KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

A Skilled and Ethical Society

JUNIOR SCHOOL CURRICULUM DESIGN

AGRICULTURE

GRADE 9

First published 2024

ISBN: 978-9914-43-979-3

Published and printed by the 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 Constitution of Kenya 2010, the Kenya Vision 2030, the 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, Primary and Junior School levels.

The implementation of Competency Based Curriculum involves monitoring and evaluation to determine its success. After the five-year implementation cycle, a summative evaluation of the primary education cycle was undertaken to establish the achievement of learning outcomes as envisaged in the Basic Education Curriculum Framework. The Government of Kenya constituted a Presidential Working Party on Education Reforms (PWPER) in 2022 to address salient issues affecting the education sector. PWPER made far-reaching recommendations for basic education that necessitated curriculum review. The recommendations of the PWPER, monitoring reports, summative evaluation of the primary education cycle, and feedback from curriculum implementers and other stakeholders led to rationalisation and review of the basic education curriculum.

The reviewed Grade 9 curriculum designs build on competencies attained by learners at the end of Grade 8. Further, they provide opportunities for learners to continue exploring and nurturing their potentials as they prepare to transit to Senior School.

The curriculum designs present National Goals of Education, essence statements, general and specific expected learning outcomes for the 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, 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.

HON. EZEKIEL OMBAKI MACHOGU, CBS
CABINET SECRETARY,
MINISTRY OF EDUCATION

PREFACE

The Ministry of Education (MoE) nationally implemented Competency Based Curriculum (CBC) in 2019. Grade 9 is the final grade in Junior School in the reformed education structure.

The reviewed Grade 9 curriculum furthers implementation of the CBC from Grade 8. 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 school 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 9 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. They also offer several suggested learning resources and a variety of assessment methods. It is expected that the designs will guide teachers to effectively facilitate learners to attain the expected learning outcomes for Grade 9 and prepare them for a smooth transition to Senior School. Furthermore, it is my hope that teachers will use the designs to make learning interesting, exciting, and enjoyable.

DR. BELIO KIPSANG', CBS
PRINCIPAL SECRETARY
STATE DEPARTMENT FOR BASIC EDUCATION
MINISTRY OF EDUCATION

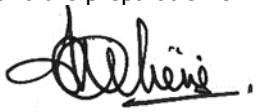
ACKNOWLEDGEMENT

The Kenya Institute of Curriculum Development (KICD) Act Number 4 of 2013 (Revised 2019) mandates the Institute to develop and review 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 documented in the Basic Education Curriculum Framework (BECF) 2017, which responds to the demands of the 21st Century and the aspirations of the Constitution of Kenya 2010, the Kenya Vision 2030, East African Community Protocol, International Bureau of Education Guidelines and the United Nations Sustainable Development Goals (SDGs).

KICD receives its funding from the Government of Kenya to facilitate 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 revised Grade 9 curriculum designs were developed with the support of the World Bank through the Kenya Primary Education Equity in Learning Programme (KPEELP); a project coordinated by MoE. Therefore, the Institute is very grateful for the support of the Government of Kenya, through the MoE and the development partners for policy, resource and logistical support. Specifically, special thanks to the Cabinet Secretary-MoE and the Principal Secretary-State Department of 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 9 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 the designs. Finally, we are very grateful to the KICD Council Chairperson and other members of the Council for very consistent guidance in the process.

We assure all teachers, parents and other stakeholders that this curriculum design will effectively guide the implementation of the CBC in Grade 9 and the preparation of learners for transition to Senior School.



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

TABLE OF CONTENTS

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 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 in adapting 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 needs 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 that 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 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 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

S/No	Learning Area	Number of Lessons per Week (40 Minutes Per Lesson)
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	4
9.	Creative Arts and Sports	5
	Pastoral / Religious Instructional Programme	1*
Total		**40 + 1***

LEARNING OUTCOMES FOR JUNIOR SCHOOL

By the 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, and 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 is a learning area that aligns with the United Nation Sustainable development goals and the socio-economic pillar of Kenya Vision 2030. Through education, it promotes health, hygiene, food security and good nutrition. 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. The curriculum will form firm grounds for specialisation in career pathways in senior school and beyond.

GENERAL LEARNING OUTCOMES

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

1. Participate actively in agricultural and household activities to conserve resources.
2. Use scarce resources through innovative practises 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 practises for healthy living.
5. Apply appropriate production techniques, innovative technologies, and digital and media resources to enhance sustainable agricultural and household practises.
6. Appreciate agricultural and household skills as a worthy niche for a hobby, career development, further education, and training.

SUMMARY OF STRANDS AND SUB-STRANDS

Strands	Sub-Strands	Suggested Number of Lessons
1.0 Conservation of Resources	1.1 Conserving Animal Feed: Hay	12
	1.2 Conserving Leftover Food	11
	1.3 Integrated Farming	12
2.0 Food Production Processes	2.1 Organic Gardening	14
	2.2 Storage of Crop Produce	10
	2.3 Cooking: Using Flour Mixtures	14
3.0 Hygiene Practises	3.1 Cleaning Waste Disposal Facilities	9
	3.2 Disinfecting Clothing and Household Articles	12
4.0 Production Techniques	4.1 Grafting in Plants	13
	4.2 Homemade Sun Dryer	13
	Total Number of Lessons	**120**

Note: The suggested number of lessons per sub-strand may vary depending on the context of learning.

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 haymaking, standing forage, stacking).* • conserve forage through stacking and box-bailing methods using locally available materials such as *grass and maize stover* to make hay for drought season. • discuss and make a class presentation on how households can adopt conservation of forage in coping with drought.	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 Learning Areas: Learners relate the conservation of hay to concepts of mitigating the 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 Food** (11 lessons)	By the end of the sub-strand the learner should be able to: a) explain the importance of conserving leftover food at home b) prepare leftover food to avoid wastage c) embrace the use of leftover food to avoid food wastage.	Learners are guided to: • search and share experiences importance of conserving leftover food at home. • prepare leftover food for consumption through methods such as *reheating or preparing another recipe* to avoid wastage. • make presentations on various recipes adopted from leftover food to avoid food wastage.	How is leftover 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 leftover food.				
Values: Integrity: utilising resources prudently to avoid wastage of resources in the preparation of leftover food.				
Pertinent and Contemporary Issues: Hygiene in handling of foods to prevent contamination and spoilage.				
Links to other Learning Areas: Learners relate the conservation of leftover foods to the spread of food-related diseases and illnesses 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 the conservation of resources, c) appreciate the importance of integrated farming in the conservation of resources.	Learners are guided to: • take an excursion or search for information on integrated farming practises to find out how components of integrated farming help in conserving 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. • make class presentations on the models of integrated farming and the importance of integration in conserving resources.	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 an 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 an integrated farming enterprise.				

Values: • Unity: teamwork 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 a 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, cardboard and papers to design and make a model of integrated farming enterprise.
Links to other Learning Areas: Learners apply skills of designing and choice of materials learnt in Pre-Technical Studies in the construction of an integrated farming model.

Suggested Assessment Rubric

Level / Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Ability to describe various ways of conserving resources in the environment. *(conserving hay, reusing leftover food, using integrated farming).*	The learner describes *three* ways of conserving resources in the environment.	The learner describes *two* ways of conserving resources in the environment.	The learner describes *one* way of conserving resources in the environment.	The learner partially describes *a* way of conserving resources in the environment.
Ability to apply various ways of conserving resources in the environment. *(conserving hay, reusing leftover food, using integrated farming).*	The learner applies *three* ways of conserving resources in the environment.	The learner applies *two* ways of conserving resources in the environment.	The learner applies *one* way of conserving resources in the environment.	The learner partially applies *one* way of conserving resources in the environment.
Ability to exhibit collaboration skills in the conservation of resources in the environment: *(is punctual, reliable, supports others, positively works with others and contributes to group decision making).*	The learner exhibits *five* collaboration skills in carrying out the conservation of resources in the environment.	The learner exhibits *four* collaboration skills in carrying out the conservation of resources in the environment.	The learner exhibits *two to three* collaboration skills in carrying out the conservation of resources in the environment.	The learner exhibits *less than two* collaboration skills in carrying out the conservation of resources in the environment.

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 practises in crop production b) grow a crop using organic gardening practises c) appreciate the importance of organic gardening in the production of healthy foods.	Learners are guided to: • search and share information on organic gardening practises in crop production. • grow a selected short-season crop such as a vegetable, legume, or spice crop using organic gardening practises such as the *use of organic manure, organic pesticides, mechanical weed control, use of organic foliar feed made from animal wastes and plants like Mexican sunflower.* • share experiences through class presentations to appreciate the importance of organic gardening in the production of healthy foods.	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 practises.
- Self-efficacy: planning skills as learners grow crops using organic farming practises.

Values: • Unity: working in teams as learners undertake the project on growing crops using organic gardening practises. • Integrity: honesty as learners practise organic gardening practises.
Pertinent and Contemporary Issues: Food health and safety as learners acquire skills of growing foods without use of agro-chemicals.
Links to other Learning Areas: Learners relate organic gardening practises to farming practises in 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 the 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 practises 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 of spoilt produce).	1. How can we prepare the facility in readiness for the 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 Learning Areas: Learners relate the 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 mixtures 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 *pancakes, mandazi, and chapati* from various flour mixtures. • display and appreciate the products made from various flour mixtures.	How can we make products from flour mixtures?
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 Learning Areas: Learners relate the measurement of ingredients in preparing flour mixtures to weights and measurements learnt in Mathematics.				

Suggested Assessment Rubric

Level / **Indicator**	**Exceeding Expectations**	**Meeting Expectations**	**Approaching Expectations**	**Below Expectations**
Ability to describe food production processes at the household level: *(organic gardening, storage of crop produce and cooking using flour mixtures).*	The learner describes *three* food production processes at the household level.	The learner describes *two* food production processes at the household level.	The learner describes *one* food production process at the household level.	The learner partially describes food production processes at the household level.
Ability to carry out food production processes at the household level: *(organic gardening, storage of crop produce and cooking using flour mixtures).*	The learner carries out *three* food production processes at the household level.	The learner carries out *two* food production processes at the household level.	The learner carries out *one* food production process at the household level.	The learner partially carries out *one* food production process at the household level.
Ability to portray unity while carrying out food production processes. *(sharing of available resources, appreciating efforts of others in tasks, respecting other people's opinions, and embracing team spirit).*	The learner portrays *four* indicators of unity in carrying out food production processes at the household level.	The learner portrays *three* indicators of unity in carrying out food production processes at the household level.	The learner portrays *two* indicators of unity in carrying out food production processes at the household level.	The learner portrays *less than two* indicators of unity in carrying out food production processes at the household level.

STRAND 3.0 HYGIENE PRACTISES

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
3.0 Hygiene Practises	**3.1 Cleaning Waste Disposal Facilities** (9 lessons)	By the end of the sub-strand the learner should be able to: a) explain the importance of cleaning waste disposal facilities b) clean waste disposal facilities at the household level c) adopt the use of clean waste disposal facilities at the household level.	Learners are guided to: • discuss and share experiences on the importance of cleaning waste disposal facilities such as *waste bins, sinks, and open drains.* • clean waste disposal facilities such as *dust bins, sinks, and open drains.* • maintaining clean waste disposal facilities at the household level using improvised resources.	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 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 Learning Areas: 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 Practises	**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 demonstrations on methods of disinfecting clothing and household articles; *use of sunlight, use of salt, boiling, use of disinfectants and ironing.* • disinfect clothing and household articles like aprons, gloves, towels, dust coats, handkerchiefs, and socks among other personal items using methods such as *sunlight, use of salt, boiling, use of disinfectants, and ironing.* • make class presentations on the importance of disinfecting clothing and household articles for hygiene purposes.	How can we disinfect household articles for hygiene purposes?

Core Competencies to be developed Learning to Learn: organising 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 the spread of diseases.
Links to other Learning Areas: • Learners relate the use of disinfectants to solvents learnt in Integrated Science.

SUGGESTED ASSESSMENT RUBRIC

Level / Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Ability to explain hygiene practises at the household level.	The learner can explain cleaning waste disposal activities and disinfecting household articles at the household level with elaborate details.	The learner can explain cleaning waste disposal activities and disinfecting household articles at the household level.	The learner can explain *either* cleaning waste disposal activities *or* disinfecting household articles at the household level.	The learner can explain cleaning waste disposal activities *or* disinfecting household articles at the household level with details that require clarification.
Ability to carry out hygiene practises at the household level.	The learner carries out cleaning waste disposal activities and disinfecting household articles with observable attention to detail.	The learner carries out cleaning waste disposal activities and disinfecting household articles at the household level.	The learner carries out either cleaning waste disposal activities *or* disinfecting household articles at the household level.	The learners carry out cleaning waste disposal activities and disinfecting household articles at the household level both with observable areas for corrections.
Ability to portray responsibility when carrying out hygiene practises. *(engaging in assigned roles, observing safety, proactively solving problems when carrying out hygiene practises and offering leadership).*	The learner portrays *four* indicators of responsibility when carrying out hygiene practises.	The learner portrays *three* indicators of responsibility when carrying out hygiene practises.	The learner portrays *two* indicators of responsibility when carrying out hygiene practises.	The learner portrays *less than two* indicators of responsibility when carrying out hygiene practises.

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 for repair, aesthetic, rejuvenation or improvement purposes. • carry out caring practises such as *watering, protecting the union, removal of the grafting tape after successful union, and removal of other buds on the rootstock*. • make discussions and presentations on reasons for grafting *(repairing a damaged plant, aesthetic, rejuvenation and plant improvement)* to appraise its applications in crop production.	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 the manipulation of a plant through grafting for plant propagation.
Values • Respect: appreciating each other's abilities and skills as learners carry out grafting techniques 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 Learning Areas: Learners relate carrying out grafting to parts of a plant and the 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 a homemade sun dryer in the 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 a homemade sun dryer for drying vegetables using locally available materials. • use the constructed homemade sun dryer to dry vegetables and promote usage of the equipment to the school community for adoption purposes.	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 dryers for vegetables.
- Critical thinking and Problem-solving: skills in assessing or evaluating challenging situations and designing solutions in the construction of homemade sun dryers.

Values

- Responsibility: proactively solving problems by constructing homemade sun dryers 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 dryers to preserve vegetables.

Links to other Learning Areas:

Learners relate the designing and construction of homemade sun dryers to skills learnt in Pre-technical studies on designing, sketching and choice of construction materials.

SUGGESTED ASSESSMENT RUBRIC

Level / Indicator	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Below Expectations
Ability to describe production techniques at the household level. *(grafting, construction of homemade sun dryer).*	The learner can describe grafting in plants and the construction of a homemade sun dryer with elaborate details.	The learner can describe grafting in plants and the construction of a homemade sun dryer.	The learner can describe *either* grafting in plants *or* the construction of a homemade sun dryer.	The learner can partially describe *either* grafting in plants *or* the construction of a homemade sun dryer.
Ability to carry out production techniques at the household level. *(grafting, construction of homemade sun dryer).*	The learner can identify requirements, assemble the requirements, conceptualise the plan of work, carry out the task, and produce functional output.	The learner can identify requirements, assemble the requirements, conceptualise the plan of work, carry out the task, and produce output.	The learner can identify requirements, assemble the requirements, and conceptualise the plan of work.	The learner can identify requirements and assemble the requirements.
Ability to apply critical thinking and problem-solving skills in production techniques at the household level. *(finds applicable information, explores possible options, seeks help when needed, completes task).*	The learner applies *four* skills of critical thinking and problem-solving in production techniques at the household level.	The learner applies *three* skills of critical thinking and problem-solving in production techniques at the household level.	The learner applies *two* skills of critical thinking and problem-solving in production techniques at the household level.	The learner applies *less than two* skills of critical thinking and problem-solving in production techniques at the household level.

APPENDIX 1: GUIDELINES FOR INTEGRATING COMMUNITY SERVICE LEARNING PROJECT

Introduction

In Grade 9, learners will undertake an integrated Community Service Learning (CSL) project of choice, focusing on a single subject or combining multiple 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 follow a Whole School Approach, involving all members of the school community. This includes teachers, school administration, parents/guardians/, the local community and support staff. It will be a collaborative effort where the Social Studies teacher will coordinate and work with other subject teachers to design and implement the integrated CSL project. The teachers will select a theme for the CSL project, drawing from different Learning Areas and broader categories of Pertinent and Contemporary Issues (PCIs). The project should also provide an opportunity for learners to develop core competencies and nurture values. Learners will participate in a **variety of** integrated CSL group projects, working in teams and following a six-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 the learning of the academic concepts.

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

Assessment of Community Service Learning 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. The assessments will focus on three components namely: skills from various learning areas applied in carrying out the projects, core competencies developed and values nurtured.

APPENDIX 2: 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 the 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, and 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 Practises	• Written test • Oral assessment on safety when handling animals. • 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 sensitise the school community on hygiene practises.
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 the adoption of various production techniques.