Grade 9 Agriculture and Nutrition

Term 2 - 47 complete lesson plans

Ready to teach, in the KICD lesson-plan format | 40-minute lessons | PDF and editable Word

ABOUT THIS PACK

47 complete, ready-to-teach Grade 9 Agriculture and Nutrition lesson plans for Term 2, covering organic gardening, storage of crop produce, cooking: using flour mixtures and cleaning waste disposal facilities.

TOPICS IN THIS PACK

Topic	Name	Lessons
2.1	Organic Gardening	14
2.2	Storage of Crop Produce	10
2.3	Cooking: Using Flour Mixtures	14
3.1	Cleaning Waste Disposal Facilities	9

INSIDE EVERY LESSON PLAN

- The specific learning outcomes, key inquiry question, core competencies, values and PCIs, and the resources needed.
- A timed lesson flow: what the teacher does and what the learners do, from introduction to summary.
- The key content (a worked example, notes or a practical with its expected results), then four practice questions with the answers for the teacher.
- The common mistake to watch for, and ideas for learners who need support and for those ready for more.
- A four-level CBC assessment rubric (EE, ME, AE, BE), homework, and a blank reflection space to fill in after teaching.

A TASTE OF LESSON 1

What organic gardening is

By the end of the lesson, the learner should be able to: a) define organic gardening; b) compare it with conventional farming

> **Growing without synthetic chemicals**
> Organic gardening grows crops without synthetic fertilisers, pesticides or herbicides, using natural materials and practices to keep soil healthy.
> Practices: compost and manure, organic pesticides (neem, chilli, ash), mechanical weed control (hand weeding, mulching), organic foliar feed (Mexican sunflower or manure tea), crop rotation, intercropping.

You also receive this pack as an editable Word file, so you can change any lesson to suit your class before you print it. Lessons follow the order of the KICD curriculum design.

CONTENTS

No.	Lesson	Topic	Page
1	What organic gardening is	2.1 Organic Gardening	4
2	Organic soil fertility: compost and manure	2.1 Organic Gardening	7
3	Organic pest and weed control	2.1 Organic Gardening	10
4	Organic foliar feeds	2.1 Organic Gardening	13
5	Planning the organic crop project	2.1 Organic Gardening	16
6	Practical: preparing the bed with organic matter	2.1 Organic Gardening	19
7	Practical: planting	2.1 Organic Gardening	22
8	Practical: watering and weeding	2.1 Organic Gardening	25
9	Practical: applying organic foliar feed	2.1 Organic Gardening	28
10	Practical: making and applying an organic pesticide	2.1 Organic Gardening	31
11	Monitoring crop growth	2.1 Organic Gardening	34
12	Practical: harvesting	2.1 Organic Gardening	37
13	Evaluating the organic project	2.1 Organic Gardening	40
14	The importance of organic gardening	2.1 Organic Gardening	43
15	Storage structures and post-harvest loss	2.2 Storage of Crop Produce	46
16	Ways of preparing a storage structure	2.2 Storage of Crop Produce	49
17	Practical: cleaning the store	2.2 Storage of Crop Produce	52
18	Practical: sealing cracks and repairing the store	2.2 Storage of Crop Produce	55
19	Drying produce and checking moisture content	2.2 Storage of Crop Produce	58
20	Aflatoxin and food safety	2.2 Storage of Crop Produce	61
21	Managing stored produce	2.2 Storage of Crop Produce	64
22	Practical: storing and inspecting produce	2.2 Storage of Crop Produce	67
23	Responsibility in managing the school store	2.2 Storage of Crop Produce	70
24	Review: storage and food security	2.2 Storage of Crop Produce	73
25	Types of flour and flour mixtures	2.3 Cooking: Using Flour Mixtures	76
26	Types of batters	2.3 Cooking: Using Flour Mixtures	79
27	Types of doughs and raising agents	2.3 Cooking: Using Flour Mixtures	82
28	Measuring ingredients accurately	2.3 Cooking: Using Flour Mixtures	85
29	Safety and hygiene in flour cookery	2.3 Cooking: Using Flour Mixtures	88
30	Practical: preparing a pouring batter	2.3 Cooking: Using Flour Mixtures	91
31	Practical: making pancakes	2.3 Cooking: Using Flour Mixtures	94
32	Practical: preparing chapati dough	2.3 Cooking: Using Flour Mixtures	97

33	Practical: rolling and cooking chapati	2.3 Cooking: Using Flour Mixtures	100
34	Practical: preparing mandazi dough	2.3 Cooking: Using Flour Mixtures	103
35	Practical: frying mandazi (teacher-led)	2.3 Cooking: Using Flour Mixtures	106
36	Comparing flour products	2.3 Cooking: Using Flour Mixtures	109
37	Nutrition and cost of flour products	2.3 Cooking: Using Flour Mixtures	112
38	Appreciating flour products	2.3 Cooking: Using Flour Mixtures	115
39	Waste disposal facilities at home	3.1 Cleaning Waste Disposal Facilities	118
40	Importance of cleaning waste disposal facilities	3.1 Cleaning Waste Disposal Facilities	121
41	Safety when cleaning waste facilities	3.1 Cleaning Waste Disposal Facilities	124
42	Practical: cleaning a dust bin	3.1 Cleaning Waste Disposal Facilities	127
43	Practical: cleaning a sink	3.1 Cleaning Waste Disposal Facilities	130
44	Practical: cleaning an open drain	3.1 Cleaning Waste Disposal Facilities	133
45	Assessing cleaning success	3.1 Cleaning Waste Disposal Facilities	136
46	Cleaning schedules at home	3.1 Cleaning Waste Disposal Facilities	139
47	Adopting clean waste facilities	3.1 Cleaning Waste Disposal Facilities	142

What organic gardening is

Strand 2.0 Food Production Processes > Sub-strand 2.1 Organic Gardening | Lesson 1 of 14 | 40 minutes

SCHOOL	TEACHER	DATE
CLASS / STREAM	TIME	ROLL (B / G)

SPECIFIC LEARNING OUTCOME(S)

By the end of the lesson, the learner should be able to: a) define organic gardening; b) compare it with conventional farming

KEY INQUIRY QUESTION(S)

- Why should we practise organic gardening?
- How can we produce food crops through organic gardening?

CORE COMPETENCIES, VALUES AND PCIS IN THIS LESSON

COMPETENCY	**Learning to learn**	Learners say what they found easy or hard and decide their next step.
COMPETENCY	**Self-efficacy**	Learners attempt each task with confidence and see that effort improves results.
VALUE	**Unity**	Learners share materials fairly and work as one team.
VALUE	**Integrity**	Learners record their own honest results and mark work truthfully.
PCI	**Food health and safety**	Examples link to healthy habits at home and at school.

LEARNING RESOURCES

Pictures of organic gardens | Digital or print resources | Learners' exercise books

ORGANISATION OF LEARNING

Groups of 4 to 6 each manage one bed or a set of sacks; a watering and weeding roster runs between lessons.

KEY WORDS

organic gardening | compost | manure | organic pesticide | foliar feed | mulching | Mexican sunflower | crop rotation

THE LESSON AT A GLANCE

Introduction	Teacher models	Guided practice	On their own	Wrap-up
6 min	9 min	10 min	9 min	6 min

Inside this plan: the step-by-step lesson flow with what the teacher and learners do, the key content, practice questions with answers, a common mistake to watch for, an assessment rubric on the four CBC levels, support and extension ideas, homework and a reflection page.

LESSON FLOW

Stage	Minutes	The teacher	The learners
Introduction	6	Greet the class and ask: "Key question: why should we practise organic gardening?" Take two or three answers, link them to earlier work, then state today's outcome.	Answer the starter question, recall what they already know and read the outcome aloud.
Step 1: Teacher models	9	Take learners through "Growing without synthetic chemicals" (practical: method and expected results on the next page), explaining as you go. Use pictures of organic gardens, digital or print resources, learners' exercise books. Ask learners to predict what comes next before you show it.	Watch, predict the next step, ask questions and note the key steps in their exercise books.
Step 2: Guided practice	10	Give questions 1 and 2. Move round the groups, ask "How do you know?" and correct errors kindly on the spot.	Work in pairs or small groups, explain each step to a partner and check one another's answers.
Step 3: Independent practice	9	Set questions 3 and 4 for individual work. Mark as you walk round and note who needs help in the next lesson.	Work on their own, then swap books with a partner to check.
Summary and conclusion	6	Ask two or three learners to state the key idea in their own words. Give this exit question and check the answers: "What is mechanical weed control?"	Say the key idea in their own words and answer the exit question in the exercise book.

PRACTICAL: METHOD AND EXPECTED RESULTS

Growing without synthetic chemicals

Organic gardening grows crops without synthetic fertilisers, pesticides or herbicides, using natural materials and practices to keep soil healthy.

Practices: compost and manure, organic pesticides (neem, chilli, ash), mechanical weed control (hand weeding, mulching), organic foliar feed (Mexican sunflower or manure tea), crop rotation, intercropping.

Conventional farming uses synthetic chemicals for faster results but can harm soil, water and health if misused.

PRACTICE QUESTIONS - WITH ANSWERS FOR THE TEACHER

No.	Question	Answer
1	Define organic gardening.	**Growing crops without synthetic chemicals, using natural practices.**
2	Name three organic gardening practices.	**For example compost, mulching and organic pesticides.**
3	Give one risk of misusing synthetic chemicals.	**For example polluting water or harming health.**
4	What is mechanical weed control?	**Removing weeds by hand or with tools.**

WATCH OUT FOR

Learners think organic means "doing nothing". It needs careful work.

ASSESSMENT RUBRIC - THE FOUR CBC LEVELS

Level	What the learner can do
Exceeds expectations (EE)	Can define organic gardening confidently and accurately, explain the method used, and apply the idea to new or unfamiliar problems.
Meets expectations (ME)	Can define organic gardening accurately in familiar situations; notices and corrects slips without help.
Approaches expectations (AE)	Can partly define organic gardening, or does so with prompts from the teacher or a partner; makes some errors.
Below expectations (BE)	Cannot yet define organic gardening without direct help; needs the idea taught again with concrete objects.

SUPPORT AND EXTENSION

Learners who need support	Use a comparison table: organic / conventional.
Learners ready for more	Search for information on organic certification of foods. (Answer: Answers will vary)
Inclusion	Seat learners with low vision near the board and read aloud whatever you write; use large, clear, tactile materials; allow extra time; pair with a patient partner; use gestures or Kenyan Sign Language for the key words.

HOMEWORK AND FOLLOW-UP

Redo questions 3 and 4 neatly in the exercise book. Then tell someone at home what you learned about "what organic gardening is" and bring one question of your own to ask next lesson.

TEACHER SELF-CHECK

- Did every learner get a turn to handle materials or explain their thinking?
- Did most learners meet the outcome? Write down the names of those who did not.
- Was the pace right — did any step take too long or too short a time?
- Which competency and value did I see learners showing?
- What will I change the next time I teach this lesson?

REFLECTION ON THE LESSON / SELF-REMARKS

Write this after teaching - what worked, what to change, which learners need follow-up.

Organic soil fertility: compost and manure

Strand 2.0 Food Production Processes > Sub-strand 2.1 Organic Gardening | Lesson 2 of 14 | 40 minutes

SCHOOL	TEACHER	DATE
CLASS / STREAM	TIME	ROLL (B / G)

SPECIFIC LEARNING OUTCOME(S)

By the end of the lesson, the learner should be able to: a) explain the use of compost and manure; b) describe how compost is made

KEY INQUIRY QUESTION(S)

- Why should we practise organic gardening?
- How can we produce food crops through organic gardening?

CORE COMPETENCIES, VALUES AND PCIS IN THIS LESSON

COMPETENCY	**Learning to learn**	Learners say what they found easy or hard and decide their next step.
COMPETENCY	**Self-efficacy**	Learners attempt each task with confidence and see that effort improves results.
VALUE	**Unity**	Learners share materials fairly and work as one team.
VALUE	**Integrity**	Learners record their own honest results and mark work truthfully.
PCI	**Food health and safety**	Examples link to healthy habits at home and at school.

LEARNING RESOURCES

Pictures of organic gardens | Digital or print resources | Learners' exercise books

ORGANISATION OF LEARNING

Groups of 4 to 6 each manage one bed or a set of sacks; a watering and weeding roster runs between lessons.

KEY WORDS

organic gardening | compost | manure | organic pesticide | foliar feed | mulching | Mexican sunflower | crop rotation

THE LESSON AT A GLANCE

Introduction	Teacher models	Guided practice	On their own	Wrap-up
6 min	9 min	10 min	9 min	6 min

Inside this plan: the step-by-step lesson flow with what the teacher and learners do, the key content, practice questions with answers, a common mistake to watch for, an assessment rubric on the four CBC levels, support and extension ideas, homework and a reflection page.

LESSON FLOW

Stage	Minutes	The teacher	The learners
Introduction	6	Greet the class and ask: "What happens to leaves that fall on the ground for months?" Take two or three answers, link them to earlier work, then state today's outcome.	Answer the starter question, recall what they already know and read the outcome aloud.
Step 1: Teacher models	9	Take learners through "Feeding the soil" (practical: method and expected results on the next page), explaining as you go. Use pictures of organic gardens, digital or print resources, learners' exercise books. Ask learners to predict what comes next before you show it.	Watch, predict the next step, ask questions and note the key steps in their exercise books.
Step 2: Guided practice	10	Give questions 1 and 2. Move round the groups, ask "How do you know?" and correct errors kindly on the spot.	Work in pairs or small groups, explain each step to a partner and check one another's answers.
Step 3: Independent practice	9	Set questions 3 and 4 for individual work. Mark as you walk round and note who needs help in the next lesson.	Work on their own, then swap books with a partner to check.
Summary and conclusion	6	Ask two or three learners to state the key idea in their own words. Give this exit question and check the answers: "Why not use fresh manure?"	Say the key idea in their own words and answer the exit question in the exercise book.

PRACTICAL: METHOD AND EXPECTED RESULTS

Feeding the soil

Compost: decomposed plant and kitchen waste; manure: decomposed animal droppings.

Benefits: add nutrients, improve soil structure and water holding, increase soil organisms.

Use only well-decomposed compost or manure (dark, crumbly, earthy smell); fresh manure can burn plants.

PRACTICE QUESTIONS - WITH ANSWERS FOR THE TEACHER

No.	Question	Answer
1	What is compost?	**Decomposed plant and kitchen waste.**
2	Give two benefits of compost.	**For example nutrients and better water holding.**
3	How do you know compost is ready?	**Dark, crumbly and earthy-smelling.**
4	Why not use fresh manure?	**It can burn plants.**

WATCH OUT FOR

Learners add plastics to compost. Only organic matter.