



**REPUBLIC OF KENYA
MINISTRY OF EDUCATION**

JUNIOR SECONDARY SCHOOL CURRICULUM DESIGN

GRADE 8

AGRICULTURE



KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

Download this and other FREE revision materials from <https://teacher.co.ke/notes>

First published in 2022

All rights reserved. No part of this book may be reproduced, stored in a retrieval system or transcribed, in any form or by any means, electronic, mechanical, photocopy, recording or otherwise, without the prior written permission of the publisher.



ISBN: 978-9914-43-810-9

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, National Curriculum Policy 2019, the United Nations Sustainable Development Goals (SDGs) and the Regional and Global conventions to which Kenya is a signatory. Towards achieving the mission of Basic Education, the Ministry of Education (MoE) has successfully and progressively rolled out the implementation of the Competency Based Curriculum (CBC) at Pre-Primary and Primary School levels. The roll out of Junior Secondary School (Grade 7-9) will subsequently follow as from 2023-2025.

The Grade 8 curriculum designs build on competencies attained by learners at the end of Grade 7. Further, they provide opportunities for learners to continue exploring and nurturing their potentials as they prepare to transit to Senior Secondary School.

The curriculum designs present National Goals of Education, essence statements, general and specific expected learning outcomes for the learning areas (subjects) as well as strands and sub strands. The designs also outline suggested learning experiences, key inquiry questions, core competencies, Pertinent and Contemporary Issues (PCIs), values, Community Service Learning (CSL) activities and assessment rubric.

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 CBC.

PROF. GEORGE A. O. MAGOHA, EGH
CABINET SECRETARY,
MINISTRY OF EDUCATION



PREFACE

The Ministry of Education (MoE) is implementing the second phase of the curriculum reforms with the national roll out of the Competency Based Curriculum (CBC) having been implemented in 2019. Grade 8 is the second level of the Junior Secondary School (JSS) in the new education structure.

Grade 8 curriculum furthers implementation of the CBC from Grade 7. The main feature of this level is a broad curriculum for the learner to explore talents, interests and abilities before selection of pathways and tracks at the Senior Secondary education level. This is very critical in the realisation 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 8 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 provide suggestions for interactive and differentiated learning experiences linked to the various sub strands and the other aspects of the CBC. The curriculum designs also offer several suggested learning resources and a variety of assessment techniques. It is expected that the designs will guide teachers to effectively facilitate learners to attain the expected learning outcomes for Grade 8 and prepare them for smooth transition to the next Grade. Furthermore, it is my hope that teachers will use the designs to make learning interesting, exciting and enjoyable.

JULIUS O. JWAN, PhD, CBS
PRINCIPAL SECRETARY
STATE DEPARTMENT FOR EARLY LEARNING AND BASIC EDUCATION
MINISTRY OF EDUCATION



ACKNOWLEDGEMENT

The Kenya Institute of Curriculum Development (KICD) Act Number 4 of 2013 (Revised 2019) mandates the Institute to develop curricula and curriculum support materials for basic and tertiary education and training. The curriculum development process for any level of education involves thorough research, international benchmarking and robust stakeholder engagement. Through a 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, the Kenya Vision 2030, East African Community Protocol and the United Nations Sustainable Development Goals (SDGs).

KICD receives its funding from the Government of Kenya to enable the successful achievement of the stipulated mandate and implementation of the Government and Sector (Ministry of Education (MoE) plans. The Institute also receives support from development partners targeting specific programmes. The Grade 8 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 roles in the development of the Grade 8 curriculum designs. In relation to this, we acknowledge the support of the –Chief Executive Officers of the Teachers Service Commission (TSC) and 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 Prof. Elishiba Kimani 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 8 and preparation of learners for Grade 9.

PROF. CHARLES O. ONG’ONDO, PhD, MBS
DIRECTOR/CHIEF EXECUTIVE OFFICER
KENYA INSTITUTE OF CURRICULUM DEVELOPMENT



TABLE OF CONTENTS

FOREWORD	i
PREFACE	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENTS.....	iv
LESSON ALLOCATION.....	v
LEARNING OUTCOMES FOR MIDDLE SCHOOL	ix
ESSENCE STATEMENT	ix
SUBJECT GENERAL LEARNING OUTCOMES.....	x
STRAND 1.0: CONSERVING AGRICULTURAL ENVIRONMENT.....	1
STRAND 2.0: CROP PRODUCTION	5
STRAND 3.0: ANIMAL PRODUCTION.....	16
STRAND 4.0: AGRICULTURE AND TECHNOLOGY	24
COMMUNITY SERVICE LEARNING PROJECT.....	29
APPENDIX 1: LIST OF ASSESSMENT METHODS, LEARNING RESOURCES AND NON-FORMAL ACTIVITIES	34
APPENDIX 2: GUIDELINES ON RESOURCES AND RESOURCE UTILIZATION FOR AGRICULTURE CURRICULUM.....	38



LESSON ALLOCATION

	Subject	Number of Lessons Per Week (40 minutes per lesson)
1.	English	5
2.	Kiswahili/KSL	4
3.	Mathematics	5
4.	Integrated Science	4
5.	Health Education	2
6.	Pre-Technical Studies	5
7.	Social Studies	3
8.	Religious Education (CRE/IRE/HRE)	2
9.	Business Studies	3
10.	Agriculture	3
11.	Life Skills Education	1
12.	Physical Education and Sports	2
13.	Optional Subject	3
14.	Optional Subject	3
	Total	45



NATIONAL GOALS OF EDUCATION

Education in Kenya should:

i) 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.

ii) 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.



iii) 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.

iv) 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.

v) Promote social equality 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.

vi) 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.

vii) 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.



viii) 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 MIDDLE SCHOOL

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

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

ESSENCE STATEMENT

Kenya Vision 2030 recognizes Agriculture as a core factor to development of the country's economy. The vision resonates with the United Nations Sustainable Development Goal No. 2 which aims *to end hunger, achieve food security, improve nutrition and promote sustainable agriculture*. The vision is further aligned to the Comprehensive Africa Agriculture Development Programme (CAADP) which aim to achieve sustainable food production systems through resilient agricultural practices for food security and nutrition. This therefore calls for education that develops agricultural competencies to provide competent manpower for Kenya's agro-based economy.

Agriculture for Junior Secondary level builds on competencies introduced in Upper Primary curriculum contributing to human capacity development. The learning experiences involve active learner participation conducted through practical, project and Community Service Learning (CSL) activities to develop applicable competencies for sustainable agriculture. The curriculum focuses on developing knowledge, skills and attitudes for conservation of agricultural environment, crop production, and animal production through innovative agricultural technologies using limited resources to enhance food security. The acquired

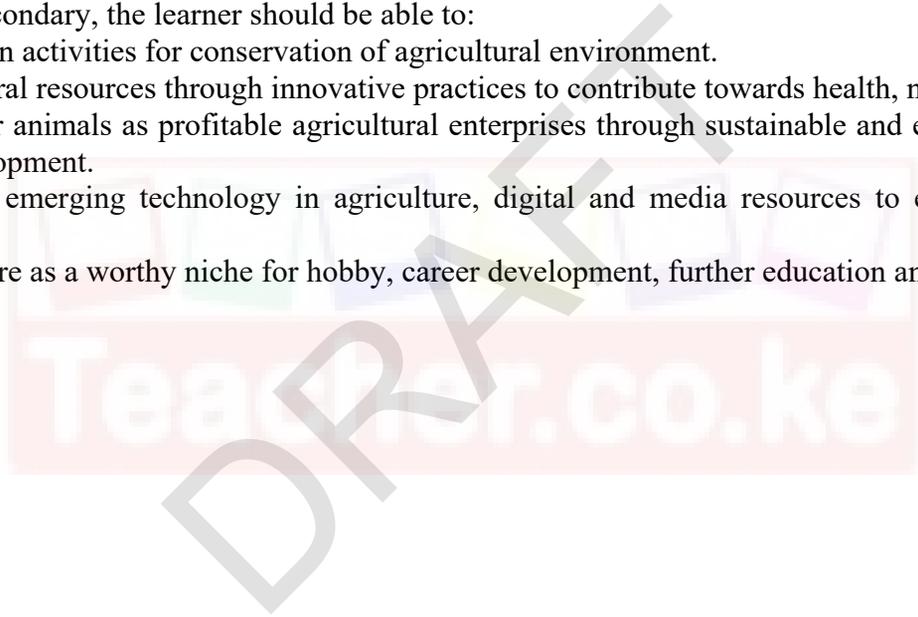


knowledge, skills and attitudes forms a broad-spectrum foundation for development of agricultural competencies for senior school and beyond.

SUBJECT GENERAL LEARNING OUTCOMES

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

1. Participate actively in activities for conservation of agricultural environment.
2. Use scarce agricultural resources through innovative practices to contribute towards health, nutrition and food security.
3. Grow crops and rear animals as profitable agricultural enterprises through sustainable and ethical practices for self-reliance and economic development.
4. Apply existing and emerging technology in agriculture, digital and media resources to enhance sustainable agricultural practices.
5. Appreciate agriculture as a worthy niche for hobby, career development, further education and training.



STRAND 1.0: CONSERVING AGRICULTURAL ENVIRONMENT

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Conserving Agricultural Environment	1.1 Soil conservation measures (6 lessons)	By the end of the sub strand the learner should be able to: a) explain the importance of soil conservation in agricultural environment, b) describe methods of soil conservation in agricultural environment, c) carry out soil conservation activities in the school environment, d) demonstrate caring attitude towards soil in agricultural environment.	Learner is guided to: <ul style="list-style-type: none"> • discuss in pairs the importance of soil conservation in agricultural environment. • form groups, search and share information on methods of soil conservation (strip cropping, grassed water ways, stone lines, trash lines, bund formation) using digital devices and print media. • conduct a practical activity: <i>in groups, learners to explore the school environment and carry out activities on soil conservation in the school such as strip cropping, grassed water ways, stone lines, trash lines, and bund formation.</i> • conduct project: <i>in groups, learners to construct farm model using materials such as cartons, cardboards, soil and papier-mache to demonstrate farm layout with various soil conservation measures.</i> 	<ol style="list-style-type: none"> 1. Why should we conserve soil in the environment? 2. How can we conserve soil in the environment?



Core competencies to be developed				
<ul style="list-style-type: none"> • Creativity and imagination: observation and experimenting skills as learners design and model farm layout illustrating soil conservation measures. 				
Values				
<ul style="list-style-type: none"> • Unity as learners design soil conservation models and carry out soil conservation activities. 				
Pertinent and contemporary issues				
<ul style="list-style-type: none"> • Environmental awareness as learners explore the environment to observe soil degradation and take measures to conserve the soil. 				
Links to other subjects				
<ul style="list-style-type: none"> • Visual arts as learners design and construct models of soil conservation layout. 				
Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to explain the importance of soil conservation in agricultural environment.	Gives an elaborately detailed explanation of the importance of soil conservation in agricultural environment.	Gives a clear explanation of the importance of soil conservation in agricultural environment.	Gives explanation of the importance of soil conservation in agricultural environment that require clarification of some details.	Gives explanation of the importance of soil conservation in agricultural environment that require correction of some details.
Ability to describe methods of soil conservation in agricultural environment.	Makes an exemplary description of six or more methods of soil conservation in agricultural environment.	Makes a description of six methods of soil conservation in agricultural environment.	Males a description of five methods of soil conservation in agricultural environment.	Makes a description of less than five methods of soil conservation in agricultural environment.
Ability to carry out soil conservation activities in the school environment.	Demonstrates exceptional skills in carrying out each of the six soil conservation activities in the school environment.	Demonstrates ability to carry out each of the six soil conservation activities in the school environment.	Demonstrates ability to carry out five out of the six conservation soil activities in the school environment.	Demonstrates ability to carry out less than five out of the six soil conservation activities in the school environment.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Conserving Agricultural Environment	1.2 Water harvesting and storage (6 lessons)	By the end of the sub strand the learner should be able to: <ol style="list-style-type: none"> outline methods of harvesting water for farming purposes, discuss ways of storing harvested water for farming purposes, take part in harvesting and storing water in the school for farming purposes, show responsibility in harvesting and storing water for farming. 	Learner is guided to: <ul style="list-style-type: none"> brainstorm in pairs, methods of harvesting water for farming purposes. search and share information in groups, on how water can be stored for farming purposes, using methods such as <i>shallow water pans, water ponds and water tanks</i> using digital devices and print media. make class presentations on possible initiatives that can be made to harvest and store rain water and surface runoff in the school environment. initiate water conservation structure of their choice in the school. 	How can we harvest and store water for agricultural purposes?
Core competencies to be developed <ul style="list-style-type: none"> Critical thinking and problem solving: Evaluation and decision-making skills as learners evaluate the environment to determine water menace during heavy rainy seasons and how the water could be trapped, stored and used for continuous agricultural activities in the school. 				
Values <ul style="list-style-type: none"> Unity as learners initiate a water conservation structure of their choice. 				



<p>Pertinent and contemporary issues</p> <ul style="list-style-type: none"> Environmental awareness and protection as learners analyze the rainfall patterns and design ways of conserving the environment through water harvesting and storage. 				
<p>Links to other subjects</p> <ul style="list-style-type: none"> Pre-technical and pre-career studies as learners use designing skills and technologies to participate in development of water harvesting and storage structures. 				
<p>Assessment rubric</p>				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to outline methods of harvesting water for farming purposes.	Gives contextualized outline of the methods of harvesting water for farming purposes.	Outlines the methods of harvesting water for farming purposes.	Outlines with some details that require clarification on the methods of harvesting water for farming purposes.	Outlines with some details that require correction, the methods of harvesting water for farming purposes.
Ability to discuss ways of storing harvested water for farming purposes.	Discusses in analytical details three ways of storing harvested water for farming purposes.	Discusses three ways of storing harvested water for farming purposes.	Discusses two ways of storing harvested water for farming purposes.	Discusses less than two ways of storing harvested water for farming purposes.
Ability to take part in harvesting and storing water in the school for farming purposes.	Takes leadership and active roles in activities for harvesting and storing water in the school for farming purposes.	Takes active roles in activities for harvesting and storing water in the school for farming purposes.	Takes some passive roles in activities for harvesting and storing water in the school for farming purposes.	Takes all passive roles in activities for harvesting and storing water in the school for farming purposes.



STRAND 2.0: CROP PRODUCTION

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
2.0 Crop production	2.1 Square foot gardening (9 lessons)	By the end of the sub strand the learner should be able to: a) describe the concept of square foot gardening in growing crops, b) prepare square foot garden for growing crops, c) establish a set of crops in the square foot garden, d) appraise the value of square foot gardening for household nutrition.	Learner is guided to: <ul style="list-style-type: none"> form groups and search for information and share findings through presentations on the concept of square foot gardening for growing vegetables, spices and herbs. to prepare in groups a garden with a set of partitions each measuring at least 1ft by 1 ft (30cm by 30cm). The actual measurement may be varied based on the learners' preference. to establish a set of vegetables, spices and herbs on the garden based on the number of partitions (plant one type of crop per square foot partition). discuss and make presentations on the benefits of square foot gardening. conduct project: to prepare a square foot garden and establish a set of crops of their choice. 	<ol style="list-style-type: none"> What is square foot gardening? How can we grow crops through square foot gardening?
Core competencies to be developed				
<ul style="list-style-type: none"> Creativity and imagination: observation and experimenting skills as learners design, prepare and establish the square foot garden. 				
Values				
<ul style="list-style-type: none"> Unity as learners work in teams to analyse ideas, design, prepare and establish the square foot garden project. 				



Pertinent and contemporary issues				
<ul style="list-style-type: none"> Financial literacy as learners produce spices, herbs and vegetable crops for household use leading to financial savings. 				
Links to other subjects				
<ul style="list-style-type: none"> Home science and Health education as the learners relate vegetables, herbs and spices consumed at household level to their health. 				
Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to describe the concept of square foot gardening in growing crops.	Gives a clear and illustrative description of the concept of square foot gardening in growing crops.	Gives a clear description of the concept of square foot gardening in growing crops.	Gives a description of the concept of square foot gardening in growing crops with some details that require clarification.	Gives a description of the concept of square foot gardening in growing crops with some details that require correction for accuracy.
Ability to prepare a square foot garden for growing crops.	Demonstrates exceptional skills in preparing a square foot garden for growing crops.	Demonstrates ability to prepare a square foot garden for growing crops.	Demonstrates some ability that hesitates for affirmation to prepare a square foot garden for growing crops.	Demonstrates some ability that hesitates for affirmation and extra external guidance to prepare a square foot garden for growing crops.
Ability to establish a set of crops in a square foot garden.	Creatively and attractively establishes correct set of crops in a square foot garden.	Establishes a correct set of crops in a square foot garden.	Establishes some correct crops out of the expected set of crops in a square foot garden.	Establishes any crops in a square foot garden.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
<p>2.0 Crop production</p>	<p>2.2 Crop management (9 lessons)</p>	<p>By the end of the sub strand the learner should be able to:</p> <ol style="list-style-type: none"> give meaning of pests in vegetable crops, identify vegetable crops attacked by pests, identify pests that attack growing vegetable crops, control pests on vegetable crops, give meaning of disease in vegetable crops, identify vegetable crops attacked by diseases, control diseases on vegetable crops, acknowledge importance of controlling pests and diseases in vegetable production. 	<p>Learner is guided to:</p> <ul style="list-style-type: none"> brainstorm in pairs the meaning of the term crop pests. take a field excursion to observe and identify vegetable crops attacked by pests (<i>punctured leaves, cut-off seedlings, curling leaves</i>) and the common sites where the pests are found. observe and identify pests (<i>aphids, cutworms, caterpillars</i>) during the field excursion. observe and identify pests that attack vegetable crops from displayed charts or digital resources (<i>aphids, cutworms, caterpillars</i>). control pests on vegetables using methods such as handpicking, removing affected crop parts, uprooting heavily affected crops and applying ash. brainstorm in pairs the meaning of the term crop disease. take a field excursion to a vegetable garden, observe and identify vegetable crops affected by disease (<i>wilting plants, black and brown spots and rotting of plant parts</i>). 	<ol style="list-style-type: none"> How can we identify vegetable crops attacked by pests and diseases? How can we control pests and diseases in crops?



			<ul style="list-style-type: none"> control diseases on vegetables using methods such as removing affected parts and uprooting heavily affected crops. discuss and make presentations on importance of controlling crop pests and diseases in vegetable production. 	
--	--	--	--	--

Core competencies to be developed

- Learning to learn: collaborative working skills as learners plan activity to explore, discover crop pests, diseases and the damages caused on vegetable crops.

Values

- Respect as learners present their findings to the class while others critique the presentations

Pertinent and contemporary issues

- Disaster risk reduction as learners learn and apply various methods to control pests and diseases on day to day basis.

Links to other subjects

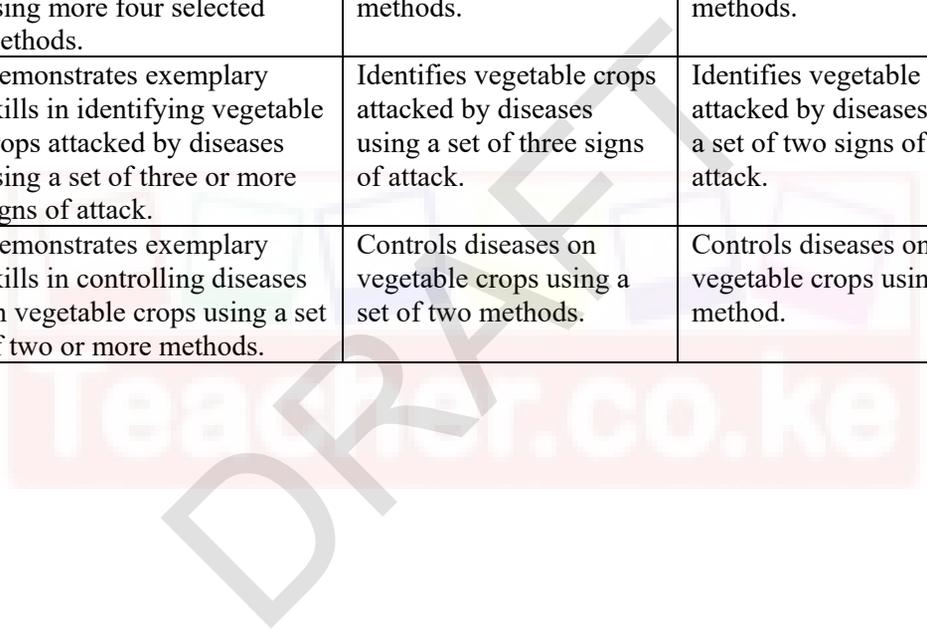
- Integrated science as learners interact with the environment, observe vegetable crops attacked by pests and diseases in their habitats and discover relationships between the plants and animals (pests).
- Business studies as learners relate the importance of controlling pests to the losses caused by pests in vegetable farming enterprises.

Assessment rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to identify pests that attack growing vegetable crops.	Identifies with exceptional precision more than three pests that attack growing vegetable crops.	Identifies three pests that attack growing vegetable crops.	Identifies two pests that attack growing vegetable crops.	Identifies less than two pests that attack growing vegetable crops.
Ability to control identified pests on	Demonstrates exemplary skills in controlling identified	Ably controls identified pests on vegetable crops	Controls some identified pests on vegetable crops	Controls some identified pests on vegetable crops



Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
vegetable crops.	pests on vegetable crops using more four selected methods.	using four selected methods.	using three selected methods.	using less than three selected methods.
Ability to identify vegetable crops attacked by diseases.	Demonstrates exemplary skills in identifying vegetable crops attacked by diseases using a set of three or more signs of attack.	Identifies vegetable crops attacked by diseases using a set of three signs of attack.	Identifies vegetable crops attacked by diseases using a set of two signs of attack.	Identifies vegetable crops attacked by diseases using a set of less than two signs of attack.
Ability to control diseases on vegetable crops.	Demonstrates exemplary skills in controlling diseases on vegetable crops using a set of two or more methods.	Controls diseases on vegetable crops using a set of two methods.	Controls diseases on vegetable crops using one method.	Controls diseases on vegetable crops using one method and only if given extra guidance.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
2.0 Crop production	2.3 Crop harvesting (6 lessons)	By the end of the sub strand the learner should be able to: a) identify the appropriate stage of harvesting vegetable crops, b) harvest vegetable crops using suitable methods, c) take precautions in harvesting vegetables to ensure quality of produce, d) show responsibility in handling of vegetable crop produce at harvesting stage.	Learner is guided to: • take an excursion to a vegetable garden, study and identify vegetables that are ready for harvesting. • discuss and justify their observations on signs of readiness or non-readiness of the vegetable crops for harvest. • observe samples of spoilt vegetable produce and then discuss precautions to be observed when harvesting to reduce spoilage. • demonstrate how to harvest different types of vegetables. • Conduct practical: practise actual harvesting of vegetable crops at the right stage, taking necessary precautions and using appropriate methods when the vegetable is ready for utilization.	1. How can we tell that a vegetable is ready for harvesting? 2. How can we harvest vegetables to maintain quality and reduce spoilage?
<p>Core competencies to be developed</p> <ul style="list-style-type: none"> • Critical thinking and problem solving: Evaluation and decision-making skills as learners handle vegetable crop produce at harvesting stage to reduce spoilage. • Self-efficacy: planning skills as learners harvest vegetables for utilization at the right stage and method to avoid spoilage. 				
<p>Values</p> <ul style="list-style-type: none"> • Responsibility as learners practise harvesting of vegetables using appropriate method and at the right stage to ensure quality produce. 				
<p>Pertinent and Contemporary Issues</p> <ul style="list-style-type: none"> • Food hygiene as learners practise precautions in handling vegetable crop produce to reduce spoilage and ensure hygiene as part of food 				



quality.

Links to other subjects

- Health education as learners observe hygiene when handling vegetables to ensure food quality.

Assessment rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to identify appropriate stage of harvesting vegetable crops.	Demonstrates exemplary precision and justification in identifying appropriate stage of harvesting vegetable crops.	Identifies appropriate stage of harvesting vegetable crops.	Identifies some stages of harvesting vegetable crops.	When guided, identifies stages of harvesting vegetable crops.
Ability to harvest vegetable crops using suitable methods.	Demonstrates exemplary skills in harvesting vegetable crops using suitable methods.	Harvests vegetable crops using suitable methods.	Harvests some vegetable crops using suitable methods.	Harvests vegetable some crops using suitable methods only with extra guidance.
Ability to take precautions in harvesting vegetables to ensure quality of produce.	Demonstrates exemplary knowledge and skills in taking precautions while harvesting vegetables to ensure quality of produce.	Demonstrates ability to take precautions in harvesting vegetables to ensure quality of produce.	Demonstrates some ability to take some precautions in harvesting vegetables to ensure quality of produce.	Demonstrates some ability to take some precautions in harvesting vegetables to ensure quality of produce only with extra prompts.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
2.0 Crop production	2.4 Post harvest practices (5 lessons)	By the end of the sub strand the learner should be able to: a) explain the meaning of post-harvest practices in vegetable crop production, b) carry out various post-harvest practices on vegetable crop produce, c) prioritize post-harvest practices to reduce loss of crop produce, d) appreciate importance of post-harvest practices in reducing loss of crop produce.	Learner is guided to: <ul style="list-style-type: none"> • use digital resources to search and observe video clips on post-harvest practices of vegetables, then use their observations to deduce the meaning of post harvest practices. • discuss applicable post-harvest practices to ensure quality of vegetables in their locality to reduce spoilage. • derive a sequence of post-harvest practices for a vegetable crop produce of their choice and present in plenary. • discuss importance of post-harvest practices in reducing loss of crop produce. • conduct a practical: carry out post-harvest practices on provided samples of vegetables (<i>drying, cleaning or removing soil, sorting, grading and packing</i>). 	How can we reduce spoilage of vegetables after harvesting?
Core competencies to be developed				
<ul style="list-style-type: none"> • Digital literacy: interacting and connecting skills as learners search and observe video clips to deduce the meaning of post-harvest practices. 				
Values				
<ul style="list-style-type: none"> • Integrity as learners apply appropriate post-harvesting practices to prolong shelf life of vegetable produce without compromising users' health. 				



Pertinent and contemporary issues

- Food safety and security as learners carry out proper post-harvest practices to reduce spoilage and contamination of harvested vegetable produce.

Links to other subjects

- Health education as learners practise appropriate post-harvest practices on vegetables to reduce contamination on harvested vegetable produce.
- Business studies as learners relate the importance of carrying out post-harvest practices to reduce loss of crop produce in farming enterprises.

Assessment rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to explain the meaning of post-harvest practices in vegetable crop production.	Gives an exemplary elaborate explanation of the meaning of post-harvest practices in vegetable crop production.	Gives a clear explanation of the meaning of post-harvest practices in vegetable crop production.	Gives an explanation of the meaning of post-harvest practices in vegetable crop production with some details missing.	Gives an explanation of the meaning of post-harvest practices in vegetable crop production only if given extra prompts.
Ability to carry out various post-harvest practices in vegetable crop produce.	Demonstrates exemplary skillful ability to carry out five or more post-harvest practices in vegetable crop produce.	Demonstrates ability to carry out five post-harvest practices in vegetable crop produce.	Demonstrates some ability to carry out four post-harvest practices in vegetable crop produce.	Demonstrates some ability to carry out less than four post-harvest practices in vegetable crop produce.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
2.0 Crop production	2.5 Marketing crop produce (6 lessons)	By the end of the sub strand the learner should be able to: a) give ways of preparing vegetable crop produce for marketing, b) prepare vegetable crop produce for marketing, c) discuss various market outlets for vegetable crop produce, d) discuss expenses incurred in marketing of vegetable crop produce, e) appreciate the importance of preparing vegetable crop produce for marketing.	Learner is guided to: <ul style="list-style-type: none"> • discuss ways of preparing vegetable crop produce for marketing such as weighing, packaging, branding and labeling. • visit a vegetable market to observe and learn how different vegetables are weighed, packaged, branded, labelled and displayed. • demonstrate how to prepare samples of selected vegetables for marketing (<i>weighing, packaging, branding and labeling</i>) and make a display of produce in the classroom. • discuss various market outlets for vegetable crop produce (<i>digital platforms and physical market outlets</i>). • inquire from a resource person expenses incurred in marketing activities such as <i>transportation costs, advertisement costs, market authority charges and taxes</i>. • share experiences on benefits of preparing vegetable crop produce (<i>weighing, packaging, branding and labeling</i>) for marketing purposes. 	<ol style="list-style-type: none"> 1. How can we prepare vegetable crop produce for the market? 2. How can we sell prepared vegetable crop produce?
<p>Core competencies to be developed</p> <ul style="list-style-type: none"> • Self efficacy: self-awareness and planning skills as learners demonstrate how to prepare vegetable crop produce for marketing and display produce to the class. 				



Values				
<ul style="list-style-type: none"> Integrity as learners appreciate important roles played in the marketing process such as accurate weighing and pricing. 				
Pertinent and contemporary issues				
<ul style="list-style-type: none"> Financial literacy as learners visit the market, observe and learn how vegetable crop produce are prepared, displayed and sold in the market to earn income and make relevant obligations to market authorities and the government. 				
Links to other subjects				
<ul style="list-style-type: none"> Business studies as learners study the players and processes in a marketing system for crop produce. 				
Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to prepare a vegetable crop produce for marketing.	Demonstrate exemplary innovative skill ability to prepare a vegetable crop produce for marketing using a set of four methods.	Demonstrate ability to prepare a vegetable crop produce for marketing using a set of four methods.	Demonstrate some ability to prepare a vegetable crop produce for marketing using three methods.	Demonstrate some ability to prepare a vegetable crop produce for marketing using a less than three methods.
Ability to discuss various market outlets for vegetable crop produce.	Discusses with analytical details various market outlets for vegetable crop produce within the two categories (digital platforms and physical outlets).	Discusses various market outlets for vegetable crop produce within the two categories (digital platforms and physical outlets).	Discusses some market outlets for vegetable crop produce within less than two categories (digital platforms and physical outlets).	Discusses some market outlets for vegetable crop produce within less than two categories (digital platforms and physical outlets) only if given extra prompts.
Ability to discuss expenses incurred in marketing of vegetable crop produce.	Discusses with elaborate details four or more expenses incurred in marketing of vegetable crop produce.	Discusses four expenses incurred in marketing of vegetable crop produce.	Discusses three expenses incurred in marketing of vegetable crop produce.	Discusses less than three expenses incurred in marketing of vegetable crop produce.



STRAND 3.0: ANIMAL PRODUCTION

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
3.0 Animal production	3.1 Animal safety (9 lessons)	By the end of the sub strand the learner should be able to: a) describe the structures used to ensure safety in handling domestic animals, b) explain ways of ensuring safety of persons handling domestic animals, c) outline tools and equipment used to ensure safety when handling domestic animals, d) discuss ways of ensuring safety of domestic animal from predators, e) participate in promoting safety of domestic animal in the community.	Learner is guided to: <ul style="list-style-type: none"> use digital devices to observe and describe structures used to ensure safe handling of domestic animals such as a crush and kennel. brainstorm in pairs on ways of ensuring safety of persons handling domestic animals through methods such as restraining animals, correct position when handling, holding appropriate parts and ensuring safe distance. observe, discuss and identify tools and equipment used to ensure safety in handling domestic animals; tools to include halter, restraining rope, bull ring and lead stick. brainstorm on ways of keeping domestic animals safe from predators; such ways to include use of secure housing, secure fences, wire mesh over fish pond and poultry sheds and innovative scaring devices for predatory birds. take excursion to nearby farms to observe animal handling and present suggestions on how animal safety could be enhanced in the community. 	How can we ensure safety when handling animals?
<p>Core competencies to be developed</p> <ul style="list-style-type: none"> Citizenship: active community lifeskills as learners embrace and promote the rights of animals and their relationship with humans through animal safety in the community. 				



Values				
<ul style="list-style-type: none"> Love as learners undertake promotion of rights of animals through safe handling. 				
Pertinent and contemporary issues				
<ul style="list-style-type: none"> Safety of animals and animal handlers as the learners practice how to handle animals safely. 				
Links to other subjects				
<ul style="list-style-type: none"> Social studies as learners embrace human and animal rights as well as human and animal safety in agricultural context. 				
Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to describe the structures used to ensure safety in handling domestic animals.	Gives elaborately illustrative description of two structures used to ensure safety in handling domestic animals.	Gives a clear description of two structures used to ensure safety in handling domestic animals.	Gives a clear description of one structures used to ensure safety in handling domestic animals.	Gives some description of structures used to ensure safety in handling domestic animals that need probing for clarification.
Ability to outline tools and equipment used to ensure safety in handling domestic animals.	Gives an elaborate outline of four or more tools and equipment used to ensure safety in handling domestic animals.	Gives a clear outline of four tools and equipment used to ensure safety in handling domestic animals.	Gives a clear outline of three tools and equipment used to ensure safety in handling domestic animals.	Gives an outline of less than three tools and equipment used to ensure safety in handling domestic animals.
Ability to discuss ways of ensuring safety of domestic animals from predators.	Discusses with contextual details five or more ways of ensuring safety of domestic animals from predators.	Discusses five ways of ensuring safety of domestic animals from predators.	Discusses four ways of ensuring safety of domestic animals from predators.	Discusses less than four ways of ensuring safety of domestic animals from predators.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
3.0 Animal production	3.2 Poultry Rearing (8 lessons)	By the end of the sub strand the learner should be able to: a) describe a fold in poultry rearing, b) construct a fold for rearing poultry, c) describe rearing practices of poultry in a fold, d) rear poultry in a fold, e) show responsibility in rearing of poultry.	Learner is guided to: <ul style="list-style-type: none"> • search and observe video clips on poultry folds from digital devices. • share experiences and findings on how poultry folds look like. • use locally available materials such as reused and recycled wires, plastic and wood materials to construct a poultry fold. • explore various rearing practices of poultry in a fold (<i>moving the folds for feeding, watering, sanitation, protection from predators and harsh weather</i>). • Conduct a project: rear poultry of their choice in a fold unit. 	How can we rear poultry in a fold?
Core competencies to be developed				
<ul style="list-style-type: none"> • Self-efficacy: self-awareness and planning skills as learners plan and manage tasks on construction of poultry folds. • Creativity and imagination: observation and experimentation skills as learners develop ideas and construct folds for poultry rearing project. 				
Values				
Responsibility as learners carry out assigned tasks in the poultry rearing project.				
Pertinent and contemporary issues				
<ul style="list-style-type: none"> • Financial literacy as learners appreciate use of locally available materials and reuse of waste materials to construct folds for rearing poultry. 				
Links to other subjects				
<ul style="list-style-type: none"> • Pre-technical and pre-career studies as learners design and construct poultry folds. 				



Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to construct a fold for rearing poultry.	Demonstrated exemplary creativity in constructing a fold for rearing poultry using some innovatively recycled materials.	Constructs a fold for rearing poultry using some innovatively recycled materials.	Constructs a fold to an incomplete status for rearing poultry.	Constructs a fold to an incomplete status for rearing poultry only if given extra assistance and guidance.
Ability to describe rearing practices of poultry in a fold.	Gives illustratively clear description of five or more practices in rearing of poultry in a fold.	Gives a clear description of five practices in rearing of poultry in a fold.	Gives a clear description of four practices in rearing of poultry in a fold.	Gives description of less than four practices in rearing of poultry in a fold.
Ability to rear poultry in a fold.	Demonstrate skillful knowledge and ability to carry out five or more activities in rearing poultry in a fold.	Demonstrate ability to carry out five activities in rearing poultry in a fold.	Demonstrate some ability to carry out four activities in rearing poultry in a fold.	Demonstrate some ability to carry out less than four activities in rearing poultry in a fold.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
3.0 Animal Production	3.3 Preparation of Animal Products (6 lessons)	By the end of the sub strand the learner should be able to: <ol style="list-style-type: none"> describe how fresh fish is processed for various purposes, process fresh fish for various purposes, describe how poultry carcass is dressed for various purposes, dress poultry carcass for various purposes, appreciate the importance of processing fish and dressing poultry carcass for various purposes. 	Learner is guided to: <ul style="list-style-type: none"> share their experiences on how to process fresh fish, then present ideas in plenary. search for information from digital and print media on how to process fish for various purposes (<i>storage, consumption, transportation</i>) and share in plenary. process fresh fish through <i>scaling, gutting, cleaning, salting, and frying</i>. discuss how to dress poultry carcass (<i>beheading, defeathering, removal of offal, cleaning</i>) for various uses. dress a poultry carcass (<i>beheading, defeathering, removal of offal, cleaning</i>). observe processed fish and dressed poultry carcass and discuss the benefits of the processes. 	<ol style="list-style-type: none"> How can we process fresh fish? How can we dress poultry carcass?
Core competencies to be developed <ul style="list-style-type: none"> Learning to learn: working collaboratively and self-discipline skills as learners seek information, process fish and dressing poultry carcass for various purposes. 				
Values <ul style="list-style-type: none"> Integrity as learners embrace ethical methods of processing fish and dressing poultry carcass for various purposes. 				



Pertinent and contemporary issues				
<ul style="list-style-type: none"> Food safety and security as learners process fish and dress poultry carcass for purposes such as storage of the products for future use. 				
Links to other subjects				
<ul style="list-style-type: none"> Health education as learners observe hygiene in processing fish and dressing poultry carcass for various purposes. Business studies as learners appreciate the importance of processing animal products through appropriate techniques of value addition for consumption and sale at household level. 				
Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to describe how fresh fish is processed for various purposes.	Gives an elaborately contextual clear description on how fresh fish is processed for storage, transport and consumption purposes.	Gives a clear description on how fresh fish is processed for storage, transport and consumption purposes.	Gives some description that requires clarification on how fresh fish is processed for storage, transport and consumption purposes.	Gives some description that requires on how fresh fish is processed for storage, transport and consumption purposes only if given extra prompts.
Ability to process fresh fish for various purposes.	Procedurally and skillfully processes fresh fish for three purposes (storage, transport or consumption).	Processes fresh fish for a set of three purposes (storage, transport and consumption).	Processes fresh fish for at least two purposes (storage, transport or consumption).	Processes fresh fish for at least less than two purposes (storage, transport or consumption).
Ability to describe how to dress poultry carcass for various purposes.	Gives an illustrative description of how to dress poultry carcass for various purposes.	Gives a description of how to dress poultry carcass for various purposes.	Gives some description of how to dress poultry carcass for various purposes which may require clarification or correction.	Gives some description of how to dress poultry carcass for various purposes only if given extra prompts.
Ability to dress poultry carcass for various purposes.	Demonstrates exceptional skills in procedurally dressing poultry carcass for various purposes.	Procedurally dresses poultry carcass for various purposes.	Dresses poultry carcass for various purposes with some procedural guidance.	Dresses poultry carcass for various purposes with extra guidance and extra external assistance.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
3.0 Animal Production	3.4 Preservation of animal products (5 lessons)	By the end of the sub strand the learner should be able to: a) describe methods used in preserving milk and meat at household levels, b) preserve milk and meat to prolong shelf life at household level, c) acknowledge importance of preservation milk and meat for food security at household level.	Learner is guided to: <ul style="list-style-type: none"> brainstorm and share experiences on the various methods of preserving <i>milk and meat</i> in the locality. use print media and digital devices to search for information on how <i>milk and meat</i> are preserved. inquire from a resource person how to preserve milk and meat. discuss the importance of milk and meat preservation in enhancing food security. Conduct a practical: apply appropriate techniques to preserve <i>meat and milk</i> for use at household level (sun drying, smoking, salting, fermenting and boiling). 	How can we preserve milk and meat?
Core competencies to be developed				
<ul style="list-style-type: none"> Critical thinking and problem solving: interpretation and inferencing as learners determine and apply appropriate methods to preserve milk and meat. 				
Values				
<ul style="list-style-type: none"> Integrity as the learners apply a safe and hygienic method to preserve meat and milk. 				
Pertinent and contemporary issues				
<ul style="list-style-type: none"> Food safety and security as learners preserve milk and meat to increase their shelf life and availability. 				
Links to other subjects				
<ul style="list-style-type: none"> Integrated science as learners apply principles of preservation on milk and meat. 				



Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to describe methods used in preserving animal products.	Gives an analytical description of five or more methods used in preserving animal products.	Gives a clear description of five methods used in preserving animal products.	Gives a description of four methods used in preserving animal products.	Gives a description of less than four methods used in preserving animal products.
Ability to preserve animal products to prolong shelf life.	Demonstrates exceptional skills and innovation in applying five or more techniques to preserve animal products to prolong shelf life.	Aply applies five techniques to preserve animal products to prolong shelf life.	Applies four of the five techniques to preserve animal products to prolong shelf life.	Applies less than four of the five techniques to preserve animal products to prolong shelf life.

Teacher.co.ke



STRAND 4.0: AGRICULTURE AND TECHNOLOGY

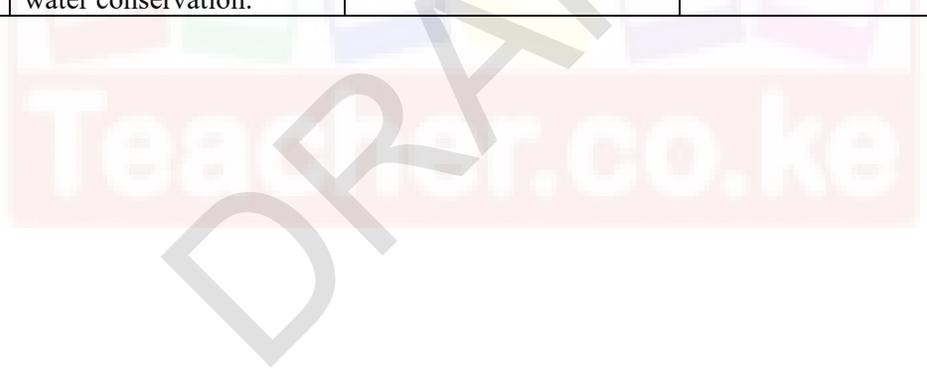
Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
4.0 Agriculture and technology	4.1 Innovative waterer project (9 lessons)	By the end of the sub strand the learner should be able to: a) describe waterers used in the community for domestic animals, b) explain challenges with waterers used in the community, c) design and construct an innovative waterer for water conservation, d) appreciate use of innovative waterers in animal rearing.	Learner is guided to: <ul style="list-style-type: none"> • identify school neighbours rearing small domestic animals, visit them, observe and describe functionality of the equipment used to provide the animals with water. • investigate and make presentations to explain the challenges of the existing waterers used for domestic animals observed in the community households. • discuss and present in class plenary the challenges involved in the equipment used and suggest innovative waterers to solve the problem. • search for information from digital and print media on innovative techniques for watering small domestic animals and share findings in plenary. • design and present a sketch drawing of an innovative waterer for a 	How can we make an innovative waterer for small domestic animals?



			selected category of domestic animals. <ul style="list-style-type: none"> • use locally available materials to construct the designed innovative waterer. • test functionality of the waterer and make any required adjustments. • use the constructed innovative waterer to provide water to target animal either at home, in the school or selected household. 	
Core competencies to be developed <ul style="list-style-type: none"> • Creativity and imagination: skills in making connections and asking questions as learners design and construct innovative waterer for a target domestic animal. 				
Values <ul style="list-style-type: none"> • Social justice as learners apply fairness in allocation of tasks, duties and activity conduct for the innovative waterer project. 				
Pertinent and contemporary issues <ul style="list-style-type: none"> • Environmental awareness and protection as learners re-use locally available materials to construct a waterer. 				
Links to other subjects <ul style="list-style-type: none"> • Technical studies as learners use technical skills, tools and equipment to design and construct an innovative waterer. 				
Assessment rubric				
Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to describe waterers used in the community.	Gives an elaborately detailed illustrative description of waterers	Gives a clear description of waterers used in the community.	Gives a description that requires clarity of details on waterers used in the	Gives a description that require correction for accuracy of details on



	used in the community.		community.	waterers used in the community.
Ability to explain challenges with waters used in the community	Gives an elaborately detailed explanation of challenges experienced with waters used in the community.	Gives a clear explanation of the challenges experienced with waters used in the community.	Gives some explanation that requires clarity of details on challenges experienced with waters used in the community.	Gives some explanation that requires correction for accuracy of details on challenges experienced with waters used in the community.
Ability to design and construct an innovative waterer for water conservation.	Makes a creative graphical design and skillfully constructs an innovative waterer for water conservation.	Ably designs and constructs an innovative waterer for water conservation.	Either able to make a design or construct an innovative waterer for water conservation.	Only designs or constructs an innovative waterer for water conservation when given extra assistance.



Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
4.0 Agriculture and technology	4.2 ICT in Agricultural support services (6 lessons)	By the end of the sub strand the learner should be able to: a) describe agricultural support services that can be accessed through use of ICT, b) access agricultural support services using ICT, c) show responsibility in use of ICT in accessing agricultural support services.	Learner is guided to: <ul style="list-style-type: none"> • brainstorm and share information on various agricultural support services that can be accessed by farmers through use of ICT (<i>weather forecast, veterinary services, input supply, extension services, market information and banking services</i>). • access agricultural support services (<i>weather forecast, veterinary services, input supply, extension services, market information and banking services</i>) using ICT and share the accessed information through presentations. • discuss and adhere to responsible use of ICT platforms by observing ethical and security considerations. 	How can we access agricultural support services using ICT?
Core competencies to be developed <ul style="list-style-type: none"> • Digital literacy: digital citizenship skill as learners act safely and responsibly in the use of appropriate ICT applications to access agricultural support services. 				
Values <ul style="list-style-type: none"> • Integrity as the learners ethically access online agricultural support services and information. 				
Pertinent and contemporary issues <ul style="list-style-type: none"> • Cyber security in the safe use of ICT to access information. 				



Links to other subjects

- Computer science as the learners make use of the various ICT tools and skills to access agricultural support services.

Assessment rubric

Indicator	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Ability to describe agricultural support services that can be accessed through use of ICT.	Gives an elaborately detailed description of six or more agricultural support services that can be accessed through use of ICT.	Gives a clear description of six agricultural support services that can be accessed through use of ICT.	Gives a description of five agricultural support services that can be accessed through use of ICT.	Gives a description of less than five agricultural support services that can be accessed through use of ICT.
Ability to access agricultural support services using ICT.	Demonstrates exceptional skills in accessing agricultural support services using ICT.	Able to access agricultural support services using ICT.	Experiences some skill challenges when accessing some agricultural support services using ICT.	Experiences major skill challenges that necessitate external assistance when accessing some agricultural support services using ICT.



COMMUNITY SERVICE LEARNING PROJECT

Community Service Learning project will focus on making preparations to undertake a CSL activity of their own choice. They will be required to identify a community problem through research, plan and come up with solutions to solve the problem. The preparations will be carried out in groups. Learners will build on CSL knowledge, skills and attitudes acquired during Life Skills Education as well as other subjects.

CSL Skills to be Covered:

- i) **Leadership:** Learners develop leadership skills as they undertake various roles during preparation of project activities.
- ii) **Financial Literacy and Entrepreneurship Skills:** Learners will gain skills on wise spending, saving and investing for sustained economic growth. They could consider ways of generating income as they undertake the CSL project through innovative ways. Moreover, they could identify business ideas and opportunities as well as resources to meet the community needs.
- iii) **Research:** Learners will be expected to identify a problem or pertinent issue in the community and propose how the problem can be solved. They will also acquire skills on how to report their findings.
- iv) **Communication:** Learners indicate reporting mechanisms to be used during the actual project; how they intend to communicate with members of the community, either online or offline.
- v) **Citizenship:** As learners engage in the CSL activities for this Grade, they will be vested with the rights, privileges and duties of a citizen, giving them a sense of belonging and attachment to the nation. They will also be empowered to engage and assume active roles in shaping a peaceful, tolerant and inclusive society.
- vi) **Life Skills Education:** Learners will be equipped with life skills such as decision making, assertiveness, effective communication, problem solving and stress management. This will enable them to handle interpersonal relationships, develop leadership skills as well as discover and develop their talents.
- vii) **Community Development:** Learners will be empowered with skills necessary to effect relevant change such as building a socially strong and resilient community.



Suggested Pertinent and contemporary issues	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
<ul style="list-style-type: none"> • Environmental degradation • Life style diseases • Communicable and non-communicable diseases • Poverty • Violence in community • Food security issues • Conflicts in the community <p>Note:</p> <p>The suggested PCIs are only examples. Teachers should allow learners to identify</p>	<p>By the end of the CSL project, the learner should be able to:</p> <ol style="list-style-type: none"> a) identify a problem in the community through research, b) plan to solve the identified problem in the community, c) design solutions to the identified problem, d) appreciate the need to belong to a community. 	<p>The learner is guided to:</p> <ul style="list-style-type: none"> • brainstorm on pertinent and contemporary issues in their community that need attention in groups • choose a PCI that needs immediate attention and explain why in groups • carry out research using digital devices print media/interactions with members of the community/resource persons in identifying a community problem to address in groups • discuss possible solutions to the identified issue in groups • propose the most appropriate solution to the problem in groups • discuss ways and instruments they can use to collect data on the problem (questionnaires, interviews and observation schedule) • develop instruments for data collection • identify resources needed for the CSL project (human, technical, financial) 	<ol style="list-style-type: none"> 1. How does one determine community needs? 2. What preparations are required before initiating a project?



PCIs as per their context and reality.		<ul style="list-style-type: none"> • discuss when the project will begin and end • prepare a programme/timetable of the entire project execution • Assign roles to be carried by all group members • reflect on how the project preparation enhanced learning. 	
<p>Key Component of CSL developed</p> <p>a) Identification of a problem in the community through research b) planning to solve the identified problem c) designing solutions to the identified problem</p>			
<p>Core competencies to be developed</p> <ul style="list-style-type: none"> • Communication and collaboration: Learners will make the preparations in groups and conduct discussions on best ways of carrying out the project. • Self-efficacy: Learners develop the skills of self-awareness and leadership as they undertake the CSL project • Creativity and Imagination: Learners will come up with creative ways of solving the identified community problem • Critical Thinking and Problem Solving: Learners will demonstrate autonomy in identifying a community need, exploring plausible solutions and making necessary preparations to address the problem. • Digital Literacy: Learners can use technology when as they research on a community problem that they can address. • Learning to Learn: Learners gain new knowledge and skills as they identify a community problem to be addressed and make preparations to carry out the project. • Citizenship: This is enhanced as learners choose a pertinent and contemporary issue that needs immediate attention in the 			



community.

Pertinent and contemporary Issues

- Social cohesion as learners discuss possible solutions to the identified issue.
- Critical thinking as learners discuss possible solutions to the identified issue.

Values

- Integrity as learners carry out research using digital devices and print media as they identify a community problem to address.
- Respect as learners brainstorm on pertinent and contemporary issues in their community that need attention.

Assessment rubric

Indicator	Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Ability to identify a problem in the community through research	Gives exceptionally refined details that pertinently identifies a problem in the community through research.	Gives details that clearly identifies a problem in the community through research.	Gives some details that require to be refined to focus identification of a problem in the community through research.	Gives some details that require to be corrected for accuracy to identify a problem in the community through research.
Ability to plan to solve the identified problem	Presents an illustratively and elaborately detailed plan to solve the identified problem.	Presents a clear plan to solve the identified problem.	Presents a plan that requires to be modified for applicability to solve the identified problem.	Presents a plan that requires to be grossly corrected for accuracy and modified for applicability to solve the identified problem.



Ability to design solutions to the identified problem	Demonstrates exceptionally creative knowledge and skills in designing solutions to solve the identified problem.	Able designs solutions to solve the identified problem.	Designs solutions that requires to be modified for applicability to solve the identified problem.	Designs solutions that requires to be grossly corrected for accuracy and modified for applicability to solve the identified problem.
---	--	---	---	--



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 Agricultural Environment	1.1 Soil conservation measures	<ul style="list-style-type: none"> • Observation of learning activities. • Written assignment. 	<p>Stones, trash from plant remains, spade, jembe, planting material for grass, any cover crop, waste papers, soil, carton or cardboard.</p> <p>Digital resources.</p>	Learners to initiate campaigns in and out of school to sensitise parents and community members on soil conservation.
	1.2 Water harvesting and storage	<ul style="list-style-type: none"> • Written assignment • Oral assessment • Graded observation of learning activities • Group project portfolio on water conservation structure. 	<p>Garden tools such as jembes, fork jembes, spade, panga, slasher.</p> <p>Manila papers and marker pens.</p>	Learners to initiate water harvesting and storage structures to influence the school community to conserve water.



<p>2.0 Crop Production</p>	<p>2.1 Square foot gardening</p>	<ul style="list-style-type: none"> • Written report • Graded observation • Project portfolio 	<p>Garden tools such as jembes, fork jembes, spade, panga, slasher, tape measure. Variety of planting materials for vegetables and herbs.</p>	<p>Learners to prepare and manage square foot garden in the school for display. Use the display to extend knowledge on crop management and harvesting to the school community.</p>
	<p>2.2 Crop management</p>	<ul style="list-style-type: none"> • Written tests • Graded observation of group work activities 	<p>Samples of crop materials affected by crop pests and diseases or a field with growing crops. Digital resource or charts displaying various crop pests and diseases.</p>	
	<p>2.3 Crop harvesting</p>	<ul style="list-style-type: none"> • Oral questions • Graded observation of group work activities in harvesting crops. 	<p>A field with growing vegetables.</p>	
	<p>2.4 Post-harvest practices</p>	<ul style="list-style-type: none"> • Graded observation on drying and grading practices • Oral assessment using questionnaire 	<p>Digital resources on post-harvest practices. Harvested vegetable produce. Containers for storing vegetables.</p>	



	2.5 Marketing crop produce	<ul style="list-style-type: none"> • Written test • Written report on field excursion. 	Weighing scale, packing material, packaging materials. Resource person on marketing of vegetables.	Visit to a nearby vegetable market to observe marketing activities.
3.0 Animal Production	3.1 Animal safety	<ul style="list-style-type: none"> • Written test • Oral assessment on safety when handling animal. 	Photos, video clips on safety when handling animals. Resource person Animal handling tools and equipment.	Visit to nearby animal farm to observe animal safety and fold poultry rearing.
	3.2 Poultry rearing	<ul style="list-style-type: none"> • Project portfolio on construction of a simple poultry fold. • Project journal. • Written assignment or report • Oral assessment on the project processes. 	Print materials and digital resources on fold poultry rearing method. Materials for constructing a fold such as recycled wood and wires.	
	3.3 Preparation of animal products	<ul style="list-style-type: none"> • Written assignment • Graded observation of activities in preparation of chosen product. 	Fresh fish, live poultry Knife, basin. Digital resources.	



	3.4 Preservation of animal products	<ul style="list-style-type: none"> • Oral questions • Graded observation of practical tasks 	Samples of milk and meat. Resource person. Source of heat, salt, utensils.	
4.0 Agriculture and Technology	4.1 Innovative waterer project	<ul style="list-style-type: none"> • Project journal on activities in designing and construction of innovative waterer. 	Video clips on poultry waterers. Materials for constructing selected waterer.	Visit to the community to assess waterer needs and provide applicable solutions.
	4.2 ICT in agricultural support services.	<ul style="list-style-type: none"> • Oral assessment questions. • Written tests • Graded observation on learner project accessing support services. 	Digital resources Resource person	Visit to agricultural support service providers.



APPENDIX 2: GUIDELINES ON RESOURCES AND RESOURCE UTILIZATION FOR AGRICULTURE CURRICULUM

The following resources are required across various stands in the curriculum not only for Grade 8 Agriculture but also in other Grades among other subject areas in Junior secondary education level. Agriculture curriculum considers them as key resources and therefore gives these special guidelines:

1. Land (this refers to any space for agricultural activities for the curriculum purposes).

- 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 along 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 learner safety), hanging space on walls or hanging framework among others.*
- The spaces mentioned above could appropriately be used with 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 critical resource in Agriculture. The curriculum recommends that all schools should prioritize water harvesting and storage to avail this critical resource throughout the year. Prioritize water conservation in all suggested activities.

3. Planting materials

- The curriculum recommends use of available materials in the local environment. Where planting is suggested, the curriculum gives a broad option within the category specified in the learning outcome or learning experiences. Allow learners to adopt what is best suited and available in their local environment.

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 to ensure safety and security of the learners and the devices.
- Digital devices are required across the curriculum as support tool to access and share information. They are suggested in several sub stands but may be used in all the sub strands in the curriculum. Digital devices, resources and related accessories include but not limited to: computer, laptop, tablet, smart phone, digital camera, flash disks, DVDs, memory card, internet connectivity devices, projector, external memory drive, connectivity cables, source of power and printer.

5. Assorted farm tools and equipment

- Selected crop production and animal handling tools and equipment may be used based on the actual task to be carried out in the learning process.
- The tools and equipment include 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, watering can, rope and halter. The tools and equipment should be shared across the Grades in the Junior secondary



level. The number of tools should not be a hindrance since their utilization is based on the particular activity to be carried out during the lesson or project time. Project activities could best be carried out in organized learner-groups.

