KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

A Skilled and Ethical Society

JUNIOR SCHOOL CURRICULUM DESIGN

AGRICULTURE AND NUTRITION

GRADE 9

First published 2024

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NATIONAL GOALS OF EDUCATION

Education in Kenya should:

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

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

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

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

   a) **Social Needs**

      Education in Kenya must prepare children for changes in attitudes and relationships which are necessary for the smooth progress of a rapidly developing modern economy. There is bound to be a silent social revolution following the wake of rapid modernisation. 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 recognises the rapid industrial and technological changes taking place, especially in the developed world. We can only be part of this development if our education system is deliberately focused on the knowledge, skills and attitudes that will prepare our young people for these changing global trends.

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

   Education should provide opportunities for the fullest development of individual talents and personality. It should help

children to develop their potential interests and abilities. A vital aspect of individual development is the building of character.

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

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

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

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

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

LESSON ALLOCATION AT JUNIOR SCHOOL

S/No	Learning Area	Number of Lessons
1.	English	5
2.	Kiswahili / Kenya Sign Language	4
3.	Mathematics	5
4.	Religious Education	4
5.	Social Studies	4
6.	Integrated Science	5
7.	Pre-Technical Studies	4
8.	Agriculture and Nutrition	4
9.	Creative Arts and Sports	5
Total		**40**

* 1 lesson is set aside for the Pastoral/Religious Instruction Programme.

LEARNING OUTCOMES FOR JUNIOR SCHOOL

By end of Junior 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

Agriculture and nutrition is a learning area that anchors on the United Nation Sustainable development goals and the socio-economic pillar of Kenya Vision 2030 to promote health, hygiene, food and nutrition security through education. It is an integrated learning area comprising of agriculture and home science concepts introduced in the upper primary curriculum. The learners will deepen the acquired knowledge, skills, attitudes and values in conservation of resources, food production, hygiene and innovative production techniques. The curriculum will enrich learner's competencies in conservation of resources, crop and animal production, foods and nutrition, personal and environmental hygiene, basic clothing construction and laundry work. Agriculture and nutrition curriculum will form grounds for specialization in respective career pathways in senior school and beyond.

GENERAL LEARNING OUTCOMES

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

1. Participate actively in agricultural and household activities in conservation of resources.
2. Use scarce resources through innovative practices to contribute towards food and nutrition security.
3. Engage in food production processes for self-sustainability, health and economic development.
4. Adopt personal and environmental hygiene practices for healthy living.
5. Apply appropriate production techniques, innovative technologies, digital and media resources to enhance sustainable agricultural and household practices.
6. Appreciate agricultural and household skills as a worthy niche for hobby, career development, further education and training.

SUMMARY OF STRANDS AND SUB STRANDS

Strands	Sub strands
1.0 Conservation of Resources	1.1 Conserving animal feed: Hay
	1.2 Conserving leftover feed
	1.3 Integrated farming
2.0 Food Production Processes	2.1 Organic gardening
	2.2 Storage of crop produce
	2.3 Cooking: Using flour mixtures
3.0 Hygiene Practices	3.1 Cleaning waste disposal facilities
	3.2 Disinfecting household articles
4.0 Production Techniques	4.1 Grafting in plants
	4.2 Homemade sun dryier

STRAND 1.0: CONSERVATION OF RESOURCES

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Conservation of Resources	**1.1 Conserving Animal Feed: Hay** (12 lessons)	By the end of the sub-strand the learner should be able to: a) describe methods of conserving forage in coping with drought, b) conserve forage to cope with drought, c) adopt conservation of forage in coping with drought.	Learners are guided to: • use digital and print resources to search for information and share experiences on methods of conserving forage in coping with drought *(baled hay making, standing forage, stacking).* • conserve forage using methods such as stacking or box bailing using locally available such as maize stover and straw to conserve hay for drought season. • discuss and make class presentation on how households can adopt conservation of forage in coping with drought. • problem solving skills as learners apply applicable methods to conserve forage, associate peaceful coexistence through conservation of forage during drought, disaster risk reduction using conserved forage to save animals.	How can hay conservation contribute to coping with drought?

Core competencies to be developed

- Critical thinking and problem solving: evaluation and decision-making skills as learners analyse and apply methods of conserving hay to cope with drought.
- Communication and collaboration: Speaking and dialogue skills as learners discuss ways of conserving forage to cope with drought in the context of rearing animals.

Values Peace: respect for diversity of opinions as learners discuss methods of conserving hay to cope with drought.
Pertinent and contemporary issues Disaster risk reduction as learners analyse and adopt applicable methods of conserving hay to cope with drought.
Links to other subjects Learners relate conservation of hay to concepts of mitigating effects of climate change learnt in social studies.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Conservation of Resources	**1.2 Conserving Leftover Foods** (11 lessons)	By the end of the sub-strand the learner should be able to: a) explain the importance of conserving leftover foods at home b) prepare leftover foods to avoid wastage c) embrace the use of leftover foods to avoid food wastage.	Learners are guided to: • search and share experiences on how left over foods importance of conserving leftover foods at home. • prepare leftover foods for consumption through methods such as *reheating or preparing another recipe* to avoid wastage. • make presentations on various recipes adopted from leftover foods to avoid food wastage. • creativity and imagination skills on preparing leftover foods, value of integrity to avoid wasteful use of resources, hygiene in the food handling to prevent food wastage and contamination.	How is left over food prepared for use to prevent food wastage?
Core competencies to be developed Creativity and imagination: experimenting skills as learners explore different ways of preparing left over foods.				
Values Integrity: utilizing resources prudently to avoid wastage of resources in the preparation of leftover foods.				
Pertinent and contemporary issues Hygiene in handling of foods to prevent contamination and spoilage.				
Links to other subjects				

Learners relate conservation of leftover foods to spread of food related communicable diseases learnt through Integrated science.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Conservation of Resources	**1.3 Integrated Farming** (12 lessons)	By the end of the sub-strand the learner should be able to: a) describe components of integrated farming in conserving resources, b) make a model of integrated farming for conservation of resources, c) appreciate the importance of integrated farming in conservation of resource.	Learners are guided to: • take an excursion or search information on integrated farming practices find out how components of integrated farming help to conserve resources. • design or sketch and make a model to illustrate integrated farming components such as fish rearing, rabbit keeping, poultry keeping and vegetable production on the same plot of land to show their relational benefits. • learners make class presentations on the models of integrated farming and the importance of the integration in conserving resources. • creativity skills in the designing and making a model of integrated farming, respect for each others creative work in modelling integrated farming, environmental conservation as they relate the benefits of each component of integrated farming.	How can integrated farming conserve resources?
Core competencies to be developed				

• Creativity and imagination: observation and making connection skills as learners seek information, design and make a model to depict integrated farming enterprise. • Critical thinking and problem solving: evaluation and decision-making skills as learners analyse the environment for components of integrated farming and design models of integrated farming enterprise.
Values • Unity: team work as learners harness gifts and special skills of the group members in designing and making an integrated farming model. • Respect: accommodating diverse opinions while learners discuss and design model of integrated farming.
Pertinent and contemporary issues Environmental awareness and protection as learners re-use locally available resources such as waste pieces of wood, cartons, cardboards and papers to design and make a model of integrated farming enterprise.
Links to other subjects Learners apply skills of designing and choice of materials learnt in Pre-Technical Studies in the construction of integrated farming model.

Assessment Rubric

Level / **Indicator**	**Exceeds Expectations**	**Meets Expectations**	**Approaches Expectations**	**Below Expectations**
Ability to describe various ways of conserving resources.	Describes three ways of conserving resources (conserving hay, conserving leftover food, using integrated farming) with	Describes three ways of conserving resources (conserving hay, conserving leftover food, using integrated	Describes two ways of conserving resources (conserving hay, conserving leftover food, using integrated	Describes less than two ways of conserving resources (conserving hay, conserving leftover food, using

	elaborate details.	farming).	farming).	integrated farming).
Ability to apply various ways of conserving resources.	Applies three ways of conserving resources (conserving hay, conserving leftover food, using integrated farming) creatively and innovatively.	Applies three ways of conserving resources (conserving hay, conserving leftover food, using integrated farming).	Applies two ways of conserving resources (conserving hay, conserving leftover food, using integrated farming).	Applies less than two ways of conserving resources (conserving hay, conserving leftover food, using integrated farming).
Ability to demonstrate responsibility in conservation of resources.	Demonstrates more than three indicators of responsibility (offers leadership, observes safety, and shows initiative to solving problems) in tasks assigned in conservation of resources.	Demonstrates three indicators of responsibility (offers leadership, observes safety, and shows initiative to solving problems) in tasks assigned in conservation of resources.	Demonstrates two indicators of responsibility (offers leadership, observes safety, and shows initiative to solving problems) in tasks assigned in conservation of resources.	Demonstrates less than two indicators of responsibility (offers leadership, observes safety, and shows initiative to solving problems) in tasks assigned in conservation of resources.

STRAND 2.0 FOOD PRODUCTION PROCESSES

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Food Production Processes	**2.1 Organic Gardening** (14 lessons)	By the end of the sub-strand the learner should be able to: a) explain organic gardening practices in crop production b) grow a crop using organic gardening practices c) appreciate importance of organic gardening in production of healthy foods.	Learners are guided to: • search and share information organic gardening practices in crop production. • grow a selected short season crop such as a vegetable, legume or spice crop using organic gardening practices such as *use of organic manure organic pesticides, mechanical weed control, use of organic foliar feed made from animal wastes and plants like Mexican sunflower.* • learners share experiences through class presentations to appreciate importance of organic gardening in production of healthy foods. • learning to learn as learners make self-discovery of applicable gardening techniques, integrity as learners honestly declare organic practices, unity as they work in teamwork, health promotion as learners acquire skills of producing foods without use of chemicals.	1. Why should we practise organic gardening? 2. How can we produce food crops through organic gardening?
Core competencies to be developed • Learning to learn: working collaboratively and organising own learning skills as learners grow crops using organic gardening practices.				

• Self-efficacy: planning skills as learners grow crops using organic farming practices.
Values • Unity: working in teams as learners undertake the project on growing crops using organic gardening practices. • Integrity: honesty as learners practice organic gardening practices.
Pertinent and contemporary issues Food health and safety as learners acquire skills of growing foods without use of agro-chemicals.
Links to other subjects Learners relate organic gardening practices to farming practices in the social studies.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Questions
2.0 Food Production Processes	**2.2 Storage of Crop Produce** (10 lessons)	By the end of the sub-strand the learner should be able to: a) explain ways of preparing storage structures before storing crop produce, b) prepare an existing storage structure in readiness for storing crop produce, c) manage stored crop produce to reduce spoilage, d) show responsibility in managing stored crop produce to reduce spoilage.	Learners are guided to: • use digital devices or print media to search for information on ways of preparing storage structures in readiness for storage of crop produce and share findings in plenary. • prepare an existing storage structure or facility *(container, store room, granary, storage bags)* in readiness for storage through practices such as *cleaning, dusting, sealing cracks, repairing leakages, emptying previous crop produce and controlling rodents.* • manage stored crop produce (checking moisture content in cereals and pulses, ensuring ventilation, controlling rodents, turning the stored crop produce and disposing off spoilt produce). • critical thinking skills (open mindedness) as learners manage storage structures to avoid spoilage, responsibility as learners team play to maintenance chores, food safety to prevent aflatoxin in food storage.	1. How can we prepare facility in readiness for storage of crop produce? 2. How should crop produce be managed during storage?
Core competencies to be developed				

Critical thinking and problem solving: open-mindedness and creativity skills as learners prepare storage structure and manage crop produce to maintain quality and reduce post-harvest loss.
Values Responsibility: engaging in assigned roles as learners manage stored crop produce in the school food store.
Pertinent and contemporary issues Food safety and security as learners manage crop storage structures to prevent spoilage of crop produce.
Links to other subjects Learners relate management of storage of crop produce to farming as an economic activity learnt in social studies.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Food Production Processes	**2.3 Cooking: Using Flour Mixtures** (14 lessons)	By the end of the sub-strand the learner should be able to: a) identify types of flour mixtures used in food production b) prepare flour mixtures for food production c) make products from various flour mixture d) appreciate products made from various flour mixtures.	Learners are guided to: • use print or digital resources to identify types of flour mixtures used in food production such as *batters and dough*. • prepare flour mixtures such as *batters and doughs* for food production. • make products such as *pancake, mandazi and chapati* from various flour mixtures. • learning to learn as learners apply procedures of making flour mixtures, integrity as learners use ethically acceptable procedures to prepare foods and safety in the use of tools and equipment.	How can we make products from flour mixture?
Core competencies to be developed Learning to learn: reflection on own work as learners apply procedures of preparing flour mixtures.				
Values Integrity: following ethically acceptable procedures in preparing flour mixtures.				
Pertinent and contemporary issues Safety of self and others as learners use tools and fuels in making products from flour mixtures.				
Links to other subjects				

Learners relate measurement of ingredients in preparing flour mixtures to weights and measurements learnt in mathematics.

Assessment rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to describe food production processes at household level.	Describes three food production processes (organic gardening, storage of crop produce and cooking using flour mixtures) with elaborate details.	Describes three food production processes (organic gardening, storage of crop produce and cooking using flour mixtures) at household level.	Describes two food production processes (organic gardening, storage of crop produce and cooking using flour mixtures) at household level.	Describes less than two food production processes (organic gardening, storage of crop produce and cooking using flour mixtures) at household level.
Ability to carry out food production processes at household level	Carries out three food production processes (organic gardening, storage of crop produce and cooking using flour mixtures) with creativity and innovative approaches.	Carries out three food production processes (organic gardening, storage of crop produce and cooking using flour mixtures) at household level.	Carries out two food production processes (organic gardening, storage of crop produce and cooking using flour mixtures) at household level.	Carries out less than two food production processes (organic gardening, storage of crop produce and cooking using flour mixtures) at household level.
Ability to portray unity while carrying out food production	Learners portrays more than three indicators of unity (sharing of available	Learners portrays three indicators of unity (sharing of available	Learners portrays two indicators of unity (sharing of available	Learners portrays less than two indicators of unity (sharing of

processes.	resources, appreciating efforts of others in task and embracing team spirit) in carrying out assigned tasks.	resources, appreciating efforts of others in task and embracing team spirit) in carrying out assigned tasks.	resources, appreciating efforts of others in task and embracing team spirit) in carrying out assigned tasks.	available resources, appreciating efforts of others in task and embracing team spirit) in carrying out assigned tasks.

STRAND 3.0 HYGIENE PRACTICES

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Hygiene Practices	**3.1 Cleaning Waste Disposal Facilities** (9 lessons)	By the end of the sub-strand the learner should be able to: a) explain importance of cleaning waste disposal facilities b) clean waste disposal facilities at household level c) adopt use of clean waste disposal facilities at household level.	Learners are guided to: • discuss and share experiences on importance of cleaning waste disposal facilities such as *waste bin, sink and open drains.* • clean waste disposal facilities such as *dust bin, sink and open drains.* • problem solving skills while learners identify the waste disposal facilities and clean them, responsibility as learner take initiative to maintain cleanliness and promotion of environmental hygiene.	How does cleaning waste disposal facilities promote hygiene?
Core competencies to be developed Critical thinking and problem solving: reflection skills as learners assess their success in cleaning of waste disposal facilities.				
Values Responsibility: taking safety precautions as learners clean waste disposal facilities.				
Pertinent and contemporary issues Environmental awareness as learners clean waste disposal facilities to promote hygiene in their living places.				
Links to other subjects Learners relate cleaning of waste disposal facilities to aspects of good health learnt in Integrated Science.				

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Hygiene Practices	**3.2 Disinfecting Clothing and Household Articles** (12 lessons)	By the end of the sub-strand the learner should be able to: a) describe methods of disinfecting clothing and household articles b) carry out disinfection of clothing and household articles, c) appreciate the importance of disinfecting clothing and household articles.	Learners are guided to: • search for information or observe demonstration on methods of disinfecting clothing and household articles such as *sunlight, salting, boiling, use of disinfectants, ironing.* • disinfect clothing and household articles like aprons, gloves, towels, dustcoats, handkerchief, socks among other personal items using methods such as *sunlight, salting, boiling, use of disinfectants, ironing.* • make class presentations on the importance of disinfecting clothing and household articles for hygiene purposes. • learning to learn as learners acquire new skills and follow guided procedures, value of responsibility as learners take care of their personal items, personal hygiene as they disinfect their personal articles to prevent communicable diseases.	How can we disinfect household articles for hygiene purposes?

Core competencies to be developed Learning to learn: organizing own learning as they acquire new skills on methods of disinfecting clothing and household articles.
Values Responsibility: taking care of clothing and household articles as learners carry out disinfection.
Pertinent and contemporary issues Health promotion awareness as learners disinfect clothing and household articles to prevent spread of diseases.
Links to other subjects Learners relate use of disinfectants to solvents learnt in Integrated science.

Assessment rubric

Level / **Indicator**	**Exceeds Expectations**	**Meets Expectations**	**Approaches Expectations**	**Below Expectations**
Ability to explain hygiene practices at household level.	Explains cleaning waste disposal activities and disinfecting household articles at household level with elaborate details.	Explains cleaning waste disposal activities and disinfecting household articles at household level.	Explains either cleaning waste disposal activities or disinfecting household articles at household level.	Explains cleaning waste disposal activities or disinfecting household articles at household level with details that require correction.
Ability to carry out hygiene practices at household level.	Carries out cleaning waste disposal activities and disinfecting household articles with observable	Carries out cleaning waste disposal activities and disinfecting household articles at household level.	Carries out cleaning waste disposal activities or disinfecting household	Carries out cleaning waste disposal activities or disinfecting household articles at household

	attention to details.		articles at household level.	level with observable areas for corrections.
Ability to portray responsibility when carrying out hygiene practices.	Learner portrays more than three indicators of responsibility by engaging in assigned roles, observing safety, and proactively solving problems when carrying out hygiene practices.	Learner portrays three indicators of responsibility by engaging in assigned roles, observing safety and proactively solves problems when carrying out hygiene practices.	Learner portrays two indicators of responsibility by engaging in assigned roles, observing safety or proactively solves problems when carrying out hygiene practices.	Learner portrays less than two indicators of responsibility by engaging in assigned roles, observing safety or proactively solves problems when carrying out hygiene practices.

STRAND 4.0 PRODUCTION TECHNIQUES

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
4.0 Production Techniques	**4.1 Grafting in Plants** (13 lessons)	By the end of the sub-strand the learner should be able to: a) describe grafting as a method of plant propagation, b) carry out grafting for various purposes, c) take care of the grafted plant to ensure successful union, d) appraise grafting for aesthetics, repair, improvement and rejuvenation purposes.	Learners are guided to: • use print media or digital resources to search for information on grafting as a method of plant propagation. • carry out grafting in plants (with the help of a resource person) for repair, aesthetic, rejuvenation or improvement purposes. • carry out caring practices such as *watering, protecting the union, removal of the graft tape after successful union, removal of other buds on the root stock.* • appraise grafting for reasons of *(repairing a damaged plant, aesthetic, rejuvenation and plant improvement).* • learning to learn as learners realize new field practices in crop management, respect as learners interact with the resource person and personal safety as learners use sharp tools in grafting.	Why is grafting done on a plant?
Core competencies to be developed • Learning to learn: skill on reflection on own work as learners evaluate success on the grafted plant for rejuvenation,				

aesthetics, repair or improvement of existing plant. • Self-efficacy: awareness of potential skills in manipulation of a plant through grafting for plant propagation.
Values • Respect: appreciating each other's abilities and skills as learners carry out grafting technique with varied degrees of success. • Responsibility: taking assigned roles as learners undertake tasks in the grafting practical activity.
Pertinent and contemporary issues Safety of self and others as learners handle and use sharp grafting tools and equipment.
Links to other subjects Learners relate carrying out grafting to parts of a plant and relationship between plants learnt in Integrated Science.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
4.0 Production Techniques	**4.2 Homemade Sun Dryer** (13 lessons)	By the end of the sub strand the learner should be able to: a) describe how to make a homemade sun dryer for vegetables, b) construct a homemade sun dryer to preserve vegetables, c) adopt the use of homemade sun dryer in preservation of vegetables.	Learners are guided to: • use digital and print media resources to search for information on how to make a homemade sun dryer for vegetables. • sketch and construct homemade sun dryer for drying vegetables using locally available materials. • use the constructed homemade sun dryer to dry vegetables. • problem solving skills by analyzing and developing homemade sun dryer, patriotism as learners contribute to solving problem of vegetable spoilage, food security and nutrition as learners conserve foods to reduce losses.	How can innovative technology be used to preserve vegetables?
Core competencies to be developed • Self-efficacy: leadership and planning skills as learners design, construct and use homemade sun dryer for vegetables. • Critical thinking and problem solving: skills in assessment or evaluating challenging situation and designing solution in the construction of homemade sun dryers.				
Values • Responsibility: proactively solving problems by constructing homemade sun dryer to prevent spoilage of vegetables.				

• Patriotism as learners contribute to solving the community problems of food spoilage by constructing homemade sun dryers.
Pertinent and contemporary issues Food nutrition and security as learners construct homemade sun dryer to preserve vegetables.
Links to other subjects Learners relate designing and construction of homemade sun dryer to skills learnt in Pre-technical studies on designing, sketching and choice of construction materials.

Assessment rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to describe production techniques at household level.	Describes grafting in plants and homemade sun dryer as production techniques at household level with illustrative details.	Describes grafting in plants and homemade sun dryer as production techniques at household level.	Describes either grafting in plants or homemade sun dryer as production techniques at household level.	Describes either grafting in plants or homemade sun dryer with description that need corrections.
Ability to apply out production technique at household level.	Applies grafting in plants and constructs a homemade dryer with observable innovation and creativity.	Applies grafting in plants and constructs a homemade dryer.	Applies either grafting in plants or constructs a homemade dryer.	Applies either grafting in plants or constructs a homemade dryer with observable need for corrections.
Ability to portray	Portrays unity by showing	Portrays unity by	Portrays unity by	Portrays unity by

unity in applying production techniques at household level.	more than three observable indicators (striving to achieve a common goal, appreciating efforts of others and respecting other people's opinions).	showing three observable indicators (striving to achieve a common goal, appreciating efforts of others and respecting other people's opinions).	showing two observable indicators (striving to achieve a common goal, appreciating efforts of others and respecting other people's opinions).	showing less than two observable indicators (striving to achieve a common goal, appreciating efforts of others and respecting other people's opinions).

APPENDIX 1: GUIDELINES FOR INTEGRATING COMMUNITY SERVICE LEARNING

Introduction

In Grade 9, learners will undertake an integrated Community Service Learning (CSL) project of choice from a single or combined subject. The CSL project will enable the learner to apply knowledge and skills from other subjects to address a problem in the community. The implementation of the integrated CSL project will take a Whole School Approach, where all members of the school community including teachers, school administration, parents/guardians/ local community and support staff. It will be a collaborative effort where the teacher of Social Studies coordinates and works with other subject teachers to design and implement the integrated CSL project. The teachers will select a theme drawn from different Learning Areas and the broader categories of Pertinent and Contemporary Issues (PCIs) for the CSL project. It should also provide an opportunity for development of core competencies and nurturing of values. Learners will undertake a **variety of** integrated CSL group projects in teams of following a 6-step milestone approach as follows:

Milestone	**Description**
Milestone 1	**Problem Identification** Learners study their community to understand the challenges faced and their effects on community members. Some of the challenges in the community can be: • Environmental degradation • Lifestyle diseases, Communicable and non-communicable diseases • Poverty • Violence and conflicts in the community • Food security issues

Milestone 2	**Designing a solution** Learners create an intervention to address the challenge identified.
Milestone 3	**Planning for the Project** Learners share roles, create a list of activities to be undertaken, mobilise resources needed to create their intervention and set timelines for execution
Milestone 4	**Implementation** The learners execute the project and keep evidence of work done.
Milestone 5	**Showcasing /Exhibition and Report Writing** Exhibitions involve showcasing learners' project items to the community and reflecting on the feedback Learners write a report detailing their project activities and learnings from feedback
Milestone 6	**Reflection** Learners review all project work to learn from the challenges faced. They link project work with academic concepts, noting how the concepts enabled them to do their project as well as how the project helped to deepen learning of the academic concepts.

Note: The milestones will be staggered across the 3 terms of the academic calendar.

Assessment of CSL integrated Project

Assessment for the integrated CSL group projects will be conducted formatively. The assessment will consider both the process and end product. This entails assessing each of the milestone stages of the integrated CSL group projects. They will focus on 3 components namely: skills from various learning areas applied in carrying out the projects, core competencies developed and values nurtured.

APPENDIX 2: LIST OF ASSESSMENT METHODS, LEARNING RESOURCES AND NON-FORMAL ACTIVITIES

Strand	Suggested Assessment Methods	Suggested Resources	Suggested Non-Formal Activities
1.0 Conservation of Resources	• Observation of learning activities. • Written tests and assignments • Projects. • Oral assessment • Activity journals	Digital resources Print materials (charts, reference books) Cooking tools and equipment Cleaning equipment and materials Selected gardening tools Selected foodstuffs General environment for space, samples of soils and plants	Learners to conduct school community awareness on conservation of various resources using existing formal interaction forums.
2.0 Food Production Processes	• Written tests and assignments • Graded observation • Projects • Activity journal	Digital devices and print reference materials. General environment for space, soil and samples of plants. Selected Garden tools such as *jembes*, fork *jembes*, spade, *panga*, slasher, tape measure. Variety of planting materials First aid kit Cooking and cleaning equipment and materials Samples of animal products such as eggs and honey, milk and meat. Sample crop produce such as	Learners to prepare and manage a sample kitchen or backyard garden in the school for display. Learners to use existing school forums to display skills and products of the various learning experiences to extend knowledge and create awareness to the school community.

		vegetables. Some small domestic animals such as rabbits, poultry or Guinea pigs.	
3.0 Hygiene Practices	• Written test • Oral assessment on safety when handling animal. • Observation of learning • Oral tests • Project • Activity journals	Cleaning equipment and materials Sample clothing and household articles Detergents, stain removal agents and disinfectants Digital devices and print reference materials General school environment	Learners to use existing school forums to sensitize the school community on hygiene practices.
4.0 Production Techniques	• Written test • Oral tests • Project • Activity journals Observation of learning • Written and oral tests	Sewing tools such as needles, crochet, scissors and tape measure. Sewing materials such as sample fabrics and yarns. Gardening tools such as tape measure and hammer. General school environment Worked samples (crocheted and knitted materials) Sample planting materials Selected foodstuffs.	Learners to use existing school forums to create awareness and enhance adoption of various production techniques.