REPUBLIC OF KENYA

MINISTRY OF EDUCATION

UPPER PRIMARY LEVEL DESIGNS

SUBJECT

AGRICULTURE

GRADE 6

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

JANUARY 2021

First Published in 2021

ISBN:000-0000-00-000-0

Published and printed by Kenya Institute of Curriculum Development

FOREWORD

The Government of Kenya is committed to ensuring that policy objectives for education, training and research meet the aspirations of the Kenya Constitution 2010, the Kenya Vision 2030, the United Nations Sustainable Development Goals (SDGs) and the Regional and Global conventions to which Kenya is a signatory. In relation to this, the Ministry of Education (MoE) embarked on curriculum reforms that culminated in the full implementation of the Competency Based Curriculum (CBC) in January, 2019 from the level of Early Years Education (Pre-Primary 1 and 2, and Lower Primary Grade 1, 2 and 3). This was followed by the roll out of the curriculum in Grade 4 in 2020. In readiness for the progression of the Grade 4 cohort, the curriculum designs for Grade 5 were developed.

Grade 6 designs have now been developed. These curriculum designs are intended to ensure that the core competencies attained by learners at Grade 5 are enhanced even as further opportunities are provided for identification and nurturing of every learner's potential as learners prepare to transit to Junior Secondary school.

The curriculum designs include the general and specific learning outcomes for the learning areas (subjects) as well as strands and sub - strands. The designs also outline suggested learning experiences, key inquiry questions, assessment rubric, pertinent and contemporary issues, values and Community Service Learning (CSL) activities.

It is my hope that all Government agencies and other stakeholders in Education will use the designs to plan for effective and efficient implementation of the Competency Based Curriculum.

PROF. GEORGE A. O. MAGOHA, MBS, EBS, CBS
CABINET SECRETARY
MINISTRY OF EDUCATION

PREFACE

The Ministry of Education (MoE) is currently implementing the second phase of the curriculum reforms with the roll out of the Competency Based Curriculum (CBC) at Grade 4 in 2020. This is the first cohort of the Upper Primary level in the new education structure. Grade 5 and 6 designs have also been developed.

Grade 6 being the final stage of the upper primary level is very critical in the realization of the Vision and Mission of the on-going curriculum reforms as enshrined in the Sessional Paper No. I of 2019 whose title is: Towards Realizing Quality, Relevant and Inclusive Education and Training for Sustainable Development in Kenya. The Sessional Paper explains the shift from a Content - Focused Curriculum to a focus on Nurturing every Learner's potential.

Therefore, the Grade 6 curriculum designs are intended to enhance the learners' development in the CBC core competencies, namely: Communication and Collaboration, Critical Thinking and Problem Solving, Creativity and Imagination, Citizenship, Digital Literacy, Learning to Learn and Self-efficacy.

The curriculum designs also continue to link the activities in the main learning areas to the other aspects of the CBC including links to Pertinent and Contemporary Issues (PCIs), Values and Community Service Learning (CSL). The designs also offer several suggested interactive learning activities and variety of assessment techniques. It is expected that the curriculum designs will guide the teachers to enable learners attain the expected learning outcomes for Grade 6 and prepare them effectively for the next Grade.

It is my expectation that the teacher will use the designs to make learning interesting, exciting and enjoyable.

DR. BELIO R. KIPSANG, CBS
PRINCIPAL SECRETARY
STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION
MINISTRY OF EDUCATION

ACKNOWLEDGEMENT

The Kenya Institute of Curriculum Development (KICD) Act Number 4 of 2013 (Revised 2018) mandates the Institute to develop curricula and curriculum support materials for basic and tertiary education and training, below the university. The curriculum development process for any level involves thorough research, international benchmarking and robust stakeholder engagement. Through this systematic and consultative process, the KICD conceptualised the Competency Based Curriculum (CBC) as captured in the Basic Education Curriculum Framework (BECF), that responds to the demands of the 21st Century and the aspirations captured in the Kenya Constitution 2010, Kenya and the Kenya Vision 2030, East African Commission Protocol and the United Nations Sustainable Development Goals.

KICD obtains its funding from the Government of Kenya to enable the successful achievement of the stipulated mandate and implantation of the Government and Sector (Ministry of Education (MoE) plans. The Institute also receives support from development partners targeting specific programmes. The Grade 6 curriculum designs have been developed with the support of the World Bank through the Kenya Secondary Education Quality Improvement Program (SEQIP) commissioned by the MoE. Therefore, the Institute is very grateful for the support of the Government of Kenya, through the MoE and the development partners for the policy, resource and logistical support. Specifically, special thanks to the Cabinet Secretary – MoE and the Principal Secretary – State Department of Early Learning and Basic Education,

We also wish to acknowledge the KICD curriculum developers and other staff, all teachers, educators who took part as panelists; the Semi-Autonomous Government Agencies (SAGAs) and representatives of various stakeholders for their various roles in the development of the Grade 6 curriculum designs. In relation to this, we acknowledge the support of the Secretary - Teachers Service Commission (TSC) and the Chief Executive Officer of the Kenya National Examinations Council (KNEC) for their support in the process of developing these designs.

Finally, we are very grateful to the KICD Council Chairperson Dr. Sara Ruto and other members of the Council for very consistent guidance in the process. We assure all teachers, parents and other stakeholders that these curriculum designs will effectively guide the implementation of the CBC at Grade 6 and preparation of learners for Grade 7.

PROF. CHARLES O. ONG'ONDO
DIRECTOR/CHIEF EXECUTIVE OFFICER
KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

TABLE OF CONTENTS

NATIONAL GOALS OF EDUCATION

1. **Foster nationalism, patriotism, and promote national unity**

   Kenya's people belong to different communities, races and religions and should be able to live and interact as one people. Education should enable the learner acquire a sense of nationhood and patriotism. It should also promote peace and mutual respect for harmonious co-existence.

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

   Education should prepare the learner to play an effective and productive role in the nation.

   a) **Social Needs**

      Education should instil social and adaptive skills in the learner for effective participation in community and national development.

   b) **Economic Needs**

      Education should prepare a learner with requisite competences that support a modern and independent growing economy. This should translate into high standards of living for every individual.

   c) **Technological and Industrial Needs**

      Education should provide the learner with necessary competences for technological and industrial development in tandem with changing global trends.

3. **Promote individual development and self-fulfilment**

   Education should provide opportunities for the learner to develop to the fullest potential. This includes development of one's interests, talents and character for positive contribution to the society.

4. **Promote sound moral and religious values**

   Education should promote acquisition of national values as enshrined in the Constitution. It should be geared towards developing a self- disciplined and ethical citizen with sound moral and religious values.

5. **Promote social equity and responsibility**

   Education should promote social equity and responsibility. It should provide inclusive and equitable access to quality and differentiated education; including learners with special educational needs and disabilities. Education should also provide the learner with opportunities for shared responsibility and accountability through service learning.

6. **Promote respect for and development of Kenya's rich and varied cultures**

   Education should instil in the learner appreciation of Kenya's rich and diverse cultural heritage. The learner should value own and respect other people's culture as well as embrace positive cultural practices in a dynamic society.

7. **Promote international consciousness and foster positive attitudes towards other nations**

   Kenya is part of the interdependent network of diverse peoples and nations. Education should therefore enable the learner to respect, appreciate and participate in the opportunities within the international community. Education should also facilitate the learner to operate within the international community with full

   knowledge of the obligations, responsibilities, rights and benefits that this membership entails.

8. **Good health and environmental protection**

   Education should inculcate in the learner the value of physical and psychological well-being for self and others. It should promote environmental preservation and conservation, including animal welfare for sustainable development.

SUGGESTED TIME ALLOCATION

#	Subject	Lessons Per Week
	Mathematics	5
	Physical and Health Education	5
	English language	4
	Kiswahili Language KSL for learners who are deaf	4
	Science and Technology	4
	Agriculture	3
	Creative Arts (Art and craft, Music)	3
	Home science	3
	Religious Education (CRE/IRE/ HRE)	3
	Social Studies (Citizenship, Geography, History)	3
	Other Languages	2
	Pastoral Programme and Instructions	1
	TOTAL	**40**

GENERAL LEARNING OUTCOMES FOR MIDDLE SCHOOL EDUCATION

By the end of Middle School, the learner should be able to:

1) Apply literacy, numeracy skills and logical thinking appropriately in self-expression,
2) Communicate effectively in diverse contexts,
3) Apply digital literacy skills appropriately for communication and learning in day-to-day life,
4) Practise hygiene, appropriate sanitation and nutrition to promote health,
5) Explore, manipulate, manage and conserve the environment effectively for learning and sustainable development,
6) Demonstrate ethical behaviour and exhibit good citizenship as a civic responsibility,
7) Demonstrate social skills, spiritual and moral values for peaceful co-existence,
8) Demonstrate appreciation of the country's rich, diverse cultural heritage for harmonious co-existence,
9) Manage pertinent and contemporary issues in society effectively.

AGRICULTURE

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

ESSENCE STATEMENT

Kenya requires competent manpower for its agro-based economy. Agriculture for upper primary level will build on competencies introduced in Early Years Education under Environmental Activities contributing to human capacity development. The learning experiences will involve active learner participation conducted through practical and experiential learning activities to develop applicable competencies for sustainable agriculture. The curriculum will focus on developing skills for production of indigenous and exotic crops and domestic animals through innovative agricultural practices and use of limited resources to enhance food security. The acquired knowledge, skills and attitudes will form a foundation for development of agricultural competencies for lower secondary and beyond.

General learning outcomes

By the end of upper primary, the learner should be able to:

1. Participate actively in agricultural activities for environmental conservation.
2. Use scarce agricultural resources through innovative practices to contribute towards nutrition and food security.
3. Rear small domestic animals as profitable agricultural enterprise for self-sustainability and economic development.
4. Apply technological skills, digital and media resources to enhance sustainable agricultural practices.
5. Appreciate agriculture as a worthy niche for hobby, career development, further education and training.

Grade 6

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Conserving our Environment	1.1 Soil Erosion Control **(10 lessons)**	By the end of the Sub Strand the learner should be able to; a) explain the meaning of soil erosion in the environment, b) identify types of soil erosion in the environment, c) differentiate between splash and sheet erosion in the environment, d) differentiate between rill and gulley erosion in the environment, e) control soil erosion in the school environment, f) appreciate the role of soil conservation in maintaining agricultural environment.	• In pairs, learners to brainstorm and share experiences on types of soil erosion. • Learners to visit the neighbouring environment to identify different types of soil erosion *(Splash and sheet erosion; rill and gulley erosion)*. • Learners to watch video clips to differentiate types of soil erosion. • Learners to use experiment method to demonstrate how splash and sheet erosion occurs. • Learners to demonstrate how rill and gulley erosion occurs. • Learners to brainstorm on how splash and sheet erosion could be controlled.	1. How does erosion occur? 2. How is soil erosion controlled?

			• Learners to brainstorm on how rill and gulley erosion could be controlled. • In groups, learners to control various types of soil erosion within the school compound or in the community. • Learners to discuss and identify eroded places in the community and measures that they could initiate to control soil erosion.	
Core competencies to be developed: Critical thinking in determining types of soil erosion, eroded places and problem solving in designing and implementing soil control measures.				
PCIs: Environmental awareness on soil degradation in the environment.			**Values:** Patriotism: taking active role in individual and cooperative roles of mitigating erosion in school or in the neighboring community.	
Links to other subjects: Science and technology in designing and constructing structures for controlling soil erosion.			**Suggested community service Learning activities:** Learners to liaise with local community leaders to initiate a soil conservation activity in a popular soil degraded site in the locality.	

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Explaining the meaning of soil erosion in the environment	Adequately and proficiently explains the meaning of soil erosion in the environment	Adequately explains the meaning of soil erosion in the environment	Partially explains the meaning of soil erosion in the environment	Partially explains the meaning of soil erosion in the environment when probed.
Differentiating types of soil erosion	Accurately and precisely differentiates various types of soil erosion in the environment	Accurately differentiates various types of soil erosion in the environment	Differentiates some types of soil erosion in the environment	Differentiates some types of soil erosion in the environment when given relevant clues
Controlling soil erosion	Correctly and skillfully demonstrates skills on controlling various types of soil erosion	Correctly demonstrates skills on controlling various types of soil erosion	Demonstrates some skills on controlling various types of soil erosion	Demonstrates some skills on controlling various types of soil erosion when guided.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Conserving our Environment	**1.2.** Water conservation **(7 lessons)**	By the end of the Sub Strand the learner should be able to; a) identify different types of seedbeds that conserve soil moisture, b) prepare different types of seedbeds that conserve soil moisture, c) Appreciate the importance of conserving moisture in a seedbed to improve plant growth.	• In pairs, learners to brainstorm or share experiences on types of seedbeds that conserve moisture such as *sunken beds and shallow pits.* • Learners watch video clips on various types of seedbeds that conserve moisture such as sunken beds and shallow pits. • In groups, learners prepare seedbeds such as *sunken beds and shallow pits* to conserve moisture. • Learners to visit the neighbouring farms to observe how seedbeds are prepared to conserve water *(sunken bed and shallow pit).* • Learners to collaborate with their parents and guardians to practice water conservation using sunken beds and shallow pits.	How can seedbeds be made to conserve moisture?

Core competencies to be developed: Critical thinking and problem solving in determining appropriate methods to conserve moisture in the soil to solve water shortage problems and improve plant growth in water scarcity areas.	
PCIs: Environmental awareness: Water as a scarce resource in the environment that should be conserved to ensure sustainable food production.	**Values:** Cooperation and team work in group activities while preparing different types of seedbeds to conserve moisture.
Links to other subjects: Science and technology in preparing seedbeds and reuse of waste material for water conservation with the aim of conserving moisture in the soil.	**Suggested community service learning activities:** Learners to use songs and recitations to sensitize community members on water conservation measures in farming during community open days.

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identifying seedbeds that conserve moisture	Correctly and proficiently identifies seedbeds (sunken beds and shallow pits) that conserve moisture	Correctly identifies seedbeds (sunken beds and shallow pits) that conserve moisture	Identifies some seedbeds (sunken beds and shallow pits) that conserve moisture	Identifies some seedbeds (sunken beds and shallow pits) that conserve moisture when given relevant clues.
Preparing seedbeds that conserve moisture	Correctly and skillfully prepares seedbeds (sunken beds and shallow pits) that conserve moisture	Correctly prepares seedbeds (sunken beds and shallow pits) that conserve moisture	Prepares some seedbeds (sunken beds and shallow pits) that conserve moisture	With guidance, prepares some seedbeds (sunken beds and shallow pits) that conserve moisture.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Conserving our Environment	**1.3.** Living better with wild animals **(7 lessons)**	By the end of the Sub Strand the learner should be able to; a) find information on deterrents of wild animals against farming activities, b) identify deterrents that keep off wild animals from destroying crops and domestic animals, c) establish deterrents to keep off wild animals from destroying crops and domestic animals, d) store photo records from digital resources on deterrents of wild animal for reference purposes, e) acknowledge the importance of deterrents in conserving small wild animals while safeguarding farming activities.	• In groups, learners to search for information on use of deterrents that keep off wild animals from destroying crops and farm animals: *deterrents such as wire mesh fence, safe traps, deflectors, innovative lights, innovative sound devices and thorny fences.* • Learners to watch video clips or listen to a resource person on deterrents of small wild animals that destroy crops and domestic animals. • In pairs, learners to brainstorm and share experiences on deterrents of wild animals that destroy crops and domestic animals. • Learners to consult a resource person such a wildlife officer or an experienced community elder to guide in various methods used by	1. What deterrents can we establish to keep off wild animals from destroying crops and domestic animals? 2. What innovative deterrents can we use to keep off wild animals from destroying domestic animals and crops?

			the community to keep off small wild animals to avoid destruction of crops and domestic animals. • Individual learners to search for photos, compile them and make presentations using photos on deterrents of wild animals from crops and domestic animals. • In groups, learners establish deterrents against wild animals from destroying crops and domestic animals such as *wire mesh fence, safe traps, deflectors, innovative lights, innovative sound devices and thorny fences.* • Learners to collaborate with their parents and guardians to improvise deterrents against wild animals from destroying crops and animals without killing them.	
Core competencies to be developed: Learning to learn as the learners use digital devices to access information and use the information to establish deterrents of wild animals to reduce damage on crops and domestic animals.				

PCIs: Wildlife conservation: Conservation of wild animals in the environment while coexisting in the same environment by using non-fatal methods in keeping off wild animals; Safety and security in securing self and domestic animals from destruction by wild animals.	**Values:** Respect for natural diversity: the learner to appreciate that wild animals and human beings should coexist in the environment for mutual benefits.
Links to other subjects: Science and technology (learners innovating deterrents against wild animals).	**Suggested community service learning activities:** Learners liaise with local wildlife office to sensitize the community on establishing deterrents of wild animals against farming enterprises to empower them live better with wildlife.

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Acquiring information on deterrents of wild animals against farming activities	Correctly and proficiently uses digital devices to access information on deterrents of wild animals against farming activities	Correctly uses digital devices to access information on deterrents of wild animals against farming activities	Uses digital devices to access information on some deterrents of wild animals against farming activities	With guidance, uses digital devices to access information on some deterrents of wild animals against farming activities

Identifying deterrents of wild animals from destroying crops and domestic animals	Correctly and proficiently identifies deterrents of wild animals from destroying crops and domestic animals	Correctly identifies deterrents of wild animals from destroying crops and domestic animals	Identifies some deterrents of wild animals from destroying crops and domestic animals	When guided, identifies some deterrents of wild animals from destroying crops and domestic animals
Establishing deterrents of wild animals from destroying crops and domestic animals	Correctly and innovatively establishes deterrents to keep off wild animals from destroying crops and domestic animals	Correctly establishes deterrents to keep off wild animals from destroying crops and domestic animals	Partially establishes deterrents to keep off wild animals from destroying crops and domestic animals	Partially establishes deterrents to keep off wild animals from destroying crops and domestic animals with guidance.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Conserving our Environment	**1.4** Creeping Crops **(15 lessons)** 1.4.1 Planting materials	By the end of the Sub Strand the learner should be able to; a) identify various creeping crops in the environment, b) identify suitable planting materials for establishing creeping crops, c) identify where planting materials for creeping crops can be obtained in the environment, d) collect suitable planting materials for creeping crops from the local environment.	• Learners use stimulus materials such as media, print materials and real objects to identify various creeping crops which include but not limited to various varieties of melons, pumpkins, strawberries, cucumbers and calabash. • Learners to discuss suitable planting materials for creeping crops *such as seeds, cuttings and splits.* • In groups, learners to suggest where planting materials for creeping crops could be obtained. • With help of the parents or guardians, learners to collect suitable planting materials for creeping crops.	What are the planting materials for creeping crops?

	1.4.2 Planting	By the end of the Sub Strand the learner should be able to; a) prepare planting materials for establishing creeping crops in the school or at home, b) establish planting materials for creeping crops on a suitable site.	• In groups, learners to prepare suitable planting materials for creeping crops in readiness for planting. Such preparation to include *extracting, sorting, cleaning and drying seeds; selecting and making sizeable cuttings at appropriate portions.* • Learners to plant the selected planting materials on suitably prepared site. The site could be on the ground or on appropriate container, on a plot or along the fence.	1. How can we prepare planting materials for creeping crops? 2. How are creeping crops established?

	1.4.3 Care for young creeping crops	By the end of the Sub Strand the learner should be able to; a) protect young creeping crops from excessive sun heat and physical damage, b) train creeping crops to follow desired paths or shapes, c) water the young creeping crops on the established site, d) apply manure to the creeping crops on the established site, e) protect the young creeping crops from weeds.	• In groups, learners construct sheds to protect young creeping crops from damages by humans, birds or animals. Such sheds to include net shed, twig shed or protective twig fence. • In groups, learners to water the young creeping crops. • Learners to apply appropriate manure to the creeping crops. • Learners to weed for the creeping crops. • Learners to train the creeping crops to follow desired paths and form appropriate shapes. • Learners to engage their parents or guardians and other community members in growing creeping crops.	How can we take care of creeping crops after planting?
Core competencies to be developed: Learning to learn while the learners conduct the activities in the entire process of collecting planting materials, establishing them and taking care of the creeping crops in the project, they gain new insights on what may have been assumed over time.				
PCIs: Environmental conservation: Planting creeping crops to conserve the environment (cover cropping for soil and water conservation).			**Values:** Sharing responsibilities in group activities and individualized tasks on establishing and managing creeping crops.	

Links to other subjects: Science and technology (the use of technology to water creeping crops and construct support structures).	**Suggested community service learning activities:** Learners to develop demonstration plots on creeping crops in the school and invite community members to learn to establish creeping crops to broaden choice of community food for enhanced nutrition and food security.

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Collecting suitable planting materials for creeping crops	Correctly and skillfully identifies creeping crops, viable planting materials and collects them from the local environment	Correctly identifies creeping crops, viable planting materials and collects them from the local environment	Identifies some creeping crops, viable planting materials and collects them from the local environment	When given relevant hints, identifies some creeping crops, viable planting materials and collects them from the local environment.
Preparing planting materials and establishing creeping crops	Adequately and skillfully prepares planting materials and innovatively establishes them on a suitable site	Adequately prepares planting materials and establishes them on a suitable site	Prepares some planting materials and establishes them on a suitable site	Prepares some planting materials and establishes them on a suitable site when assisted

Caring for creeping crops	Adequately and innovatively protects young creeping crops from excessive sun heat and physical damage, trains them to follow desired paths or shapes, and waters the young crops on the established site	Adequately protects young creeping crops from excessive sun heat and physical damage, trains them to follow desired paths or shapes, and waters the young crops on the established site	Makes some effort to protect young creeping crops from excessive sun heat and physical damage, train them to follow desired paths or shapes, and waters the young crops on the established site	Makes some effort to protect young creeping crops from excessive sun heat and physical damage, train them to follow desired paths or shapes, and waters the young crops on the established site when guided.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Conserving our Environment	**1.5** Conservation Project: Managing creeping crops **(7 lessons)**	By the end of the Sub Strand the learner should be able to; a) care for creeping crops in the school or at home, b) identify right stage for harvesting creeping crops to avoid wastage, c) harvest creeping crops appropriately to reduce damages, d) value the contribution of creeping crops for nutrition and food security.	• In groups, learners to take care of the established creeping crops by carrying out appropriate activities. • In groups, learners share experiences on how to identify a ready produce from creeping crops. • In groups, learners to carry out harvesting of creeping crops. • Learners to assist parents or guardians in the activities of caring for creeping crops at home.	1. What activities are carried out in managing creeping crops? 2. When are creeping crops ready for harvesting? 3. How is harvesting done on creeping crops?
Core competencies to be developed: Self-efficacy-learners being empowered to produce their own food through active leadership and participation in the project activities for growing and managing creeping crops.				
PCIs: Health, nutrition and food security: contributing to community food production for the purpose of improving health, nutrition and food security status in the country.			**Values:** Sharing responsibilities and team work to be gained through group activities while conducting the creeping crop project in school.	

Links to other subjects: Home Science in the preparation of harvested creeping crop produce for consumption.	**Suggested community service learning activities:** Learners initiate outlets for sale and sensitization of community members on creeping crops.

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Caring for established creeping crops	Adequately and innovatively takes care of established creeping crops in the school	Adequately takes care of established creeping crops in the school	Partially takes care of established creeping crops in the school	Partially takes care of established creeping crops in the school when guided.
Harvesting creeping crops to avoid damage	Proficiently uses correct methods to harvest creeping crops and does it at the right stage to avoid damage	Uses correct methods to harvest creeping crops and does it at the right stage to avoid damage	Partially uses correct methods to harvest some creeping crops and does it at the right stage to avoid damage	Partially uses correct methods to harvest some creeping crops and does it at the right stage to avoid damage when assisted.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
2.0 Domestic Animals	**2.1** Practices in rearing small domestic animals **(12 lessons)**	By the end of the Sub Strand the learner should be able to; a) identify small domestic animals reared in Kenya, b) search for information on small domestic animals reared by various communities in Kenya, c) explain routine practices in rearing of small domestic animals in Kenya, d) discuss importance of small domestic animals in Kenya, e) demonstrate safe handling of small domestic animal at school or home.	• Learners to identify small domestic animals kept by various communities in Kenya. The animals to include but not limited to rabbits, poultry, dogs, cats and guinea pigs. • In groups, learners search for information on small domestic animals from digital and print resources. Learners to store the accessed information and photos. • Learners to brainstorm on routine practices in rearing of small domestic animals. The practices to include *feeding, watering, cleaning tools and equipment, maintaining appropriate number, parasite control and vet care.* Learners to demonstrate the learnt experiences. • Learners to view stimulus materials such as photo albums and video clips on small	How do we rear small domestic animals?

			• domestic animals. Learners to share their experiences. • Learners to visit appropriate farms to demonstrate safe handling of small domestic animals. Learners to share their experiences.	
Core competencies to be developed: Digital literacy in searching and storage of photos and information on small domestic animals from digital devices and also sharing and consulting on access and storage procedures for the data on domestic animals.				
PCIs: Animal welfare: Appreciating appropriate handling of small domestic animals.			**Values:** Respect for human beings and animals, to be acquired when relating with one another in the tasks and with animals while handling the small domestic animals.	
Links to other subjects: Science and technology when applying ICT skills to access information on small domestic animals from digital devices.			**Suggested community service learning activities:** Learners to visit Agricultural shows, fairs and exhibitions to learn more on practices in rearing small domestic animals.	

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identifying small domestic animals reared in Kenya	Correctly and proficiently identifies small domestic animals reared in Kenya	Correctly identifies small domestic animals reared in Kenya	Makes effort to identify some small domestic animals reared in Kenya	Makes effort to identify some small domestic animals reared in Kenya when guided.
Explaining routine practices in rearing of small domestic animals	Adequately and proficiently explains routine practices in rearing of small domestic animals	Adequately explains routine practices in rearing of small domestic animals	Partially explains some routine practices in rearing of small domestic animals	Partially explains some routine practices in rearing of small domestic animals when given relevant hints.
Demonstrating safe handling of small domestic animals	Skillfully demonstrates safe handling of small domestic animals at school or home	Demonstrates safe handling of small domestic animals at school or home	Partially demonstrates safe handling of some small domestic animals at school or home	Partially demonstrates safe handling of some small domestic animal at school or home when assisted.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
3.0 Gardening Practices	**3.1.** Organic Gardening of Legumes **(17 lessons)**	By the end of the Sub Strand the learner should be able to; a) explain the meaning of organic gardening of legumes, b) find information on organic gardening using digital resources, c) identify the organic gardening practices for legumes, d) store acquired information on organic gardening of legumes for reference, e) share accessed information on organic gardening with other learners, f) establish a legume crop in an appropriate site using organic manure,	• In pairs, learners share their understanding of the meaning of organic gardening of legumes (*growing legume crops without use of agro-chemicals).* • In groups, learners use digital devices to access information on organic gardening and store acquired information appropriately for reference. • In groups, learners brainstorm and share experiences on gardening practices for legumes. • Learners watch video clips on how to prepare selected site and sow legume seeds using organic manure. The seedbed could be in containers or appropriate ground sites.	1. What is organic gardening? 2. How can we grow legumes using cultural practices?

		g) take care of a growing legume crop using appropriate field practices, h) use appropriate tools and equipment in growing legume crop, i) determine appropriate stage of harvesting legume crops, j) harvest legume crops appropriately to reduce wastage, k) demonstrate understanding of the importance of organically grown legume crops to human health.	• Learners to visit organic farms and institutions in the locality to learn more on organic farming practices. • Individual learners to share information accessed through online sharing, live presentation or printed information. • In groups, learners prepare a suitable site and plant legumes. • In groups, learners take care of the growing legume crops using cultural practices *(mulching, watering, thinning, gapping, uprooting weeds, removing pests and diseased plants)* with appropriate tools and equipment. • Learners to discuss appropriate stages of harvesting legume crop.	

			• In groups, learners harvest legume crop appropriately for consumption. • In groups, learners brainstorm on importance of growing legume crops using cultural practices. • Learners to assist parents and guardians in the activities for growing legumes and maintaining tools and equipment.	
Core competencies to be developed: Self-efficacy gained through active participation in the legume growing project activities thus making contribution to production of food either at home or school.				
PCIs: Health lifestyle and adopting healthy eating-awareness developed from the project on growing legumes without use of any farm chemicals.			**Values:** Value for team work embraced through active participation in project activities in growing legumes.	
Links to other subjects: Home Science-appreciating nutritional value of legumes in the family diet.			**Suggested community service learning activities:** Learners to use community open days to present messages of sensitizing the community members on importance of health living through organically grown food crops.	

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Explaining the meaning of organic gardening of legumes	Adequately and proficiently explains the meaning of organic gardening of legumes	Adequately explains the meaning of organic gardening of legumes	Partially explains the meaning of organic gardening of legumes	Partially explains the meaning of organic gardening of legumes when given some hints
Using correct procedure to establish a legume crop	Proficiently uses correct procedure to establish a legume crop in an appropriate site using organic manure	Uses correct procedure to establish a legume crop in an appropriate site using organic manure	Partially follows procedure to establish a legume crop in an appropriate site using organic manure	Partially follows procedure to establish a legume crop in an appropriate site using organic manure when assisted.
Taking care of legume crops using cultural practices	Adequately and proficiently takes care of growing legume crops using cultural practices	Adequately takes care of growing legume crops using cultural practices	Partially takes care of growing legume crops using cultural practices	Partially takes care of growing legume crops using cultural practices when assisted
Selecting tools and equipment for gardening	Correctly and expertly selects appropriate tools and equipment for taking care of legume crops	Correctly selects appropriate tools and equipment for taking care of legume crops	Selects some appropriate tools and equipment for taking care of legume crops	Selects some appropriate tools and equipment for taking care of legume crops when guided.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
3.0 Gardening Practices	**3.2.** Innovative Ornamental Gardening **(15 lessons)**	By the end of the Sub Strand the learner should be able to; a) explain the meaning of ornamental gardening in innovative gardening practices, b) find information on innovative ornamental gardening using digital resources, c) store acquired information on innovative ornamental gardening for reference, d) share accessed information on innovative ornamental gardening with other learners, e) design ornamental cropping pattern in the immediate environment,	• In groups, learners to share their understanding of the meaning of ornamental gardening and its importance. • Learners watch or observe stimulus materials such as video clips, pictures, photograph, and illustrations on ornamental cropping designs showing various crops. • In pairs, learners discuss appropriate crops for ornamental gardening. • In groups, learners use digital devices to access information on ornamental gardening and store acquired information appropriately for reference. • Individual learners to share information accessed through online sharing, live presentation and printed materials.	1. What is ornamental cropping? 2. Why do we practice ornamental cropping?

		f) grow an ornamental plant using soil medium in the school, g) grow an ornamental plant using soilless medium in the school, h) value the role of ornamental cropping as an innovative gardening practice.	• Learners to engage their parents and guardians on accessing and sharing information on ornamental gardening using digital devices. • Learners to collaborate with parents and guardians to introduce and practice ornamental gardening at home in both soil and soilless media. • Learners to design and draft drawings on ornamental cropping pattern or innovations they would like to implement in the school. • Learners to grow ornamental plants of their choice using soil medium in the school. • Learners to grow ornamental plants of their choice using soilless medium *(planting in container with pebbles or coco peat or peat moss among other support medium and feeding the plants with*	

			• *organically made nutrient solution from mixture of water and compost manure).*	
	3.3 Moisture bed gardening	By the end of the Sub Strand the learner should be able to; a) explain the use of moisture beds for water conservation, b) prepare a moisture bed for growing a selected crop, c) establish a crop on a moisture bed for water conservation, d) appreciate importance of moisture beds in growing crops.	• Learners brainstorm and share their understanding of moisture bed and how it is used to grow crops. • Learners to watch video clips or other relevant stimulus material on preparation of a moisture bed. • In groups, learners prepare a moisture bed for growing a crop of their choice. • Learners to collaborate with parents and guardians to establish moisture beds for growing crops at home.	1. What are moisture beds? 2. How can we use moisture beds to grow crops? 3. Why do we prepare moisture beds?
Core competencies to be developed: Communication and collaboration in group activities while acquiring and exchanging ideas and experiences on innovative ornamental gardening and moisture beds.				

PCIs: Environmental protection-conserving the environment through use of moisture beds to conserve water and enhancing aesthetics using innovative ornamental gardens.	**Values:** Cooperation with others-learning from others through group activities and sharing information and experiences in the innovative activities of ornamental gardening.
Links to other subjects: Science and technology-in the use of technology to search and share information on innovative ornamental gardening; Creative Art - in creating attractive designs when developing innovative ornamental gardens, their support structures (frames) and cropping patterns.	**Suggested community service learning activities:** Learners to establish a demo moisture bed in the school, grow a crop that hardly does well in the locality due to moisture limitations and invite community members to learn from the demo plot.

Assessment rubrics

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Designing ornamental cropping pattern in the immediate environment	Innovatively and expertly designs ornamental cropping pattern in the immediate environment	Innovatively designs ornamental cropping pattern in the immediate environment	Partially designs ornamental cropping pattern in the immediate environment	Partially designs ornamental cropping pattern in the immediate environment when assisted.
Preparing moisture beds for a selected crop	Adequately and skillfully prepares a moisture bed for growing a selected crop	Adequately prepares a moisture bed for growing a selected crop	Partially prepares a moisture bed for growing a selected crop	Partially prepares a moisture bed for growing a selected crop when assisted.

Establishing a crop on a moisture bed for water conservation	Demonstrates leadership and actively participates in project activities for establishing a crop on a moisture bed for water conservation	Actively participates in project activities for establishing a crop on a moisture bed for water conservation	Partially participates in some project activities for establishing a crop on a moisture bed for water conservation	Partially participates in some project activities for establishing a crop on a moisture bed for water conservation when assisted.

Appendix 1: List of Assessment Methods, Learning Resources and Non-formal Activities

Strand	Sub strand	Suggested assessment methods	Suggested learning resources	Suggested non-formal activities
1.0 Conserving our Environment	1.1 Soil erosion control	• Written assignment. • Observation of learning activities. • Learners profile in soil erosion control activities. • Project on soil erosion control.	Relevant video clips on soil erosion (gulley, rill, splash and sheet erosion), and control structures/measures (gabions, terraces, cover crops, trash lines, stone lines among other relevant structures). Tools and materials: Jembe or fork jembe, shovel, spade, sticks and pegs, panga and slasher (if clearing is required), mallet for driving in pegs, and tape measure. Stones and mesh wire where gabions are to be constructed.	Learners to initiate soil erosion control measures in the school based on the common form of erosion in the school environment.

	1.2 Water conservation	• Oral assessment. • Observation of learning activities. • Group project portfolio on preparation of water conservation beds.	Garden tools: jembes, fork jembes, spade, panga, slasher and rake. Others: Mulch materials, digital resources and planting materials.	Learners to initiate water harvesting and conservation measures based on common form of water wastage points in the school.
	1.3 Living better with wild animals	• Written tests. • Graded observation of group work activities. • Project portfolio in establishment of deterrents against wild animals.	Topical video clips on wild animals, photos and illustrations on wild animals, resource person with skills or specialization on handling wild animals, metal or wooden frames for constructing animal deterrent structures, source of power for innovative lightings, wire cables and blinking lights.	Learners to initiate bird feeding table to attract and nourish wild birds in the school using waste foods and food remains as a form of caring for them after deterring them from crop gardens.

	1.4 Creeping crops	• Written tests and assignments. • Graded oral assessment activities. • Group assignments on identification of planting materials. • Project work on planting and caring for creeping crops. • Learner's journal with details of project activities on creeping crops.	Gardening tools and equipment, assorted seeds of creeping crops such as melons, pumpkins, cucumbers and calabash. Planting materials for creeping crops such as seedlings, cuttings and splits; and organic manure.	Learners to initiate cover cropping using common crops in the locality to prevent soil erosion on the sloppy areas of the school land or sloppy landscapes.
	1.5 Conservation project: Managing creeping crops	• Project work on caring and harvesting practices of creeping crops. • Learner's journal on project activities.	Gardening tools and equipment such as panga, watering equipment, jembe or fork jembe, secateurs, containers for carrying harvested produce, mulch materials, framing materials such as pieces of wood, wires and metal bars.	

2.0 Domestic Animals	2.1 Practices in rearing small domestic animals	• Written assignment. • Graded observation. • Oral assessment on animal rearing practices.	Photos, video clips on domestic animals and farm with domestic animals.	Learners to initiate routine care programme aimed at feeding, watering, cleaning tools and equipment, maintaining appropriate number, parasite control and vet care of small domestic animals.
3.0 Gardening Practices	3.1 Organic gardening of legumes	• Project journal on growing of legume crops. • Graded oral assessment. • Learner's profile showing learners involvement in the legume project activities.	Organic manures, gardening tools and equipment, organic mulch materials, video clips on organic farming practices, and assorted legume seeds.	Learners to develop demonstration plots in the school for legume crop production through use of organic practices.

	3.2 Innovative gardening: 3.2.1 Ornamental cropping	• Anecdotal records on innovative gardening activities. • Learner's profile showing learner's creative designs of ornamental cropping. • Learner's journal detailing his or her contributions to the innovations or activities.	Topical video clips on ornamental gardening practices, pictures and photos, illustrative designs on ornamental gardens, assorted planting materials of ornamental plants, containers for innovative gardening, gardening tools and equipment.	Learners to initiate beautification project of the school using crop plants and or any other ornamental plants.
	3.2.2 Moisture bed cropping	• Learner's journal detailing project activities with dates and responsibilities. • Oral assessment. • Graded observation on learner project activities and participation levels.	Gardening tools and equipment, planting materials such as arrowroots, video clips on preparation of moisture beds, photographs on crops grown on moisture beds, and pictures illustrating preparation of a moisture beds.	Learners to develop a moisture bed demonstration plots to show how a crop (rare crop in the environment) can be grown in the locality.

Guidance Notes on Learning Resources

The following resources are required across strands in this curriculum. The curriculum considers them as special resources and therefore gives special guidelines as follows:

1. **Land (Space for agricultural activities)**

- The curriculum activities **DO NOT** demand for extensive land in schools for the learners to develop the agricultural competencies. The designed activities could be implemented on **any available space** within the school or outside the school as may be deemed appropriate.
- The activities suggested in the curriculum have considered space as a limited resource in Agriculture. The curriculum therefore recommends utilization of any available space in the school compound including but not limited to the following spaces: **small plots of land in or out of the school compound, area around the fence, space along the drive-ways, space in front or behind the classrooms, space on top of large concrete buildings (with special consideration on child safety), hanging spaces on walls or hanging frameworks among others**.
- The spaces mentioned above could appropriately be used with use of container gardens and ornamental beds (***Note that ornamental beds are not limited to flower plants; the concept is applicable to any crop in this curriculum***).
- Wise and innovative designing, planning and utilization of available space including establishing limited number of plants is highly encouraged provided the learners are exposed to a practical and experiential learning of curriculum concepts.

2. **Water**

- Water is a natural and primary resource in Agriculture. The curriculum recommends that all schools should prioritize water harvesting and storage to avail this critical resource throughout the year. The activities in this curriculum have prioritized water conservation in all suggested activities.

3. **Planting materials**

- The curriculum recommends use of available planting materials. Where planting is suggested, the curriculum gives a broad option, listing some of them in the column for suggested learning experiences to enable the

learners to adopt what is best suited and available in their local environment. Note that the column for suggested learning experiences does not make a conclusive listing. The listing can be enhanced based on the learner's contexts as long as it develops the learning outcomes.

4. **Digital devices**

- The curriculum suggests use of digital devices to search for information including photos, videos and illustrations to guide concretization of concepts and provoke innovativeness of the learners. Appropriate devices should have internet connectivity and connective accessories. The devices should be used with guidance of the teacher.
- Digital devices are required across the curriculum as support devices to access and share information. They are suggested in several Sub Strands but may be used in all the Sub Strands in the curriculum. Digital devices, resources and related accessories include but not limited to: computers, laptops, tablets, smart phones, digital cameras, flash disks, DVDs, memory cards, internet connectivity devices, projectors, external memory drives, connectivity cables, source of power and printers.

5. **Assorted farm tools**

- These tools may be used selectively based on the actual task to be carried out in the learning process.
- The tools includes but not limited to the following common tools: hammer, pliers, knife, garden trowel, panga, jembe, slasher, spade, shovel, wheel barrow, manure fork, fork jembe, tape measure, string, secateurs, pruning saw and watering can.