REPUBLIC OF KENYA

MINISTRY OF EDUCATION

JUNIOR SCHOOL CURRICULUM DESIGN

AGRICULTURE AND NUTRITION
GRADE 9

FOR LEARNERS WITH VISUAL IMPAIRMENT

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

A Skilled and Ethical Society

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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, 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, feedback from curriculum implementers and other stakeholders led to rationalisation and review of the basic education curriculum.

The reviewed Grade nine curriculum designs for learners with visual impairment build on competencies attained by learners at Grade eight. Emphasis at this grade is the development of skills for exploration and making informed decisions on pathways based on careers.

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, suggested key inquiry questions, core competencies, Pertinent and Contemporary Issues (PCIs), values, and suggested 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
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PREFACE

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

The reviewed Grade nine curriculum furthers implementation of the CBC from Grade eight. The curriculum provides opportunities for learners to focus in a field of their choice to form a foundation for further education and training and/or gain employable skills. 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 Realising 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 nine curriculum designs for learners with visual impairment 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 techniques. It is expected that the designs will guide teachers to effectively facilitate learners to attain the expected learning outcomes for Grade nine and prepare them for smooth transition to Grade Senior school. Furthermore, it is my hope that teachers will use the adapted designs to make learning interesting, exciting and enjoyable.

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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 captured in the Basic Education Curriculum Framework (BECF) 2017, that responds to the demands of the 21st Century and the aspirations captured in 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 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 nine curriculum designs for learners with visual impairment were developed and adapted 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,

I also wish to acknowledge the KICD curriculum developers and other staff, all teachers, educators who took part as panellists; the Semi-Autonomous Government Agencies (SAGAs) and representatives of various stakeholders for their roles in the development and adaptation of the Grade nine curriculum designs for learners with visual impairment. In relation to this, I 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 and adapting these designs. Finally, I am very grateful to the KICD Council Chairperson and other members of the Council for very consistent guidance in the process.

I assure all teachers, parents and other stakeholders that this curriculum design will effectively guide the implementation of the CBC at Grade nine and preparation of learners with visual impairment for transition to Senior school.

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

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

Kenya is part of the international community. It is part of the complicated and interdependent network of peoples and nations. Education should therefore lead the youth of the country to accept membership of this international community with all the obligations and responsibilities, rights and benefits that this membership entails.

8. **Promote positive attitudes towards good health and environmental protection.**

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

LESSON ALLOCATION AT JUNIOR SCHOOL

S/No	Learning Area	Number of Lessons per week
1.	English for Learners with Visual Impairment	5
2.	Kiswahili for Learners with Visual Impairment	4
3.	Mathematics for Learners with Visual Impairment	5
4.	Religious Education	4
5.	Integrated Science for Learners with Visual Impairment	5
6.	Agriculture and Nutrition for Learners with Visual Impairment	4
7.	Social Studies for Learners with Visual Impairment	4
8.	Creative Arts and Sports for Learners with Visual Impairment	5
9.	Pre-Technical Studies for Learners with Visual Impairment	4
	Pastoral / Religious Instructional Programme	1
Total		**41**

NOTE: Braille skills for learners with blindness to be implemented as Non formal(Co-Curricular) Programme

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, 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 coexistence.
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 agriculture and home science concepts introduced in the upper primary curriculum. The learner with visual impairment 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 a foundation for specialisation in respective career pathways in senior school and beyond.

Agriculture and Nutrition for learners with visual impairment in Junior School will build on competencies introduced in the Upper Primary curriculum contributing to human capacity development. The learning experiences have been adapted to ensure active participation of learners through practical, project and Community Service Learning (CSL) activities to develop applicable competencies for sustainable agriculture. The curriculum will focus on developing knowledge, skills, attitudes and values for conservation of resources, food production, hygiene and production techniques through innovative and adaptive technologies. The acquired knowledge, skills, attitudes and values will form a broad-spectrum foundation for development of agricultural competencies for senior school and beyond.

This design has been adapted to ensure that learners with blindness and those with low vision learn effectively. The adaptations include suggestions for provision of verbal descriptions on aspects that require use of sight, use of digital devices with assistive technology, models, print with appropriate colour contrast, font size and font types, hands on demonstrations and adapted learning resources.

SUBJECT GENERAL LEARNING OUTCOMES

By the 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 and adaptive practices to contribute towards health, nutrition and food 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 and adaptive 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	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	1. 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 Practices	3.1 Cleaning Waste Disposal Facilities	9
	3.2 Disinfecting Clothings 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 be more or less depending on the context.

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**	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) appreciate the importance of conserving forage in coping with drought.	• Learners with low vision are guided to use digital devices with assistive technology or appropriate print materials to search for information and share experiences on methods of conserving forage in coping with drought (baled hay making, standing forage, silage production, stacking), while learners with blindness are guided to use digital devices with assistive technology or embossed materials to search for information and share experiences on methods of conserving forage in coping with drought (baled hay making, standing forage, silage production, stacking). • Learners with low vision are guided to observe photos of baled bay in different shapes. Learners with blindness are guided to tactually explore provided baled hay for familiarisation with different shapes and styles into which hay can be baled. • Learners with low vision are guided through a demonstration on how to conserve forage to cope with drought.	1. Why is it important to use various methods of conserving forage during drought? 2. How can hay conservation contribute to coping with drought?

			Learners with blindness are given a hands on demonstration and clear verbal descriptions on how to conserve forage to cope with drought by first touching and feeling the correct level of the cutting the forage, how to spread harvested forage in the field, raking for quick drying, collecting and baling into different sizes and shapes. • In groups, learners with low vision are guided *to* conserve forage using methods such as stacking or box bailing using locally available materials such as maize stover and straw to conserve hay for use during drought season. Learners with blindness are given clear verbal instructions and one on one support to conserve forage using methods such as stacking or box bailing using locally available materials such as maize stover and straw to conserve hay for use during drought season.	
Core competencies to be developed: • Critical thinking and problem solving: Learners develop evaluation and decision-making skills while analysing methods of forage conservation and apply the most applicable method in the local context. • Communication and collaboration: Learners develop teamwork as they contribute to group decision making on ways of conserving forage to cope with drought in the context of rearing animals. • Digital literacy: A learner uses digital devices with assistive technology to search for information on methods of conserving forage in coping with drought.				
Values:				

- Respect: A learner respects and accommodates each other's opinion while sharing their experiences on methods of conserving forage in coping with drought
- Responsibility: A learner solves the environmental problem by conserving forage to cope with drought.

Pertinent and contemporary issues:

- Disaster risk reduction: A learner analyses drought-related challenges in animal production and adopts coping mechanisms such as conservation of forage.
- Environmental educational and climate change: A learner solves environmental problems by conserving forage to cope with drought.

Links to other subjects:

Social studies: Learners relate shortage of animal feeds to droughts in the locality as a result of climate change.

Suggested Learning Resources:

- Reference materials in print with appropriate font size and color
- Braille reference materials
- Digital devices with assistive technology such as screen readers, talk back, braille display, screen magnifiers
- Baled hay in different shapes
- Stacked forage
- Locally available forage materials such as dry grass, maize stover and straw
- Nylon strings
- Garden tools and equipment such as pangas, slashers, rakes, wheelbarrows

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
1.0 Conservation of Resources	**1.2 Conserving Leftover Food**	By the end of the sub strand, the learner should be able to: a) explain the importance of conserving left over foods at home, b) prepare leftover foods to avoid wastage, c) embrace the use of leftover foods to avoid food wastage.	• Learners with low vision are guided to use digital devices with assistive technology or appropriate print materials to search for information on importance of conserving leftover foods at home and share their findings, while learners with blindness are guided to use digital devices with assistive technology or braille materials to search for information on importance of conserving leftover foods at home and share their findings. • Learners with low vision are guided through a demonstration or watch an audio-visual clip on how to prepare leftover foods. Learners with blindness are given clear verbal instructions and hands on demonstrations or listen to an audiovisual clip on how to prepare leftover foods. • In pairs or groups, learners with low vision are guided to prepare leftover foods for consumption through methods such as reheating or preparing another recipe to avoid wastage, while learners with blindness are given one on one support to prepare leftover foods for consumption through methods such as	How is left over food prepared for use to prevent food wastage?

			reheating or preparing another recipe to avoid wastage. • In pairs or groups, learners are guided to make presentations on various recipes adopted for leftover foods to avoid food wastage.	

Core competencies to be developed:

- Digital literacy: A learner uses digital devices with assistive technology to search for information on the importance of conserving leftover food at home.
- Communication and collaboration: A learner develops listening and speaking skills as they communicate, interact and support one another while working together in groups to prepare leftover foods for consumption through methods such as reheating or preparing another recipe to avoid wastage.

Values:

- Unity: A learner cooperates and demonstrates teamwork while working together to prepare leftover foods for consumption.
- Integrity: A learner utilizes resources prudently by preparing leftover foods for consumption to avoid food wastage.

Pertinent and contemporary issues:

- Health Promotion Issues: A learner observes healthy habits and hygiene as they handle and prepare leftover foods for consumption.
- Safety and security: A learner observes safety for self and others as they use cookers/stoves to prepare leftover foods at home for consumption.

Links to other subjects:

Integrated science: A learner relates methods of food preparation as they prepare leftover foods for consumption through methods such as reheating or preparing another recipe to avoid wastage.

Suggested Learning Resources:

- Digital devices with assistive technology such as screen readers, talk back, braille display and screen magnifiers
- Reference materials in print with appropriate font size and colour contrast
- Braille reference materials
- Samples of leftover foods (suitable for purpose)
- Cooking tools and equipment (improvise or substitute as much as possible)
- Cookers/stoves (choose which one is suitable)

- Food storage equipment (choose one that is locally available for use)
- Food safe
- Cupboard
- Charcoal cooler
- Refrigerators
- Roasting grills
- Grills
- Steamers
- Skewers
- Roasting dishes
- Serving dishes
- Source of fuel.
- Water, detergents,
- Cleaning cloths/wipers
- Protective kitchen clothing such as apron, coat, headgear/toque, proper shoes

Strand	**Sub-Strand**	**Specific Learning Outcomes**	**Suggested Learning Experiences**	**Suggested Key Inquiry Question(s)**
1.0 Conservation of Resources	**1.3 Integrated farming**	By the end of the sub strand, the learner should be able to: a) describe components of integrated farming in conserving resources,	• Learners with low vision are guided to use digital devices or appropriate print materials while learners with blindness use digital devices with assistive technology or braille materials to search for information on integrated farming practices (Fish rearing, Rabbit keeping, Poultry keeping and Vegetable production) and share the findings in class.	How can integrated farming conserve resources?

		b) make a model of integrated farming for conservation of resources, c) appreciate the importance of integrated farming in conservation of resources.	• Learners with low vision are guided to take an excursion to households practising integrated farming to study components of integrated farming practices and how they relate to each other. Learners with blindness are guided to take an excursion to households practising integrated farming and given clear verbal descriptions to enable them understand components of integrated farming practices and how they relate to each other. • In groups, learners with low vision are guided to 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 with blindness are given one on one support to use different materials and of different textures that are sticked on manilla papers or cardboards to make a model that illustrates components of integrated farming 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.	
Core competencies to be developed: • Creativity and imagination: A learner applies the information obtained and observations made to design and make a model to depict integrated farming enterprise.				

- Communication and Collaboration: A learner develops speaking and listening skills and embraces teamwork as they discuss and make class presentations on models of integrated farming.

Values:

- Unity: A learner cooperates and supports others while working in groups to design and make an integrated farm model.
- Respect: A learner appreciates diverse opinion**s** while conducting group activities in making a model to illustrate integrated farming.

Pertinent and contemporary issues:

- Environmental Educational climate change: A learner re-uses locally available resources such as waste pieces of wood, cartons, cardboards and papers to design and make a model to illustrate an integrated farming.
- Safety and Security: A learner observes safety and security for self and others as they use cutting tools to make a model that illustrates integrated farming.

Links to other subjects:

- Pre-Technical Studies: A learner uses learnt technical skills and tools to sketch and construct a model of an integrated farming.
- Creative arts and sports: A learner demonstrates creativity through designing and sketching a model of an integrated farm.

Suggested Learning Resources:

- Digital devices with assistive technology such as screen readers, talkback, refreshable braille display, screen magnifiers
- Reference materials in print with appropriate font size and colour contrast
- Braille reference materials
- Manilla papers
- Felt pen
- Glue
- Tactile ruler
- Braille labels
- Scissors
- Cartons
- Cardboards
- Soil - loam, clay and sand
- Strings
- Grass clippings

- Pieces of wood
- Hand saw
- Sand papers/scotch brite
- Garden tools and equipment - jembe, panga, measuring tape

Suggested Assessment Rubric

Level / **Indicator**	**Exceeds Expectations**	**Meets Expectations**	**Approaches Expectations**	**Below Expectations**
Ability to describe various ways of conserving resources in the environment. *(Conserving hay, reusing leftover food, using integrated farming).*	Describes three ways of conserving resources in the environment.	Describes two ways of conserving resources in the environment.	Describes one way of conserving resources in the environment.	Describes partially one 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).*	Applies three ways of conserving resources in the environment.	Applies two ways of conserving resources in the environment.	Applies one way of conserving resources in the environment.	Applies partially one way of conserving resources in the environment.
Ability to exhibit collaboration skills in conservation of resources in the environment: *(is punctual, reliable, supports others, positively works with others and contributes to group decision making).*	Exhibits five collaboration skills in carrying out conservation of resources in the environment.	Exhibits four collaboration skills in carrying out conservation of resources in the environment.	Exhibits two to three collaboration skills in carrying out conservation of resources in the environment.	Exhibits two or less collaboration skills in carrying out 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**	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 the importance of organic gardening in production of healthy foods.	• In pairs or groups, learners with low vision use digital devices with assistive technology or appropriate print materials to search for information on organic gardening practices in crop production and share findings in class, while learners with blindness use digital devices with assistive technology or braille materials to search for information on organic gardening practices in crop production and share findings in class. • Learners with low vision watch while learners with blindness listen to an audio visual clip indicating growing a certain crop using organic practices. Provide clear verbal descriptions of the visual elements in the clips to learners with blindness. • In groups, learners with low vision are guided to 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 with blindness are given one on	1. Why should we practise organic gardening? 2. How can we produce food crops through organic gardening?

			one support to grow a selected short season crop such as vegetable, legume or spice crop using the organic gardening practices. Learners with blindness are guided to measure the correct quantity of organic pesticides and manure and also how to apply the pesticide and foliar feed on the target part of the plants and controlling weeds mechanically by uprooting or slashing. • Learners share experiences through class presentations on the importance of organic gardening in production of healthy foods.	

Core competencies to be developed:

- Digital literacy: A learner uses digital devices with assistive technology to search for information on the organic gardening practices in crop production.
- Communication and collaboration**:** A learner develops speaking and listening skills as they share experiences through class presentations on the importance of organic gardening in production of healthy foods.

Values:

- Unity: A learner cooperates with others to grow a selected short season crop using organic gardening practices.
- Responsibility: A learner carries out assigned roles and duties as they work in groups to grow a selected short season crop using organic gardening practices.
- Integrity: A learner applies laid down organic procedures and practices to produce healthy foods free from chemical residues.

Pertinent and contemporary issues:

Health promotion issues: A learner promotes health issues by growing crops using organic gardening practices to produce healthy foods free from chemical residues.

Links to other subjects:

- Integrated Science: A learner relates organic farming practices to healthy food production.
- Pre-technical Studies**:** A learner appreciates organic farming as a fast-growing, profitable and health promoting enterprise in Kenya.

Suggested Learning Resources:

- Digital devices with assistive technology such as screen readers, talkback, refreshable braille display, screen magnifiers

● Reference materials in print with appropriate font size and colour contrast ● Braille reference materials ● Non-food green manure plant such as Mexican sunflower ● Garden tools and equipment - pangas, slasher, wheelbarrow, jembe, fork jembe, garden line ● Bucket ● Manure ● Organic mulching materials such as dry grass, dry banana leaves ● Planting materials - seeds, seedlings or cuttings

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
2.0 Food Production Processes	**2.2 Storage of crop produce**	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 with low vision use digital devices with assistive technology or appropriate print materials to search for information on ways of preparing storage structures in readiness for storage of crop produce while learners with blindness use digital devices with assistive technology or Braille materials to search for information on ways of preparing storage structures in readiness for storage of crop produce and share findings in class. • Learners with low vision watch while learners with blindness listen to an audio visual clip showing and explaining how to prepare a storage structure in readiness for storage of	1. How can we prepare an existing structure in readiness for storage of crop produce? 2. How can you manage crop produce during storage?

			crop produce. Provide clear verbal descriptions of the visual elements in the clips. • In groups, learners with low vision are guided while learners with blindness are given one on one support to 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. • In groups, learners with low vision are guided to manage stored crop produce by checking moisture content in cereals and pulses, ensuring proper ventilation, controlling rodents, turning the stored crop produce and disposing off spoilt produce. Learners with blindness are given clear verbal instructions and one on one support to manage stored crop produce by checking moisture content in cereals and pulses, ensuring proper ventilation, controlling rodents by tactually exploring to identify the position of placing the rat guards, turning the stored crop produce to	

			ensure proper drying and disposing off spoilt produce.	

Core competencies to be developed:

- Critical thinking and problem solving: A learner prepares storage structure and manages stored crop produce to maintain quality and reduce post-harvest loss.
- Communication and collaboration: Learners develop listening and speaking skills as they communicate, interact and support one another while working together in groups to prepare an existing storage structure in readiness for storing crop produce.
- Digital literacy**:** A learner uses digital devices with assistive technology to search for information on ways of preparing storage structures in readiness for storage of crop produce

Values:

- Responsibility: A learner cares and manages crop produce stored in the school store to maintain quality and reduce post-harvest loss.
- Unity**:** A learner displays team spirit and collaborates with others as they prepare an existing storage structure and manage stored crop produce.

Pertinent and contemporary issues:

Health Promotion Issues: A learner prevents spread of certain diseases by properly managing stored crop produce.

Links to other subjects:

Integrated Science: A learner relates healthy foods to human health as they properly manage stored crop produce.

Suggested Learning Resources:

- Digital devices with assistive technology such as screen readers, talkback, braille display, screen magnifiers
- Reference materials in print with appropriate font size and colour contrast
- Braille reference materials
- Crop produce - maize grains, beans or any other locally available cereals or pulses
- Cleaning equipment
- Rat metal guards
- Crop storage structures such as containers, airtight bags, drums, sacks, pots, modern store rooms, granaries
- Appropriate pesticides -Powder insecticides

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**	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 with low vision use digital devices with assistive technology or appropriate print materials while learners with blindness use digital devices with assistive technology or Braille materials to search for information on different types of flour mixtures used in food production such as batters and dough. • In groups, learners with low vision are guided to prepare and check consistency of different flour mixtures such as batters and doughs for food production. Learners with blindness are given one on one support and clear verbal instructions to prepare flour mixtures such as batters and doughs. Guide learners with blindness to touch and feel the consistency (thinness or thickness) of the flour mixtures for preparing different products. • Individually learners with low vision make products such as pan cakes, mandazis and chapatis from various flour mixtures while observing safety for self and others. Learners with blindness are given one on one support and clear verbal instructions to make products such as pan cake, mandazi and chapati from various flour mixtures while observing safety for self and others. Guide learners with	How can we make products from flour mixture?

			blindness on how to hold the rolling pin while spreading the dough for making mandazis and chapati. They should tactually explore to feel the different sizes and shapes into which dough for making mandazis is cut and then are guided on how to gently lower the cut pieces into a pan containing hot oil for deep frying while observing safety for self and others.	

Core competencies to be developed:

- Digital Literacy: A learner uses digital devices with assistive technology to search for information on different types of flour mixtures used in food production such as batters and dough.
- Learning to learn: A learner applies procedures of making flour mixtures for preparing different products.

Values:

- Integrity: A learner uses ethically acceptable ingredients to prepare flour mixtures for making different products.
- Unity: A learner cooperates and embraces team work as they make products such as cake, mandazi and chapati.

Pertinent and contemporary issues:

- Safety and security: A learner observes safety for self and others when using fire and hot oil to prepare products such as pan cakes, mandazi and chapati from various flour mixtures when using sharp kitchen tools and equipment.
- Disaster Risk Reduction: A learner observes safety to prevent fire disaster in the kitchen when preparing different products from flour mixtures.

Links to other subjects:

- Mathematics: A learner applies mathematics as they make the flour mixtures through weighing the ingredients and making the right proportion.
- Pre-technical Studies**:** A learner relates the concept of safety to safety and security for self and others as they use fire to prepare different products from flour mixtures.

Suggested Learning Resources:

- Digital devices with assistive technology such as screen readers, talkback, braille display, screen magnifiers
- Reference materials in print with appropriate font size and colour contrast
- Braille reference materials
- Flour mixture such as batters and doughs

- Eggs
- Wheat flour
- Raising agents - baking powder/yeast
- Milk
- Salt
- Sugar
- Kitchen equipments - whisk, mixing bowls, wooden spoon, oven, frying pan, slotted/draining spoon, rolling pins, rolling surface, appropriate containers for storing the cooked products
- Fuel
- Cooking oil/butter

Suggested Assessment rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to describe food production processes at household level: *(organic gardening, storage of crop produce and cooking using flour mixtures).*	Describes four food production processes at household level.	Describes three food production processes at household level.	Describes two food production processes at household level.	Describes one or no food production process at household level.
Ability to carry out food production processes at household level: *(organic gardening, storage of crop produce and cooking using flour mixtures).*	Carries out four food production processes at household level.	Carries out three food production processes at household level.	Carries out two food production process at household level.	Carries out one or no food production process at household level.
Ability to portray unity while carrying out food production processes. *(sharing of available resources, appreciating efforts of others in task, respects other peoples' opinions and embracing team spirit).*	Portrays four indicators of unity in carrying out food production processes at household level.	Portrays three indicators of unity in carrying out food production processes at household level.	Portrays two indicators of unity in carrying out food production processes at household level.	Portrays one or no indicators of unity in carrying out food production processes at household level.

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**	By the end of the sub strand, the learner should be able to: a) explain importance of cleaning waste disposal facilities at household level, b) clean waste disposal facilities at household level, c) appreciate use of clean waste disposal facilities at household level.	• Learners discuss and share experiences on the importance of cleaning waste facilities equipment such as waste bin, sink and open drains. • Learners with low vision use digital devices with assistive technology or appropriate print materials while learners with blindness use digital devices with assistive technology or braille materials to search for information on how to clean waste disposal facilities at household level. • In groups, learners with low vision are guided to clean waste disposal facilities such as dustbin, sink and open drains. Learners with blindness are given one on one support and clear verbal instructions on the procedure of cleaning each facility - dustbins, sinks and open drains.	1. How does cleaning of waste disposal facilities promote hygiene? 2. Why is it important to follow specific cleaning protocols when maintaining waste disposal facilities?
Core competencies to be developed: • Digital Literacy: A learner uses digital devices with assistive technology to search for information on how to clean waste disposal facilities at household level. • Critical thinking and problem solving: A learner designs and searches for information on how to clean waste disposal facilities at household level. • Communication and collaboration: A learner develops speaking and listening skills as they discuss and share experiences on the importance of cleaning waste facilities equipment.				
Values: • Responsibility: A learner takes initiative to maintain cleanliness and promotion of environmental hygiene by cleaning waste disposal facilities at household level. • Unity: A learner embraces team spirit and cooperates with others as they work together in groups to clean waste disposal facilities.				
Pertinent and contemporary issues:				

- Health promotion issues: A learner prevents spread of certain diseases by cleaning waste disposal facilities that could be hiding and breeding places of disease vectors.
- Environmental Education and Climate Change: A learner takes initiative to maintain cleanliness of the environment through cleaning waste facilities such as dustbins, sink and open drainage.

Links to other subjects:

- English and Kiswahili: Learners express their opinions in both languages, reinforcing communication skills as they share their experiences on the importance of cleaning waste facilities.
- Integrated Science: A learner relates the concept of health and hygiene to cleaning waste disposal facilities at household level.

Suggested learning resources:

- Digital devices with assistive technology such as screen readers, talkback, braille display, screen magnifiers
- Reference materials in print with appropriate font size and colour contrast
- Braille reference materials
- Dustbin, sink and open drains.
- Water
- Cleaning equipment – hand brushes, hand brooms, steel wool, scrubbing brushes,
- Detergents and disinfectants such as stain removers

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**	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 for hygiene purposes.	• Learners with low vision use digital devices with assistive technology or appropriate print materials while learners with blindness use digital devices with assistive technology or braille materials to search for information on methods of disinfecting clothing and household articles. • Learners with low vision are guided to observe illustrations or demonstrations on methods of disinfecting clothing and household articles such as use of sunlight, salting, boiling, use of antiseptics, and ironing while observing safety for others and self. Learners with blindness are given hands on demonstration on how to disinfect clothing and household articles through methods such as use of sunlight, salting, boiling, use of antiseptics, and ironing while observing safety for others and self. Guide learners with blindness on how to spread clothing and household articles in the sun, allow them to touch and feel the quantity of salt used for disinfecting, use of appropriate containers such as plastic bottle caps when measuring the correct quantity of antiseptic, correct way of hold an iron box when ironing and also the position to keep a hot iron box.	How can we disinfect household articles for hygiene purposes?

			• In groups, learners with low vision are guided to disinfect clothing and household articles like aprons, gloves, towels, dust coats, handkerchief, socks among other personal items using methods such as use of sunlight, salting, boiling, use of antiseptics and ironing. Learners with blindness are given one on one support to disinfect clothing and household articles like aprons, gloves, towels, dust coat, handkerchief, socks among other personal items using methods such as sunlight, salting, boiling, use of antiseptics and ironing. • Learners make class presentations on the importance of disinfecting clothing and household articles for hygiene purposes.	

Core competencies to be developed:

- Communication and collaboration: A learner develops speaking and listening skills as they make class presentations on the importance of disinfecting clothing and household articles for hygiene purposes. Learners display teamwork as they work in groups to disinfect household articles.
- Digital literacy: A learner uses digital devices with assistive technology to search for information on methods of disinfecting clothing and household articles.

Values:

- Responsibility: A learner enhances personal hygiene as they disinfect their personal articles to prevent spread of communicable and non-communicable diseases.
- Unity: A learner cooperates, shares and supports other group members while working in groups to disinfect clothing and household articles for hygiene purposes.

Pertinent and contemporary issues:

- Health promotion Issues: A learners disinfects articles like apron, gloves, towels, handkerchief and other personal items to prevent communicable diseases

- Safety and security**:** A learner observes safety while using disinfectant to treat their personal articles.

Links to other subjects:

- Integrated Science: A learner observes hygiene through disinfecting clothing and household articles.
- Pre-technical Studies: A learner relates the concept of safety and security for self and others as they use disinfectant to treat their personal articles.

Suggested learning resources:

- Digital devices with assistive technology such as screen readers, talkback, braille display, screen magnifiers
- Reference materials in print with appropriate font size and colour contrast
- Braille reference materials
- Salt
- Detergents and disinfectants
- Electric or charcoal ironing box
- Charcoal
- Personal articles such as handkerchief, apron, socks, dust coats, gloves and towels
- Canvas mats or tarpaulins
- Hot water
- Source of fire

Suggested Assessment rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to carry out methods of disinfecting clothing and household articles	Carries out five methods of disinfecting clothing and household articles	Carries out four methods of disinfecting clothing and household articles	Carries out three methods of disinfecting clothing and household articles	Carries out two or less methods of disinfecting clothing and household articles
Ability to carry out cleaning waste disposal procedures (*waste bin, sink and open drains)*	Carries out five cleaning waste disposal procedures	Carries out four cleaning waste disposal procedures	Carries out three cleaning waste disposal procedures	Carries out two or less cleaning waste disposal procedures
Ability to portray responsibility when carrying out hygiene practices. *(engaging in assigned roles, observing safety, proactively solves problems when carrying out hygiene practices and offers leadership).*	Portrays four indicators of responsibility when carrying out hygiene practices.	Portrays three indicators of responsibility when carrying out hygiene practices.	Portrays two indicators of responsibility when carrying out hygiene practices.	Portrays one or no indicator of responsibility 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**	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) appreciate grafting for aesthetics, repair, improvement and rejuvenation purposes.	● Learners with low vision use digital devices with assistive technology or appropriate print materials while learners with blindness use digital devices with assistive technology or braille materials to search for information on grafting as a method of plant propagation and share their findings in class. ● Learners with low vision observe illustrations or demonstrations on the procedure of grafting plants. Learners with blindness are given hands demonstration and clear verbal descriptions as they are guided on the correct way of holding the grafting knife, touch to feel the cut surfaces on the rootstock and scion of the plant parts to be grafted and also explore to feel the grafting tape binding the rootstock and scion to enable understand the procedure of grafting plants for a successful union of rootstock and scion. ● In groups, learners with low vision are guided by a resource person to carry out grafting in plants for repair, aesthetic,	Why is grafting done on a plant?

			rejuvenation or improvement purposes. Learners with blindness are given and one on one support and guided by a resource person to carry out grafting in plants for repair, aesthetic, rejuvenation or improvement purposes. ● In groups, learners with low vision are guided to carry out caring practices such as watering, protecting the union, removal of the graft tape after successful union and removal of other buds on the root stock. Learners with blindness are given clear verbal instructions and one on one support to carry out caring practices such as watering, protecting the union, removal of the graft tape after successful union and removal of other buds on the root stock. ● In groups, learners discuss reasons for grafting in plant propagation (repairing a damaged plant, aesthetic, rejuvenation and plant improvement).	
Core competencies to be developed: ● Digital literacy: A learner uses digital devices with assistive technology to search for information on grafting as a method of plant propagation. ● Learning to learn: A learner develops skills on reflection of their own work as they evaluate success on the grafted plant for rejuvenation, aesthetics, repair or improvement of existing plant. ● Self-efficacy: A learner displays understanding of the procedure of grafting fruits and seeks help when necessary.				
Values: ● Responsibility: A learner takes care and appropriately handles sharp grafting tools and equipment to avoid injuries. ● Respect: A learner appreciates each other's abilities and skills as they carry out grafting techniques with varied degrees of success.				

Pertinent and contemporary issues: Safety and security: A learner observes safety of self and others while using sharp grafting tools and equipment.
Links to other subjects: ● Integrated Science: A learner applies the concept of relationships between plant species while selecting compatible scion and rootstock. ● Pre-technical Studies: A learner appraises the role of grafting in crop enterprises and as they safely use sharp grafting tools and equipment.
Suggested Learning Resource: ● Digital devices with assistive technology such as screen readers, talkback, refreshable braille display, screen magnifiers ● Reference materials in print with appropriate font size and colour contrast ● Braille reference materials ● Suitable seedlings for grafting - compatible rootstocks and scions ● Grafting tools and equipment - grafting knife, grafting tape/polythene sheets ● Resource person

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question(s)
4.0 Production Techniques	**4.2 Home-made sun dryer**	By the end of the sub strand, the learner should be able to: a) describe how to make a home-made dryer for vegetables, b) construct a home-made sun drier to preserve vegetables, c) appreciate the use of homemade dryer in preservation of vegetables.	● Learners with low vision use digital devices with assistive technology or appropriate print material while learners with blindness use digital devices with assistive technology or Braille materials to search for information on how to make a home-made dryer for vegetables. ● Learners with low vision observe photographs of home sun dryers in order to familiarise with shapes, sizes and materials used. Learners with blindness tactually explore a provided home-made sun drier to familiarise with the size, shape and materials used to construct it. ● In groups, learners with low vision are guided to sketch and construct home-made dryers for drying vegetables using locally available materials. Learners with blindness are guided to make a model of a home-made sun dryer then given clear verbal instructions and one on one support to construct a homemade dryer for drying vegetables using locally available materials. ● Learners with low use the constructed home-made dryer to dry vegetables. Learners with blindness are given one on one support to use the constructed home-made dryer to dry vegetables by touching to feel how vegetables are arranged in the	How can innovative technology be used to preserve vegetables?

			dryer and also feel the quantity of the vegetables the dryer can accommodate.	

Core competencies to be developed:

- Digital literacy: A learner uses digital devices with assistive technology to search for information on how to make a home-made dryer for vegetables.
- Self-efficacy: A learner develops leadership and planning skills as they design, construct and use home-made devices to preserve milk and vegetables.
- Critical thinking and problem solving**:** A learner develops open mindedness and creativity as they assess or evaluate challenges in preservation of perishable agricultural produce and design solutions by construction of home-made dryers.

Values:

- Unity: A learner cooperates and supports other group members as they pool ideas and skills to design and construct home-made cooler and sun dryer.
- Responsibility: A learner solves the problem of preservation of perishable agricultural produce in the community by constructing home-made dryers.

Pertinent and contemporary issues:

Safety and security: A learner observes safety for self and others as they use cutting tools and equipment like the handsaws.

Links to other subjects:

- Integrated Science: A learner adopts food hygiene and principles of food preservation when designing a home-made sun dryer for vegetables.
- Pre-technical Studies: A learner relates the concept of safety as they observe safety for self and others when using cutting tools and equipment.

Suggested Learning Resources:

- Digital devices with assistive technology such as screen readers, talkback, refreshable braille display, screen magnifiers
- Reference materials in print with appropriate font size and colour contrast
- Braille reference materials
- Sample home-made dryer
- Models of home-made dryers
- Framing materials such as pieces of wood and plastic pipes
- Clear polythene sheet
- Screws
- Nails

- Hinges
- Claw hammer
- Hand saws
- Plywood
- Charcoal
- Black fabric or plastic
- Foil
- Lidded box
- Scissors

Suggested Assessment rubric

Level / **Indicator**	**Exceeds Expectations**	**Meets Expectations**	**Approaches Expectations**	**Below Expectations**
Ability to carry out methods of grafting for various purposes,	Carries out four methods of grafting for various purposes	Carries out three methods of grafting for various purposes.	Carries out two methods of grafting for various purposes.	Carries out one or no method of grafting for various purposes.
Ability to construct a home-made sun drier to preserve vegetables,	Constructs a home-made sun drier to preserve vegetables using five steps.	Constructs a home-made sun drier to preserve vegetables using three steps.	Constructs a home-made sun drier to preserve vegetables using two steps.	Constructs a home-made sun drier to preserve vegetables using one step.
Ability to apply critical thinking and problem solving skills in production techniques at household level. *(finds applicable information, explore possible options, seeks help when needed, completes task).*	Applies four skills of critical thinking and problem solving in production techniques at household level.	Applies three skills of critical thinking and problem solving in production techniques at household level.	Applies two skills of critical thinking and problem solving in production techniques at household level.	Applies one or no skills of critical thinking and problem solving in production techniques at household level.

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

Strand	Sub strand	Suggested Learning Resources	Suggested Assessment Methods	Suggested Non-formal Activities to Support Learning
1.0 CONSERVATION OF RESOURCES	**1.1 Conserving Animal Feed - Hay**	• Reference materials in print with appropriate font size and colour contrast • Braille reference materials • Digital devices with assistive technology such as screen magnifiers, refreshable braille displays, screen readers, text-to-speech systems, optical character recognition • Baled hay in different shapes • Stacked forage • Locally available forage materials such as dry grass, maize stover and straw • Nylon strings • Garden tools and equipment such as pangas, slashers, rakes, wheelbarrows	a) Written assignments in print and in Braille b) Oral questioning c) Observation d) Self and peer assessment e) Project	• Creating a mock-up farm. • Participating in local agricultural events. • Joining nature clubs. • Volunteering at animal shelters. • Engaging in hands-on gardening projects to grow feed crops.

	1.2 Conserving Leftover Foods	• Digital devices with assistive technology such as screen readers, talk back, braille display and screen magnifiers • Reference materials in print with appropriate font size and color • Braille reference materials • Samples of leftover foods (suitable for purpose) • Cooking tools and equipment (improvise or substitute as much as possible) • Cookers/stoves (choose which one is suitable) • Food storage equipment (choose one that is locally available for use) • Food safe • Cupboard • Charcoal cooler • Refrigerators • Roasting grills • Grills	a) Written assignments in print and in Braille b) Oral questioning c) Observation d) Self and peer assessment	• Organise community awareness initiatives on food wastage reduction. • Volunteering at local food banks or shelters. • Start a school composting project. • Create informative posters or presentations on sustainable food practices. • Collaborating with local businesses to promote responsible food consumption.

		• Steamers • Skewers • Roasting dishes • Serving dishes • Source of fuel. • Water, detergents, • Cleaning cloths/wipers • Protective kitchen clothing such as apron, coat, headgear/toque, proper shoes		
	1.3 Integrated Farming	• Digital devices with assistive technology such as screen readers, talkback, refreshable braille display, screen magnifiers • Reference materials in print with appropriate font size and colour contrast • Braille reference materials • Manilla papers • Felt pen • Glue • Tactile ruler	a) Written assignments in print and in Braille b) Oral questioning c) Observation d) Self and Peer assessment e) Project	• Visiting local farms that practise integrated farming. • Participating in workshops or webinars on sustainable agriculture. • Starting a small scale integrated farming project at school. • Engaging in community gardening initiatives. • Connecting with local farmers or experts for mentorship.

		• Braille labels • Scissors • Cartons • Cardboards • Soil - loam, clay and sand • Strings • Grass clippings • Pieces of wood • Hand saw • Sand papers/scotch brite • Garden tools and equipment - jembe, panga, measuring tape		
2.0 FOOD PRODUCTION PROCESSES	**2.1 Organic Gardening Techniques**	• Digital devices with assistive technology such as screen readers, talkback, refreshable braille display, screen magnifiers • Reference materials in print with appropriate font size and colour contrast • Braille reference materials • Non-food green manure plant such as Mexican sunflower	a) Written assignments in print and in Braille b) Oral questioning c) Observation d) Self and Peer assessment e) Project	a) Community gardening projects: Collaborate with local community centres, parks, or environmental organisations that may have community garden spaces. b) Workshops and webinars: Online platforms can facilitate virtual sessions, making it accessible for students to learn from experts worldwide. c) Visits to Organic Farms:Plan field trips to local organic farms.

		• Garden tools and equipment - pangas, slasher, wheelbarrow, jembe, fork jembe, garden line • Bucket • Manure • Organic mulching materials such as dry grass, dry banana leaves • Planting materials - seeds, seedlings or cuttings		Coordinate with farmers to provide guided tours and explanations of their organic methods. d) School Garden Projects: This could involve planting vegetables, herbs, or flowers using sustainable and environmentally friendly methods where students can apply organic gardening techniques. Assign specific responsibilities to students, fostering teamwork and a sense of ownership. e) Reading and Research: f) Composting Initiative g) Documentary and Film Nights h) Do it Yourself workshops: Conduct do-it-yourself (DIY) workshops where students can create their organic gardening tools, compost bins, or planting containers using recycled materials. i) Blog or Journal Writing: Assign students to maintain a gardening journal or blog where they document their experiences, observations, and reflections on the organic gardening techniques they are

				learning.
	2.2 Storage of Crop Produce	• Digital devices with assistive technology such as screen readers, talkback, braille display, screen magnifiers • Reference materials in print with appropriate font size and colour contrast • Braille reference materials • Crop produce - maize grains, beans or any other locally available cereals or pulses • Cleaning equipment • Rat metal guards • Crop storage structures such as containers, airtight bags, drums, sacks, pots, modern store rooms, granaries • Appropriate pesticides - Powder insecticides	• Written assignments in print and in Braille • Oral questioning • Observation • Self and peer assessment	a) Farm Visits: Organise field trips to local farms or storage facilities where students can witness firsthand the different methods used for storing crops. Provide opportunities for students to interact with farmers and storage experts to learn about best practices. b) Hands-On Harvesting and Storage Workshops: Conduct workshops on harvesting techniques and proper storage methods for various crops. This can include demonstrations on when to harvest, how to clean, and the appropriate storage conditions. Allow students to participate in the harvesting and storage process themselves

				c) Farmers' Markets Participation: Encourage students to visit local farmers' markets and speak with vendors about their storage practices. Vendors often have practical knowledge about maintaining the quality of produce until it reaches the consumer. d) Video Documentaries: Have students create short video documentaries showcasing effective crop storage practices. This can involve interviewing local farmers, experts, and community members.
	2.3 Cooking - Using Flour Mixtures	• Digital devices with assistive technology such as screen readers, talkback, braille display, screen magnifiers • Reference materials in print with appropriate font size and colour contrast	a) Written assignments in print and in Braille b) Oral questioning c) Observation d) Self and peer assessment	a) Farm-to-Table Experience: Integrate a farm-to-table component by visiting local farmers' markets to source fresh, local ingredients for their flour-based dishes. b) International Cooking Day: Dedicate a day to exploring international cuisines that

		• Braille reference materials • Flour mixture such as batters and doughs • Eggs • Wheat flour • Raising agents - baking powder/yeast • Milk • Salt • Sugar • Kitchen equipments - whisk, mixing bowls, wooden spoon, oven, frying pan, slotted/draining spoon, rolling pins, rolling surface, appropriate containers for storing the cooked products • Fuel • Cooking oil/butter		heavily use flour mixtures. Assign different countries to small groups of students and have them research and prepare a traditional dish. c) Culinary Challenges: Host cooking challenges or competitions focused on flour-based dishes. Students can work in teams to create innovative recipes, and judges can evaluate the taste, presentation, and creativity of their dishes.
3. 0 **HYGIENE PRACTICES**	**3.1 Cleaning Waste Disposal Facilities**	• Digital devices with assistive technology such as screen readers, talkback, braille display, screen magnifiers	a) Written assignments in print and in Braille b) Oral questioning c) Observation	**Community Clean-Up Events:** Organise community clean-up events where students actively participate in collecting and disposing of litter in public

		• Reference materials in print with appropriate font size and colour contrast • Braille reference materials • Dustbin, sink and open drains. • Water • Cleaning equipment – hand brushes, hand brooms, steel wool, scrubbing brushes, • Detergents and disinfectants such as stain removers	d) Self and Peer assessment	spaces. Provide gloves, trash bags, and any necessary safety equipment. Reflect on the impact of litter on the environment during and after the clean-up.
	3.2 Disinfecting Household Articles	• Digital devices with assistive technology such as screen readers, talkback, braille display, screen magnifiers • Reference materials in print with appropriate font size and colour contrast • Braille reference materials • Salt • Detergents and disinfectants • Electric or charcoal ironing box	a) Written assignments in print and in Braille b) Oral questioning c) Observation d) Self and Peer assessment	Home Disinfection Projects: Assign projects where students conduct a comprehensive disinfection of their own homes. They can create detailed plans, document the process, and reflect on their experiences.

		• Charcoal • Personal articles such as handkerchief, apron, socks, dust coats, gloves and towels • Canvas mats or tarpaulins • Hot water • Source of fire		
4.0 PRODUCTION TECHNIQUES	**4.1Grafting in Plants**	• Digital devices with assistive technology such as screen readers, talkback, refreshable braille display, screen magnifiers • Reference materials in print with appropriate font size and colour contrast • Braille reference materials • Suitable seedlings for grafting - compatible rootstocks and scions • Grafting tools and equipment - grafting knife, grafting tape/polythene sheets • Resource person	a) Written assignments in print and in Braille b) Oral questioning c) Observation d) Self and Peer assessment e) Project	Orchard Visits: Organise field trips to orchards or nurseries where students can observe and learn from experienced horticulturists engaged in grafting. This provides real-world exposure to different grafting methods and plant varieties. Include a guided tour and Q&A session with the professionals.

	4.2 Home-made Sun Drier and Cooler	• Digital devices with assistive technology such as screen readers, talkback, refreshable braille display, screen magnifiers • Reference materials in print with appropriate font size and colour contrast • Braille reference materials • Sample home-made dryer • Models of home-made dryers • Framing materials such as pieces of wood and plastic pipes • Clear polythene sheet • Screws • Nails • Hinges • Claw hammer • Hand saws • Plywood • Charcoal • Black fabric or plastic • Foil	a) Written assignments in print and in Braille b) Oral questioning c) Observation d) Self and Peer assessment e) Project	Documentary Screening: Screen documentaries or videos showcasing the use of solar energy for cooking and cooling. This can provide inspiration and context for the students. Follow up with discussions on the potential environmental and economic benefits.

		• Lidded box • Scissors		