- Social Cohesion: Learner works with others as they discuss the components of GIS
- Critical Thinking: Learner creates a poster on the importance of GIS in geographical studies
- Self-Awareness: Learner uses digital resources to locate points on the earth's surface

Assessment Rubric

Indicator	Exceeding Expectation	Meeting Expectation	Approaching Expectation	Below Expectation
Ability to analyse the branches of Geography for in-depth understanding of the subject	Analyses the branches of Geography for in-depth understanding of the subject with examples	Analyses the branches of Geography for in-depth understanding of the subject	Analyses branches of Geography for in-depth understanding of the subject omitting minor details	Analyses the branches of Geography for in-depth understanding of the subject omitting major details.
Explore the relationship between Geography and other disciplines for identification of career pathways	Explore the relationship between Geography and other disciplines for identification of career pathways with much variety	Explore the relationship between Geography and other disciplines for identification of career pathways	Explore the relationship between Geography and other disciplines for identification of career pathways with minimal variety	Explore the relationship between Geography and other disciplines for identification of career pathways with no variety
Ability to interpret relief, drainage and vegetation on topographical maps for resource mapping	Interprets relief, drainage and vegetation on topographical maps for resource mapping comprehensively	Interprets relief, drainage, and vegetation on topographical maps for resource mapping	Interprets relief, drainage and vegetation on topographical maps for resource mapping with minor errors	Interprets relief, drainage, and vegetation on topographical maps for resource mapping with major errors
Ability to draw sketch sections from topographical maps for interpreting relief	Draws sketch sections from topographical maps for interpreting relief creatively	Draws sketch sections from topographical maps for interpreting relief	Draws sketch sections from topographical maps for interpreting relief with minor errors	Draws sketch sections from topographical maps for interpreting relief with major errors
Ability to examine the	Examines methods of	Examines methods of	Examines methods of	Examines methods of

Indicator	Exceeding Expectation	Meeting Expectation	Approaching Expectation	Below Expectation
methods of data collection, analysis and presentation in geographical studies	data collection, analysis and presentation in geographical studies with examples	data collection, analysis and presentation in geographical studies	data collection, analysis and presentation in geographical studies with minor errors	data collection, analysis and presentation in geographical studies with major errors
Ability to collect, analyse, interpret and present statistical data in a Geographical phenomenon	Collects, analyses, interprets and presents statistical data in a Geographical phenomenon with examples	Collects, analyses, interprets and presents statistical data in a Geographical phenomenon	Collects, analyses, interprets and presents statistical data in a Geographical phenomenon omitting minor details	Collects, analyses, interprets and presents statistical data in a Geographical phenomenon omitting major details
Ability to describe components of GIS as used in geo-referencing information	Describes components of GIS as used in geo-referencing information exhaustively	Describes components of GIS as used in geo-referencing information	Describes components of GIS as used in geo-referencing information omitting minor details	Describes components of GIS as used in geo-referencing information omitting major details
Ability to apply GIS in locating the position of the school	Applies GIS in locating the position of the school creatively	Applies GIS in locating the position of the school	Applies GIS in locating the position of the school with minor errors	Applies GIS in locating the position of the school with major errors

STRAND 2.0: NATURAL SYSTEMS AND PROCESSES

Strand	Sub-Stand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question (s)
2.0 Natural Systems and Processes	**2.1 Rocks** **(18 lessons)**	By the end of the sub-strand, the learner should be able to: a) examine the classification of rocks according to the mode of formation and age, b) describe the distribution of rocks in Kenya, c) analyse the significance of rocks in Kenya, d) sample rock types in your locality, e) appreciate the significance of rocks in Kenya.	The learner is guided to: • Brainstorm the meaning of rocks and share in class • Use print or digital resources to establish the classification of rocks *(according to mode of formation and age)*, download images and display in class • Discuss the characteristics of rocks (*igneous, metamorphic and sedimentary*) and make presentations in class • Draw a sketch map of Kenya showing the distribution of rocks and display strategically in the school • Carry out library research on the significance of rocks in Kenya and write an essay • Carry out field study on rocks within the local environment, collect, classify and display the samples in class	Why are there different types of rocks?

			• Make a collage showing the distribution of rocks in Kenya and display in class	

Core Competencies to be developed:

- Creativity and Imagination: The skill of making connections as the learner makes a collage showing the distribution of rocks in Kenya and displays in class
- Learning to Learn: The skill of investigation as the learner carries out library research on the significance of rocks in Kenya
- Citizenship: The skill of national and cultural identity as the learner draws sketch maps of Kenya showing the distribution of rocks

Values:

- Patriotism: Learner shows citizenship as they draw sketch maps of Kenya showing the distribution of rocks
- Unity: Learner embraces each other as they carry out field study on rocks within the local environment

Pertinent and Contemporary Issues (PCIs):

- Environmental Education: Learner discusses the characteristics of rocks and make presentations in class
- Safety in class and school environment: Learner carries out field study on rocks within the local environment, collects, classifies and display the samples in class
- First Aid: Learner carries out field study on rocks within the local environment.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Natural Systems and Processes	**2.2 Folding** (12 lessons)	By the end of the sub-strand, the learner should be able to: a) distinguish the types of folds resulting from tectonic forces, b) describe the resultant features of folding on the Earth's surface, c) analyse the significance of folding and the resultant features, d) illustrate the distribution of fold mountains in the world, e) appreciate the influence of folding and the resultant features on human activities.	The learner is guided to: • Brainstorm on the meaning of folding and share in class • Discuss types of folds resulting from tectonic forces and make presentations in class • Use print or digital resources to research on the resultant features of folding on the Earth's surface and make notes • Draw sketches of the resultant features of folding on the Earth's surface and display in class • Model resultant features of folding on the Earth's surface and display in class • Draw a world map showing the distribution of fold mountains and display in class • Debate on the significance of folding and the resultant features	How does folding influence our day-to-day life?

Core Competencies to be developed:

- Citizenship: The skill of global awareness as the learner draws the world map showing the distribution of fold mountains
- Creativity and Imagination: The skill of making connections as the learner draws sketches of resultant features of folding on the Earth's surface

Values:

- Unity: Learner portrays team spirit as they take turns when brainstorming on the meaning of folding
- Respect: Learner displays humility as they discuss on types of folds resulting from tectonic forces

Pertinent and Contemporary Issues (PCIs):

- Environmental Education: Learner discusses on the types of folds resulting from tectonic forces
- Creativity: Learner draws the world map showing the distribution of fold mountains and display in class
- Assertiveness: Learner debates on the significance of folding and the resultant features

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
2.0 Natural Systems and Processes	**2.3 Vulcanicity** **(13 lessons)**	By the end of the sub-strand, the learner should be able to: a) investigate the causes of vulcanicity in the Earth, b) describe features resulting from vulcanic activities in the world, c) illustrate the global distribution of features due to vulcanicity, d) examine the significance of vulcanicity on human activities, e) acknowledge the effects of vulcanicity on the environment.	The learner is guided to: • Brainstorm on the meaning and causes of vulcanicity in Earth and make notes • Use print or digital resources to research on features resulting from vulcanicity in the world and make presentations in class • Draw the intrusive features resulting from vulcanicity in the world and display in class • Model the extrusive features resulting from vulcanicity in the world and display in class • Watch video clips on volcanic activities and take notes • Simulate the eruption of volcanic features • Create posters of volcanic features and display in the school compound • Make a collage on distribution of volcanic features in Kenya and display	Why study vulcanicity?

			in class • Engage a resource person on volcanicity disaster preparedness and management strategies and take notes	

Core Competencies to be developed:

- Self-Efficacy: The skill of self-awareness as the learner creates a poster of volcanic features and displays in the school compound
- Learning to Learn: The skill of working collaboratively as the learner simulates the eruption of volcanic features
- Digital Literacy: The skill of interacting with digital technology as the learner uses digital resources to research on features resulting from vulcanicity in the world

Values:

- Peace: Learner exhibits tolerance as they make collage on the distribution of volcanic features in the world
- Integrity: Learner portrays self-discipline as they use digital resources to research on features resulting from vulcanicity in the world

Pertinent and Contemporary Issues (PCIs):

- Environmental Education: Learner creates a poster of volcanic features and display in the school compound
- Creative Thinking: Learner makes a collage on the distribution of volcanic features in the world

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question(s)
2.0 Natural Systems and Processes	**2.4 Earthquakes** **(10 lessons)**	By the end of the sub-strand, the learner should be able to: a) examine causes of earthquakes on Earth, b) illustrate the distribution of earthquake zones in the world, c) investigate the effects of earthquakes on the environment, d) design disaster preparedness and management strategies for coping with effects of earthquakes, e) appreciate the understanding of earthquakes for disaster preparedness and management.	The learner is guided to: • Brainstorm on the meaning, types and causes of earthquakes in the world and share in class • Draw a world map showing the distribution of earthquake zones and display in class • Discuss the scales used in measurement of earthquakes *(Ritcher and Mercalli)* and present in class • Watch video clips on the effects of earthquakes on the environment and take notes • Engage a resource person on disaster preparedness and management strategies and take notes • Make communication messages on disaster preparedness and management strategies and display in the school compound	Why are earthquakes of concern to humans?

Core Competencies to be developed:

- Digital Literacy: The skill of interacting with technology as the learner watches video clips on the effects of earthquakes on the environment
- Creativity and Imagination: The skill of making connections as the learner draws world maps showing the distribution of earthquake zones and displays in class

Values:

- Unity: Learner displays team spirit as they brainstorm on the meaning, types and causes of earthquakes in the world
- Respect: Learner displays etiquette as they interact with a resource person on disaster preparedness and management strategies

Pertinent and Contemporary Issues (PCIs):

- Environmental Education: Learner watches video clips on the effects of earthquakes on the environment and takes notes
- Self-Esteem: Learner draws world maps showing the distribution of earthquake zones

Suggested Assessment Rubric

Indicator	Exceeding Expectation	Meeting Expectation	Approaching Expectation	Below Expectation
Ability to examine the classification of rocks according to mode of formation and age	Examines the classification of rocks according to mode of formation and age giving examples	Examines the classification of rocks according to mode of formation and age	Examines some classification of rocks according to mode of formation and age omitting minor details	Examines the classification of rocks according to mode of formation and age omitting major details
Ability to describe the distribution of rocks in Kenya	Describes the distribution of rocks in Kenya with illustrations	Describes the distribution of rocks in Kenya	Describes the distribution of rocks in Kenya with minor errors	Describes the distribution of rocks in Kenya with major errors
Ability to explore the types of movements within the earth	Explores the types of movements within the Earth with illustrations	Explores the types of movements within the Earth	Explores the types of movements within the Earth with minor omissions	Explores the types of movements within the Earth with major omissions
Ability to examine the theory of Continental Drift to account for the present-day positions of continents	Examines the theory of Continental Drift to account for the present-day positions of continents with illustrations	Examines the theory of Continental Drift to account for the present-day positions of continents	Examines the theory of Continental Drift to account for the present-day positions of continents with minor errors	Examines the theory of Continental Drift to account for the present-day positions of continents with major errors
Ability to distinguish the types of folds resulting from tectonic	Distinguishes the types of folds resulting from tectonic forces with	Distinguishes the types of folds resulting from tectonic forces	Distinguishes the types of folds resulting from tectonic forces omitting	Distinguishes the types of folds resulting from tectonic forces omitting

Indicator	Exceeding Expectation	Meeting Expectation	Approaching Expectation	Below Expectation
forces	illustrations		minor details	major details
Ability to analyse the significance of folding and the resultant features	Analyses the significance of folding and the resultant features giving examples	Analyses the significance of folding and the resultant features	Analyses the significance of folding and the resultant features omitting minor details	Analyses the significance of folding and the resultant features omitting major details
Ability to investigate the causes of vulcanicity on Earth	Investigates the causes of vulcanicity on Earth exhaustively	Investigates the causes of vulcanicity on Earth	Investigates the causes of vulcanicity on Earth omitting minor details	Investigates the causes of vulcanicity on Earth omitting major details
Ability to describe features resulting from vulcanicity in the world	Describes features resulting from vulcanicity in the world with examples	Describes features resulting from vulcanicity in the world	Describes features resulting from vulcanicity in the world with minor errors	Describes features resulting from vulcanicity in the world with major errors
Ability to illustrate the distribution of earthquake zones in the world	Illustrates the distribution of earthquake zones in the world creatively	Illustrates the distribution of earthquake zones in the world	Illustrates the distribution of earthquake zones in the world omitting minor details	Illustrates the distribution of earthquake zones in the world omitting major details
Ability to investigate the effects of earthquakes on the environment	Investigates the effects of earthquakes on the environment exhaustively	Investigates the effects of earthquakes on the environment	Investigates the effects of earthquakes on the environment omitting minor details	Investigates the effects of earthquakes on the environment omitting major details

STRAND 3.0: HUMAN AND ECONOMIC ACTIVITIES

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question (s)
3.0 Human and Economic Activities	**3.1 Agriculture (15 Lessons)**	By the end of the sub-strand, the learner should be able to: a) explore types of agriculture in the world, b) explain the importance of agriculture in the society, c) analyse the trends in agriculture in Africa, d) examine challenges facing agriculture in Kenya, e) design strategies towards enhancing agricultural productivity in Kenya, f) appreciate the role of agriculture towards food security in Kenya.	The learner is guided to: • Brainstorm on the types of agriculture in the world (*subsistence, commercial, urban agriculture*) and present in class • Engage a resource person on the importance of agriculture in the society • Use print or digital resources to research on trends in agriculture in Africa • Watch video clips on urban agriculture and hydroponics and take notes • Develop communication messages on challenges facing agriculture in Kenya • Conduct a field study within the locality on strategies for enhancing agricultural productivity • Create posters on possible strategies towards enhancing agricultural productivity in Kenya	How is the future of agriculture in Kenya?

Core Competencies to be developed:

- Learning to Learn: The skill of carrying out research as the learner conducts a field study within the locality on strategies for enhancing agricultural productivity
- Citizenship: The skill of active community life skills as the learner conducts a field study within the locality on strategies for enhancing agricultural productivity

Values:

- Social justice: Learner accords privileges to others without favour as they engage a resource person on the importance of agriculture in the society
- Patriotism: Learner displays dedication as they create posters on possible strategies towards enhancing agricultural productivity in Kenya

Pertinent and Contemporary Issues (PCIs):

- Social cohesion: Learner conducts a field study within the locality on strategies for enhancing agricultural productivity
- Assertiveness: Learner engages a resource person on the importance of agriculture in the society

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question (s)
3.0 Human and Economic Activities	**3.2 Mining** **(20 lessons)**	By the end of the sub-strand, the learner should be able to: a) examine the factors influencing occurrence and exploitation of minerals, b) describe the methods used in extraction of minerals in the world, c) explore the mining of limestone in Kenya, diamond in Botswana and iron ore in Australia, d) analyse the effects of mining on the environment and possible solutions, e) apply statistical skills to establish trends in mineral production in East Africa, f) recognize the significance of minerals to the economy of Kenya.	The learner is guided to: • Brainstorm on the meaning of minerals and mining and share in class • Carry out library research to establish occurrence of minerals and make notes • Discuss the factors influencing occurrence and exploitation of minerals and present in class • Use print or digital resources to research on methods used in extraction of minerals and make notes • Watch video clips on methods used in extraction of minerals and take notes • Watch documentaries on mining of limestone in Kenya, diamond in Botswana, and iron ore in Australia and take notes • Write an article on the effects of mining on environment and possible solutions and publish • Create communication messages on the importance of rehabilitating mining	How can we exploit minerals sustainably?

			sites and display on the school noticeboards	

Core Competencies to be developed:

- Citizenship: The skill of global awareness as the learner watches documentaries on mining of limestone in Kenya, diamond in Botswana and iron ore in Australia
- Digital Literacy: The skill of interacting with technology as the leaner uses digital resources to research on methods used in extraction of minerals
- Communication and Collaboration: The skill of writing as the learner writes an article on the effects of mining on environment and possible solutions and publishes

Values:

- Unity: Learner works together to create communication messages on the importance of rehabilitating mining sites
- Respect: Learner respects opinions of others as they discuss factors influencing occurrence and exploitation of minerals and presents in class

Pertinent and Contemporary Issues (PCIs):

- Self-Awareness: Learner confidently creates communication messages on the importance of rehabilitating mining sites and displays in the school noticeboards
- Environmental Education: Learner participates in writing an article on the effects of mining on environment and possible solutions and publishes

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question (s)
3.0 Human and Economic Activities	**3.3 Energy** **(20 lessons)**	By the end of the sub-strand, the learner should be able to: a) examine the types and sources of energy for domestic and industrial use, b) analyse the development of renewable energy in Kenya and the selected countries, c) explore the significance of renewable energy on socio-economic development, d) manage and conserve energy in the community, e) appreciate sustainable use of energy for socio-economic development.	The learner is guided to: • Brainstorm on the meaning of energy and share in class • Carry out library research on the types and sources of energy and make notes • Watch video clips on the development of renewable energy in Kenya and the selected countries (*Hydroelectric power in Uganda, Geothermal energy in Italy, Solar energy in Vietnam and Wind energy in Spain)* and take notes • Discuss the development of renewable energy in Kenya and the selected countries and make notes • Use print or digital resources to research on the significance of renewable energy on socio-economic development and make presentations in class • Develop communication messages on management and conservation of renewable energy and display strategically	Why renewable energy?

			in the school • Carry out a field study on renewable energy within the locality and write a report • Develop posters on consumers' rights related to renewable energy production and consumption and display in the school • Make energy-saving devices using locally available materials and showcase in the school	

Core Competencies to be developed:

- Critical Thinking and Problem Solving: The skill of open-mindedness as the learner develops energy-saving devices using locally available materials
- Learning to Learn: The skill of carrying out research as the learner carries out a field study on energy within the locality
- Citizenship: The skill of global awareness as the learner watches video clips on development of renewable energy in Kenya and the selected countries

Values:

- Unity: Learner cooperates as they carry out field study on energy within the locality and write a report
- Responsibility: Learner takes safety precautions as they make energy-saving devices using locally available materials and showcase in the school

Pertinent and Contemporary Issues (PCIs):

- Financial Literacy: Learner makes energy-saving devices using locally available materials
- Environmental education: Learner carries out field study on renewable energy within the locality and writes a report
- Safety and security: Learner carries out a field study on renewable energy within the locality

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
3.0 Human and Economic Activities	**3.4 Industry** **(20 lessons)**	By the end of the sub strand the learner should be able to: a) explore the types of industries in the world, b) establish the factors influencing location and development of industries in the world, c) analyse the development of industries in Kenya and the selected countries, d) examine the challenges facing industries and possible solutions in Kenya, e) model a cottage industry in the school, f) acknowledge the significance of industries in the society.	The learner is guided to: • Brainstorm on industry and industrialization and share in class • Discuss the types of industries in the world and present in class • Use print or digital resources to research on factors influencing location and development of industries in the world and make notes • Draw a map of Kenya showing the location of major industries and display in class • Debate on the significance of industries in Kenya and write a report • Engage a resource person on problems facing industries and their solutions in Kenya and take notes • Watch video clips on *Jua Kali industries in Kenya (including cultural), cottage industries in India and car manufacturing in Japan* and take notes	What is the status and prospects of industrialization in Kenya?

			• Discuss development of *Jua Kali industries in Kenya (including cultural), cottage industries in India and car manufacturing in Japan* and present in class • Write a request for establishing a cottage industry and model the industry in the school • Write an article on the problems associated with industrialization and their possible solutions in Kenya and publish • Carry out field study on effects of industries on environment (*pollution, informal settlements among others)* and write a report • Create a portfolio on effects of industries on environment and display in the school • Develop communication messages on consumer concerns on development of industries	

Core Competencies to be developed:

- Critical Thinking and Problem Solving: The skill of open-mindedness as the learner writes a request and models a cottage

industry in the school
- Creativity and Imagination: The skill of making connections as the learner carries out a field study on effects of industries on environment

Values:
- Social Justice: Learner has freedom as they develop communication messages on consumer concerns about development of industries
- Patriotism: Learner exhibits culture awareness as they write a request for establishing a cottage industry and models the industry in the school

Pertinent and Contemporary Issues (PCIs):
- Financial Literacy: Learner writes a request for establishing a cottage industry and model the industry in the school
- Consumer Education: Learner develops communication messages on consumer concerns on development of industries

Suggested Assessment Rubric

Indicator	Exceeding Expectation	Meeting Expectation	Approaching Expectation	Below Expectation
Ability to explore the types of agriculture in the world	Explores the types of agriculture in the world with examples	Explores the types of agriculture in the world	Explores the types of agriculture in the world omitting minor details	Explores the types of agriculture in the world omitting major details
Ability to explain the importance of agriculture in the society	Explains the importance of agriculture in the society exhaustively	Explains the importance of agriculture in the society	Explains the importance of agriculture in the society with minor details	Explains the importance of agriculture in the society with major details
Ability to describe the methods used in extraction of minerals in the world	Describes the methods used in extraction of minerals in the world with illustrations	Describes the methods used in extraction of minerals in the world	Describes the methods used in extraction of minerals in the world omitting minor errors	Describes the methods used in extraction of minerals in the world omitting major errors
Ability to explore the mining of limestone in Kenya diamond in Botswana and iron ore in Australia	Explores the mining of limestone in Kenya, diamond in Botswana and iron ore in Australia exhaustively	Explores the mining of limestone in Kenya, diamond in Botswana and iron ore in Australia	Explores the mining of limestone in Kenya, diamond in Botswana and iron ore in Australia with minor omissions	Explores the mining of limestone in Kenya, diamond in Botswana and iron ore in Australia with major omissions

Indicator	Exceeding Expectation	Meeting Expectation	Approaching Expectation	Below Expectation
Ability to examine the types and sources of energy for domestic and industrial use	Examines the types and sources of energy for domestic and industrial use giving examples	Examines the types and sources of energy for domestic and industrial use	Examines the types and sources of energy for domestic and industrial use with minor errors	Examines the types and sources of energy for domestic and industrial use with major errors
Ability to explore the types of industries in the world	Explores the types of industries in the world giving examples	Explores the types of industries in the world	Explores the types of industries in the world but omits minor details	Explores the types of industries in the world but omits major details

APPENDIX: SUGGESTED ASSESSMENT METHODS, SUGGESTED LEARNING RESOURCES AND NON-FORMAL ACTIVITIES

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
1.0 Practical Geography	**1.1 Introduction to Geography**	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Portfolios f) Anecdotal records g) Checklists	• Approved textbooks and other printed resources • Photographs • Pictures • Digital resources • Library • Display boards	• Engage with resource persons on careers in Geography • Participate in work shadowing on careers in Geography

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
	1.2 Map Reading and Interpretation	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Portfolios f) Anecdotal records g) Checklists	• Local and extended environment • Topographical Maps • Photographs • Pictures • Paintings • Digital resources • Approved textbooks and other printed resources • Library • Flipcharts • Whiteboards and marker pens • Display boards	• Watch video clips on relief, drainage, and vegetation and take short notes
	1.3 Statistical Methods	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Portfolios f) Anecdotal records	• Local and extended environment • Digital resources • Approved textbooks • Printed resources • Charts	• Role play the methods of data collection in Geography

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
		g) Checklists h) Projects	• Flipcharts • Display boards • Whiteboards and marker pens • Smart boards	
	1.4 Geographical Information Systems	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Portfolios f) Anecdotal records g) Checklists h) Projects	• Local and extended environment • Realia • Digitizers • Maps • Digital resources • Approved textbooks and other printed resources • Display boards • Wall charts • Flip charts • Whiteboards and marker pens	• Use digital resources to locate points on the earth's surface and share among peers • Create posters on the importance of GIS in geographical studies and display

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
2.0 Natural Systems and Processes	**2.1 Rocks**	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects f) Portfolios g) Anecdotal records h) Checklists	• Photographs and Pictures • Local and extended environment • Maps • Realia • Manilla papers • Gunny bags • Cartons • Digital resources • Charts, marker pens • Sawdust • Sand • Approved text books and other printed resources • Library resources • Museums • Rock artefacts • Whiteboards and marker pens • Rock Display Case	• Draw a sketch map of Kenya showing the distribution of rocks • Carry out a field study on rocks within the local environment and write reports • Make a collage showing the distribution of rocks in Kenya and display

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
	2.2 Earth Movements	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects f) Portfolios g) Anecdotal records h) Checklists	• Photographs • Pictures • Local and extended environment • Maps • Realia • Digital resources • Charts and marker pens • Approved text books and other printed resources • Library resources • Whiteboards and marker pens	• Watch video clips on the theory of Continental Drift and Plate Tectonics • Sketch the world map showing the distribution of continents • Use print or digital resources to research on evidences of Continental Drift theory • Model the present-day positions of the continents
	2.3 Folding	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects f) Portfolios g) Anecdotal	• Photographs • Pictures • Local and extended environment • Maps • Realia • Plain papers	• Model some resultant features of folding on the earth's surface • Create a portfolio of resultant features associated with folding

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
		records h) Checklists	• Manilla papers • Plasticine • Digital resources • Charts and marker pens • Approved text books and other printed resources • Library resources • Whiteboards and marker pens • Paper Mache	
	2.4 Vulcanicity	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects f) Portfolios g) Anecdotal records h) Checklists	• Photographs • Pictures • Local and extended environment • Maps • Resource persons • Realia • Plain papers • Manilla papers • Plasticine	• Model the extrusive features resulting from vulcanicity in the world • Watch video clips on volcanic activities and taking notes • Simulate volcanic eruptions • Create posters of volcanic features and display

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
			• Digital resources • Charts and marker pens • Approved text books and other printed resources • Building debris/stones/bricks • Paper Mache • Library resources • Whiteboards and marker pens	• Engage a resource person on disaster preparedness and management strategies related to vulcanicity
	2.5. Earthquakes	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects f) Portfolios g) Anecdotal records h) Checklists	• Photographs • Pictures • Local and extended environment • Maps • Resource persons • Plain papers • Manilla papers • Digital resources • Charts and marker pens	• Watch video clips on the effects of earthquakes on the environment and taking notes • Engage a resource person on disaster preparedness and management strategies related to earthquakes

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
			• Approved text books and other printed resources • Library resources • Whiteboards and marker pens	
3.0 Human and Economic Activities	**3.1 Agriculture**	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects	• Photographs • Model farms • Local and extended environments • Pictures	• Establish a kitchen garden • Visit demonstration farms in their locality • Visit agricultural shows/ exhibition
3.0 Human and Economic Activities	**3.2 Mining**	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects f) Portfolios g) Anecdotal records h) Checklists	• Photographs • Pictures • Local and extended environment • Maps • Manilla papers • Digital resources • Charts and marker pens • Approved text books and	• Watch video clips on methods used in extraction of minerals • Watch documentaries on mining of limestone in Kenya, diamond in Botswana and iron ore in Australia • Write an article on the effects of mining on

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
			other printed resources • Library resources • Whiteboards and marker pens	environment and possible solutions to be published • create communication messages on the importance of rehabilitating mining sites
	3.3 Energy	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects f) Portfolios g) Anecdotal records h) Checklists	• Photographs • Pictures • Local and extended environment • Maps • Manilla papers • Digital resources • Charts and marker pens • Approved text books and other printed resources • Library resources • Whiteboards and marker pens	• Watch video clips on renewable energy in Kenya and the selected countries (*Hydroelectric power in Uganda, Geothermal energy in Italy, Solar energy in Vietnam and Wind energy in Spain)* • Develop communication messages on management and conservation of energy • Develop an energy-saving device using locally available materials

Strand	Sub Strand	Suggested Assessment Methods	Suggested Learning Resources	Non-Formal Activities
	3.4 Industry	a) Oral Questions b) Written tests c) Observation d) Questionnaires e) Projects f) Portfolios g) Anecdotal records h) Checklists	• Photographs • Pictures • Local and extended environment • Maps • Digital resources • Charts and marker pens • Approved text books and other printed resources • Library resources • Whiteboards and marker pens	• Engage a resource person on problems facing industries and their solutions in Kenya • Watch video clips on *Jua Kali in Kenya (include cultural industries), cottage industries in India, car manufacturing in Japan* • Write an article on the problems associated with industrialization and their possible solutions in Kenya and publish.

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