

Grade

5

**Modern
Agriculture**

Workbook

Answers

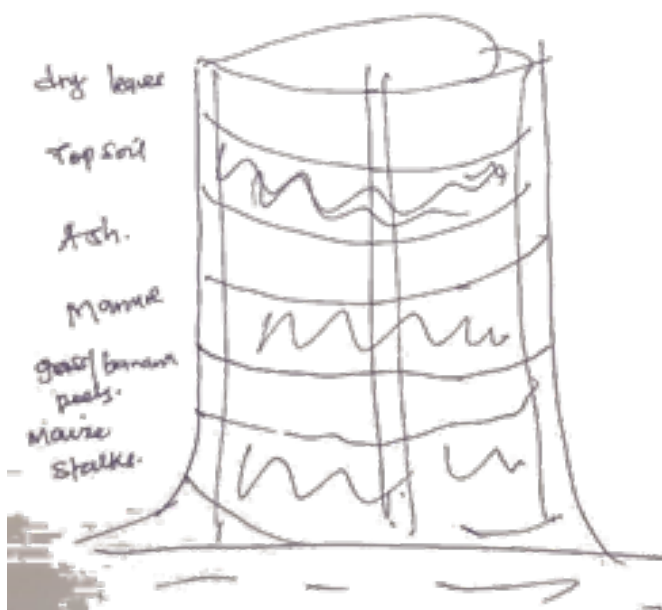
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1 Conservation of resources

1.1 soil conservation

Flashback zone

1. A – Ash; B - Dry leaves; C - Maize stalks
2. Garden soil, manure, wood ash, vegetable remains, trash.
(Accept other correct answers.)
3. (a) Ash adds minerals like potassium to the compost.
(b) Spade, rake, fork jembe. (Accept other suitable tools.)
4. Compost manure improves soil fertility and soil structure.
(Accept other correct answers.)
5. Nylon bags and nails
6. Compost heap



7. (a) The learners should turn the compost at regular intervals. This enables air circulation.
(b) - It enriches the soil with nutrients.
- This promotes healthy growth of crops.
(Accept other correct answers.)
8. - Sprinkling some water over the compost heap.
- Adding soil on top of the pile.
9. A compost heap should be shaded. This protects it from drying up.

10. (a) To speed up decomposition, the learners should add manure.
(b) When the compost manure turns dark and has an earthy smell.

Apply zone

Soil conservation

1. (a) Soil conservation is protecting the soil from being destroyed and maintaining its fertility. (Accept other correct definitions)
(b) - To prevent soil erosion.
- To make the soil fertile for healthy plant growth.
(Accept other correct answers.)
2. - If the soil is eroded.
- If there is poor plant growth.
(Accept any reasonable answers.)
3. - By constructing terraces.
- By practicing strip cropping.
- By planting cover crops.
(Accept other correct answers.)
4. C – The process of making soil better for growing crops.
5. (a) Garden A
(b) The site has gullies that show soil erosion has taken place. There is also poor crop growth.
6. - Adding Compost manure to the soil.
- Build gabions to control erosion.
- Plant cover crops to protect soil from erosion.
- Practise mulching of crops to conserve soil and add humus to the soil.
(Accept other correct answers.)
7. (a) Organic waste is waste that can rot. It is obtained from plants or animals.
(b) - Making an organic waste pit.
- Making a compost heap.
(Accept other correct answers.)
8. (a) A - Organic waste pit
B - Compost heap
(b) They help in turning organic waste into compost.
9. - Compost manure
- Kitchen waste such as vegetable stalks and fruit peels

10. Fruit peels, vegetable remains, soil.
(Accept other suitable materials.)
 11. (a) Spade, hoe or Jembe (Accept other suitable tools).
(b) Kale, spinach, *managu*, *terere* (Accept other suitable vegetables).
 12. How to construct an organic waste pit
 - (i) Dig out soil in the site to make a pit.
 - (ii) Add organic waste and compost manure into the pit.
 - (iii) Sprinkle some water onto the materials in the pit.
 - (iv) Turn the pile every three weeks until the waste rots completely.
 13. To enable rotting of organic materials.
- (b) A compost heap is made above the ground, while an organic waste pit is dug into the soil.

6. How to create a compost heap
 - (i) Select a suitable site.
 - (ii) Arrange dry green waste in alternating layers.
 - (iii) Add water to maintain moisture.
 - (iv) Turn the heap every two to three weeks.
 - (v) Let it decompose for 2-3 months.
7. (a) Dry leaves, grass cuttings, leftover food, compost manure and fruit peelings.
(b) Steps to prepare an organic waste pit.
 - (i) Identify an eroded or site.
 - (ii) Dig out soil in the eroded site to make a pit which is 60 cm deep.
 - (iii) Heap organic waste and compost manure in the pit.
 - (iv) Add the soil collected from a deposition site to fill the pit.
 - (v) You may sprinkle some water in the pit.
 - (vi) Turn the dumped materials after every three weeks until the organic wastes rot or decay.
- (c) Accept crops that grow well in your locality such as spinach and kales.
8. C - The farmer will be able to grow crops on fertile soil.
9. Sprinkling water.

Stretch Zone

1. - Soil improvement enriches the soil with nutrients needed for plant growth.
- Soil improvement prevents soil erosion.
- Soil improvement increases crop yield.
- Soil improvement also improves water retention, reducing the need for frequent irrigation.
(Accept other suitable points.)
2. Compost adds nutrients needed by crops to the soil. This leads to healthier and higher-yielding crops. More food is produced, ensuring a steady supply of vegetables and other crops. (Accept other correct explanation.)

Monitoring Progress 1.1

1. Soil conservation refers to the practices farmers use to protect and make the quality of soil better.
(Accept other correct definitions.)
2. - Soil erosion.
- Excessive use of fertilizers.
- Cultivating the soil for a long time without adding manure.
(Accept other correct answers.)
3. - Preventing soil erosion.
- Adding compost manure.
- Mulching.
(Accept other correct answers.)
4. - Poor plant growth.
- Soil erosion
5. (a) An organic waste pit is a large hole filled with organic waste. Once the organic wastes rot or decay, crops can be planted in the pit.

1.2: Water conservation

Flashback zone

1. Method B
2. (a) Drip irrigation is a method where water is delivered directly to the plant roots using pipes or bottles with tiny holes.
(b) It prevents water wastage.
3. (a) Plastic bottles, pipes, nails, hammer or a stone, water in a container.
(b) - Use protective gloves while cutting materials.
- Keep a safe distance from one another when working with tools.
(Accept other correct safety measures.)
4. (a) Cutting tool, nail, stone or hammer.
(b) (i) Cut a plastic bottle.
(ii) Make small holes in the cap.

- (iii) Fill the bottle with water and place it upside down near plant roots.
(Accept other correct steps.)

5. (a) - It saves water.
- Ensures crops get moisture even during dry seasons.
(Accept other correct reasons.)
(b) - Removing weeds.
- Loosening the soil.

Apply zone

Water conservation

- Water conservation is the practice of using water carefully to prevent wastage or loss.
- Mulching; drip irrigation; shading (Accept other correct methods of conserving water.)
- It saves water as a resource.
- It reduces the cost of irrigating the crops.
- Some water conservation methods such as mulching help to add organic matter to the soil. This improves soil fertility.
(Accept other correct reasons for conserving water in gardening.)
- (a) Cover crops are plants planted to cover the soil surface.
(b) Sweet potatoes; pumpkins (Accept other correct answers.)
(c) They reduce the loss of soil moisture through evaporation.
- They help improve soil fertility.
- They prevent soil erosion.
- (a) A – Mulching; B - Shading
(b) They reduce the rate of evaporation of water from the soil. This reduces the need to water the crops frequently, thus conserving water.
- (a) using cover crops; (b) Drip irrigation;
(c) Shading; (d) Mulching
- How to apply mulch
(i) Find a garden with growing crops.
(ii) Collect materials needed such as dry plant materials or grass.
(iii) Spread the dry plant materials round the base of crops.
(iv) Water the crops if the soil is dry.
- Mulching adds organic matter to the soil.
- Mulching prevents weed growth.
- How to construct a net shade for water conservation
(i) Identify the area in your garden that needs shading.

- (ii) Measure a reasonable size of the garden and dig it well.
(iii) Measure and cut the net cloth to fit the garden size.
(iv) Dig four holes at the corners of the garden and fix the posts firmly into the holes.
(v) Spread the net cloth on the posts or sticks.
(vi) Water the garden.

Stretch Zone

- Drip irrigation gives water directly to the plant roots and reduces wastage. Mulching covers the soil and prevents evaporation, thus keeping the moisture in for longer.
- Pebbles or small stones
- Sawdust
(Accept other suitable materials.)
- (Accept well-written reports.)

Monitoring Progress 1.2

- (a) - In garden A, proper mulching has been done to conserve water. The mulching also adds humus to the soil after decomposition, making the soil fertile. This leads to proper crop growth.
(b) Planting cover crops, shading, preventing soil erosion. (Accept other reasonable answers.)
- Crops are constantly supplied with water even in dry seasons. This leads to high yields.
- It reduces the cost of watering crops
(Accept other correct answers.)
- (Accept a creative and persuasive message for creating awareness on soil water conservation).
- (a) Method A
(b) Drip irrigation delivers water directly to plant roots. This reduces water wastage.
- D - To conserve water.
- It prevents excessive evaporation of water from the soil.
- It reduces water wastage by delivering water directly to crop roots.
- It ensures crops receive a steady amount of moisture even during dry season.
(Accept other correct answers.)
- The mulched area remained moist for a longer period while the unmulched soil dried up.
- Crops in the mulched area had a faster growth rate because of enough moisture.
(Accept other correct observations.)

1.3: Conserving wild animals

Flashback zone

1. (a) (Accept correct definitions from learners.)
(b) Squirrels, mice, moles, birds, monkey, mongoose
(Accept any other correct answer)
2. **Birds** - maize, millet, sorghum
Moles - sweet potato, cassava, yams
Squirrel - groundnuts, maize,
(Accept any other correct wild animal in relation to the crops it destroys.)
3. (a) Weaver bird
(b) Maize, millet, sorghum, rice. (Accept any correct crops destroyed by the bird.)
(c) - Use of a scarecrow.
- Use of alarm sounds.
(Accept other ways of scaring away birds from the farm.)
4. Moles, squirrels, hare.
(Accept any other suitable answer.)
5. (a) A structure that is put up in the garden to scare away wild animals that destroy crops.
(Accept any other suitable explanation.)
(b) Birds, hares. (Accept other correct answers.)

Apply zone

1. - Some feed on crop pests and other harmful animals.
- Some pollinate flowers.
- Some help in dispersing seeds.
(Accept any other suitable answers.)
2. (a) - Caring and protecting wild animals in the environment.
- Not killing animals.
(Accept any other correct explanation.)
(b) - Some wild animals help in pollination and dispersal.
- Squirrels help in planting of trees.
- Some animals attract tourists.
(Accept any other suitable answer.)
3. (a) False (b) True
(c) False (d) True
4. - Protecting animal habitat.
- Educating the community on the importance of wild animals.
- Planting of trees.

- Stop hunting of wild animals.
- Stop the use of harmful chemicals.
(Accept any other suitable answers.)

5. B
6. (b) Increasing agricultural land by clearing forests.
(c) Burning charcoal.
7. (a) Squirrels have attacked a vegetable garden.
(b) - Use of scarecrows.
- Use of repellent plants.
- Use of safe traps.
- of garden net.
(Accept any other correct answer that can lead to protecting crops, without causing harm to wild animals.)
8. **A: Beehive** - The humming sound from the bees will keep away some animals.
B: Electric fence - It gives shock to wild animals that come in contact with the fence.
C: Onions - Their smell will keep away some wild animals.
(Accept any other correct answers.)
9. (a) Use of smoke or fire.
(b) - Animals sense fire and run away.
- The smell of smoke also scares them.
- Heat from the fire also causes animals to run away.
(c) Deer, mongoose, elephants, monkeys, squirrel. (Accept any other correct answers.)
10. (a) Garlic - birds, rabbit, deer, squirrels.
Chili pepper - monkeys, squirrels.
Caster bean plant - moles.
(b) Onions, lemon grass.

Stretch zone

1. (Accept various correct answers from learners based on their locality.)
2. - Wild animals attract tourists that bring money into the country.
- Conserving wild animals leads to environmental conservation.
(Accept other correct answers.)
3. (Check for functionality and safety of the device made.)

Monitoring Progress 1.3

1. (a) Planting stage: Squirrels, birds.
(b) Growing stage: Elephants, deers, birds.

- (c) Mature stage: Monkeys, elephants, birds, squirrels.
(Accept other small animals that attack maize at the various stages.)

2. D - Pouring paraffin around the garden.
3. **Mugambi** - Use chili pepper to repel it.
4. B - Birds
5. Lemongrass, chili pepper, garlic. (Accept other correct answers.)
6. A - Deer
7. D - Chili pepper
8. B - Beehive
9. B - Deforestation
10. Birds, squirrels. (Accept other correct answers.)

2

Food production processes

2.1: Growing Vegetables

Flashback zone

1. A - Mango fruits; B - Guava fruits;
C - Grapefruits; D - Passion fruits
2. Strawberry, apple, avocado, dragon, pawpaw, tree tomato, citrus, banana, peach, pineapple, kiwi, berries (Accept any other common fruit.)
3. (a) Climbing fruits are fruit crops that have a weak stem and grow upwards, attaching themselves to a wall, fence, frame or any other kind of support.
(b) Raspberry, kiwi, passion fruit.
4. (a) Woody fruit trees are fruit plants that have a strong stem and grow for many years.
(b) Oranges, lemons, limes, mangoes, apples, avocados, tree tomatoes, guavas, plums, pawpaw, coconuts. (Accept any other woody fruit tree.)
5. (a) Cuttings and seeds.
(b) - Saves you money and time,
- One is able to select the best planting materials that are free from diseases and pests, leading to a high rate of survival.
(Accept any other correct reason.)
6. D - Selling extra fruit crops.
7. (a) True (b) False
(c) True (d) True

8.
 - It prevents excessive loss of water.
 - It prevents growth of weeds.
 - Mulch rots and forms manure.
 - It prevents soil erosion.

Apply zone

1. A - Kales/Sukuma wiki; D - Cabbage.
2. C - Gardening
3. (a) Spinach, cabbage, kales, spider plant, African nightshade, pig weed, coriander, onions, tomato, carrots, peas, potatoes.
(Accept any other relevant vegetable in the locality.)
(b) Kienyenji vegetables, root vegetables, leafy vegetables, greens. (Accept any relevant names.)

Reasons

- Nutritious
- Easy to cook and grow
- Protect our bodies against diseases

4. A - Preparing a nursery bed.
5. Picture A is ground nursery; Picture B is container nursery
6. nursery bed; seeds; transplanted
7. Tomatoes, cabbages, bulb onions, kales, spinach, cucumber, cauliflower, eggplant. (Accept other correct examples.)
8. How to prepare a nursery bed
 - (i) Clear the area by removing weeds and stones from the site.
 - (ii) Dig the soil to a depth of about 15 to 20 cm to create loose and fine soil.
 - (iii) Break large lumps into fine particles.
 - (iv) Raise the bed to a height above the ground surface.
 - (v) Mix compost manure with soil properly.
 - (vi) Level nursery using a rake to make it smooth and even.
9. B - It enables the seedlings to grow healthy.
10.
 - *Thinning* - Removal of smaller, less healthy seedlings.
 - *Weeding* - Removal of other plants growing in a vegetable garden.
 - *Pest control* - Removal of organisms that damage vegetables.
 - *Mulching* - Dry grass or leaves spread around the vegetable crops.
11. Uprooted, spread

Stretch Zone

1. They can use any of the following to conserve moisture or water: Mulch, use bottles for drip irrigation, arrange small stones around the vegetables, use organic waste pits, make use of moisture bed gardens, practice innovative gardening (vertical and horizontal gardens, sacks, tyres, plastics pipes and bottles), use sunken beds and shallow pits.
(Accept other correct answers.)
2. (See to it that all necessary care practices are done.)

Monitoring Progress 2.1

1. Advise them to use innovative ways of gardening such as establishing the gardens in sacks, tyres, plastic pipes and bottles, containers, etc. (Accept other correct answers.)
2. (a) A - Fork jembe; B - Garden rake
(b) (i) Fork jembe
(ii) Garden rake
3. (a) True; (b) False;
(c) True; (d) False
4. Steps of preparing a ground nursery bed
(i) Clear the area by removing weeds and stones from the site.
(ii) Dig the soil to a depth of about 15 to 20 cm to create loose and fine soil.
(iii) Break large lumps into fine particles.
(iv) Raise the bed to a height above the ground surface.
(v) Mix compost manure with soil properly.
(vi) Level the nursery using a rake to make it smooth and even.
(vii) Make shallow drills.
(viii) Sow the seeds.
(You can accept another correct procedure, but it should not deviate much from this one.)
5. (a) Seedbed
(b) - When they have 3 to 4 leaves.
- Seedlings have a second set of leaves.
- Stem is about pencil thickness.
(Accept other correct answers.)
6. The manure can burn or scorch the young plants if not mixed well with soil.
7. Weeding, watering, thinning, mulching, shading, removal of pests and diseased parts of the plant.
8. - Weeds compete for water and nutrients with vegetables.

- Pests can also hide in the weeds.

9. (a) - Vegetables are nutritious and help us to grow healthy and protect our bodies from diseases.
- Growing our own vegetables enables us to save money that would otherwise have been used to buy the vegetables.
- We can sell vegetables and generate income.
(b) Growing vegetables ensures availability of food in our communities throughout the year. It also generates money that can be used to purchase other types of food consumed in our communities.

(Accept other correct explanations.)

- (c) - **Food safety** - there is no use of harmful chemicals or polluted water.
- **Food hygiene** - the vegetables are grown in clean conditions and handled by a few people.

(Accept other correct answers.)

2.2: Uses of domestic animals

Flashback zone

1. A - Cattle; B - Sheep;
C - Goat; D - Chicken/Hen
2. Rabbit, duck, turkey, pig, donkey, camel, goose.
(Accept any other correct answer.)
3. (a) True; (b) False; (c) True
4. (a) Cattle – Provides us with milk.
(b) Poultry – Provides us with eggs.
(c) Goat – Provides us with chevon.
5. - It provides meat and eggs which is a source of protein in their diet.
- It provides manure that can be used in farming.
- Selling poultry products can help the family earn an extra income.
(Accept other correct answers.)
6. - They will get milk and meat which is a source of protein.
- They will get manure that can be used in farming.
- Goat products can be sold to earn extra income.
(Accept other correct answers.)

Apply zone

Uses of domestic animals

1. (a) (i) Bee (ii) Camel
(iii) Fish (iv) Pig
(v) Dog
(b) Cows, goats, cats, horses, rabbits, guinea pigs, donkeys, poultry. (*Accept other correct answers.*)
2. (a) A - Dogs barking inside a homestead.
B - A dog sniffing luggage at a check point.
(b) - Useful in herding livestock and protecting them from predators.
- They also help in guarding farm produce from thieves.
(*Accept other correct answers.*)
3. (a) Honey harvesting from beehives.
(b) pollination
(c) Bees pollinate food crops as they collect pollen from flowers.
This helps to increase crop yields.
4. (a) Fish and cod liver oil.
(b) Proteins
5. A - Racing or sporting activity.
B - Means of transport in the desert.
C - Rabbit meat in butchery.
6. - Pigs provide pork which can be used to make varied food products such as bacon, sausages, pork ribs and pork chops.
- Pigs can be sold for money, which can be used to buy other food products and farm inputs.
(*Accept any relevant answer on the importance of pigs.*)
7. (a) Cat; (b) Camel;
(c) Bee; (d) Pig;
(e) Fish
8. (i) Bees - Honey
(ii) Pig - Pork
(iii) Rabbit - Coat linings
(iv) Camel - Milk
(v) Fish - Cod liver oil

Stretch Zone

1. **Poultry** - Provision of meat and eggs which are sources of protein in the diet.
- Manure used in farming.
Bees - Pollination of food crops hence an increase in yield.

- Bee products such as bee wax are sold to get money.

Dogs - Herding of cattle and protecting them from predators.

Rabbits - Provides us with nutritive meat rich in protein.

- Its waste used as manure in farming hence increase crop yields.

(*Accept other correct answers benefits of various domestic animals.*)

2. - Establish beehives on the farm.
- Plant flowers that attract bees and other pollinators.
(*Accept other correct answers.*)
3. - Veterinary officer: A person who specializes in treating sick animals.
- Animal control officer: A person who enforces animal control laws.

(*Accept other correct answers*)

Monitoring Progress 2.2

1. - Rabbits provide us with nutritive meat that is high in protein and low in fat.
- Rabbit's waste can be used as a source of manure in farming. This increases crop yields.
- Rabbits can be raised for meat and production of fur. This creates an extra source of income for the farmer.
(*Accept other correct answers.*)
2. - Consumption of fish provides our bodies with protein which is an essential nutrient.
- Fish is processed to obtain omega 3 oils which are essential for good health.
(*Accept other correct answers.*)
3. - They produce milk and meat which serves as a source of food for people in arid areas.
- Camels are a good source of transport for goods and food products.
- Camels assist in ploughing land for growing crops.
(*Accept other correct answers.*)
4. - Dogs are used in herding livestock and protecting them from predators.
- Dogs are a source of security and are used in guarding farm produce from thieves.
5. Cats control rodents on farms, restaurants, and butcheries and food storage facilities.
6. - Donkeys can be used to plough land.
- Some people consume donkey meat.
(*Accept other correct answers.*)

7. - Poultry provides us with meat and eggs which are a source of protein.
- Their droppings are used as manure in farming to increase yields.
- Selling poultry products can help the family earn an extra income.
- Job creation and source of income to people working in poultry industries.

2.3: Preservation of cereals and pulses

Apply zone

1. Cereals are grass like grains that can be eaten whole or used to make flour such as maize, rice, sorghum, millet, wheat and barley.
2. Pulses are edible seeds that grow in pods. They are also known as legumes. Some examples of pulses are beans, peas, green grams, groundnuts and lentils.

3.	Name of the food	Cereal/pulse
A.	Maize	Cereal
B.	Beans	Pulses
C.	Rice	Cereal
D.	Sorghum	Cereal
E.	Groundnuts	Pulses
F.	Finger millet	Cereal

5. Preservation involves caring for and treating food so that it can be in its best condition for a long period. (Accept other correct definitions of preservation.)
6.
 - To protect them from pests such as weevils and rats, which destroy them.
 - To prevent food poisoning that can result from poor storage of cereals and legumes.
 - To make them available when not in season.
 - To prevent food wastage.
 - To ensure food security by having sufficient food household level.
7. (a) A – Sun drying B – Use of Ash
 (b) – Smoking over a fireplace.
 – Use of chemical preservatives.
 (Accept other correct answers).
8. A – Gourd; B – Ash;
 C - Plastic container; D - Gunny bag;
 E - Pot with a lid

9. Procedure of preserving beans using ash
 - (i) Thoroughly dry the beans to remove all moisture.
 - (ii) Collect wood ash.
 - (iii) Use fine wire mesh to sieve ash into a powder.
 - (iv) Mix the ash with the dried beans. Use 1kg ash powder per 90kg bag of beans.
 - (v) Keep the treated beans in clean sacks ready for storage.
10. (a) weevils and other pests (b) moisture
 (c) moisture, insects and pests (d) smoking
11. (a) Well ventilated (b) Spacious
 (c) Lockable (d) Rainproof roof.
 (e) Windows secured with mesh.

Stretch Zone

1. - The beans and maize may get spoilt causing the family to lack food.
- If not preserved, the beans and maize may be attacked by aflatoxins that can cause food poisoning when the cereals and pulses are consumed.
- The beans and maize may go to waste since they may be unfit for consumption.
- They cannot be prolonged to stretch their use even when out of season. This can lead to food insecurity.

(Accept other correct answers.)

2. Food security refers to the ability of all people to have access to sufficient, safe and nutritious food that meets their dietary needs for a healthy life.

Preservation of cereals and pulses protects them from spoilage and wastage making them available in sufficient amounts. This improves food security.

(Accept other correct explanations.)

Monitoring Progress 2.3

1. - Cereals: Maize, Millet, Sorghum, Rice
 (Accept any other correct examples.)
 - Pulses: Beans, peas, green grams, groundnuts
 (Accept any other correct examples.)
2. He sun-dried the groundnuts immediately after harvesting. He then shelled them to remove the husks. After shelling he sundried them again to remove all the moisture, then kept them in airtight containers or clean sacks. (Accept other reasonable explanations.)

3. secure or lockable; dry or free from moisture; bigger or more spacious; pests
4. *Procedure of preserving maize using the drying method.*
 - (i) Spread a clean drying mat, canvas or sacks on the ground in a sunny place.
 - (ii) Spread the shelled maize on the drying mat or canvas.
 - (iii) Keep turning the maize occasionally to ensure it dries evenly.
 - (iv) Once the maize is completely dry, pack it in gunny bags or sacks.
5. - **Smoking** - Cereals like maize, millet and sorghum can be hung over a fireplace to remove moisture and dry them completely. The smoke also forms a coat on the seeds that protects them from pest attack
 - **Use of chemical preservatives** - The cereals or pulses are dried well to remove moisture and the correct amount of pesticide is then added. They are then stored in gunny bags or airtight containers.
(Accept any other correct answers.)
6. *Hygiene practices we should observe when preserving cereals and pulses*
 - Dry cereals and legumes on clean surfaces to prevent contamination.
 - Store preserves cereals and legumes in a clean place.
 - Keep preserved cereals and pulses away from poisonous substances.
 - Protect the cereals and pulses from insects and pests.*(Accept any other correct answers.)*
7. - Ensures the cereals and pulses are available even when out of season.
 - Prevents food wastage and improves food security.
(Accept any other correct answer.)
8. - The plan should provide for enough space to make it spacious.
 - The store should be well ventilated to ensure free flow of air.
 - The store should be lockable to ensure safety of the grain.
 - The windows should be well protected with mesh to keep off pests.

2.4: Food nutrients

Flashback zone

1. Body building foods; Energy giving foods; Protective foods.

	Food group	Examples of foods
(a)	Body building foods	Meat, fish, chicken, eggs, milk, beans, green grams, lentils. <i>(Accept other correct examples.)</i>
(b)	Energy giving foods	Chapati, potatoes, cassava, rice, ugali, yams, arrowroots. <i>(Accept other correct examples.)</i>
(c)	Protective foods	Spinach, cabbage, carrots, tomatoes, pineapples, oranges, mangoes, melons. <i>(Accept other correct examples.)</i>

4. This is a meal that contains food from the three food groups and in the right amount.
5. (a) C (Learner 3)
 (b) The meal contains foods from the three food groups, that is, energy giving food (rice), body building food (beans), protective foods (cabbage) and a fruit (orange).
6. - To provide our body with energy.
 - For growth and development of our bodies.
 - To protect our bodies from diseases or illnesses.
7. (a) True (b) False (c) False

Apply zone

Food nutrients

1. Nutrients are substances found in the foods we eat that help the body to grow, get energy and protect it from illnesses.

2.

H	C	W	V	Z	S	U	A
K	A	F	I	I	U		W
P	R	O	T	E	I	N	S
A	B	E	A	B	J	K	L
V	O	A	M	H	M	C	A
J	H	L	I	L	A	P	R
U	Y	R	N	W	F	A	E
X	D	Y	S	K	E	I	N
G	R	N	Z	A	J	O	I
E	A	S	B	S	O	M	M
R	T	G	M	X	P	V	Z
Q	E	E	Q	T	C	G	Y
W	S	D	K	U	S	H	Q

Note: Circle the names highlighted

4. (a) carbohydrates (b) proteins
(c) vitamins and minerals

	Name of food	Food group	Major nutrient contained
A	Cassava	Energy giving	Carbohydrates
B	Eggs	Body building	Proteins
C	Fish	Body building	Proteins
D	Paw paw	Protective	Vitamins and minerals
E	Pineapple	Protective	Vitamins and minerals
F	Beans	Body building	Proteins
G	Water melon	Protective	Vitamins and minerals
H	Rice	Energy giving	Carbohydrates
I	Ugali	Energy giving	Carbohydrates
J	Spinach	Protective	Vitamins and minerals

5. (a) True (b) False (c) True
6. (a) Avocado (b) Butter
(c) Milk (d) Groundnuts
7. A disease caused by lack of a particular nutrient in the body.
8. A - Kwashiorkor; B - Goitre; C - Marasmus

Signs and symptoms	Deficiency disease	Cause
- There is extreme loss of weight. - The ribs can be seen clearly. - The face becomes wrinkled making the person to look old.	Marasmus	Lack of all the nutrients in the body over a long period of time.
- Swollen stomach, face, hands and feet. - Thin, straight brown hair. - Pale skin.	Kwashiorkor	Lack of proteins in the body.
- Feeling weak and dizzy. - Getting tired easily. - Pale tongue and eyes.	Nutritional anaemia	Lack of Iron in the body.

10. (a) D
(b) The meal is balanced. It contains energy giving, body building and protective foods/
The meal contains carbohydrates, proteins, vitamins and minerals.
11. (Answers will be varied. Accept correct choices of healthy meals that have a carbohydrate, protein, vegetables and fruits.)

Stretch Zone

- Deny, dice, defy, find, fine, need, nice, eyed.
(Accept other correct answers.)
- (Answers will be varied. Accept correct choices of healthy meals that have a carbohydrate, protein, vegetables and fruits.)
- (Answers will be varied. Accept correct choices of healthy meals that are balanced.)
- (Accept well-written speech. Learners can practise it in class.)

Monitoring Progress 2.4

- Carbohydrates
- Vitamins and minerals
- Making of blood. - Prevents anaemia.
- Marasmus
- Kwashiorkor
- Lack of iodine in the body.
- Weakness and dizziness, which may result to fainting.
- Getting tired easily.
- reathing difficulties even when doing simple tasks.
- Sometimes the heart beats very fast.
- (a) The child may suffer from kwashiorkor.
(b) The child does not get body building foods/ proteins from the meals provided.
- (a) Proteins.
(b) Meat, fish, beans, green grams, lentils.
(Answers will be varied. Accept any correct choices of proteins.)

2.5: Dry Fat Frying and Deep Frying

Flashback zone

- Preparing; heat
- (Tick all options. They are all correct.)
- (a) (i) Potato skins can sometimes carry dirt, pesticides, or chemicals which can contaminate food.
(ii) For taste.
(iii) To ensure even cooking of the potatoes.
(b) Dhania leaves; Tomato slices (Accept any other correct food that can be used to garnish.)
(c) Beef stew and steamed spinach; Fried fish and kale; Fried chicken and steamed cabbage (Accept any other correct combinations of food that are bodybuilding and protective.)

4. (a) - Ensure the charcoal is red hot and not smoking when using it.
- Work in a well-ventilated space.
(Accept other correct answers.)
(b) - Use fuel saving jikos that use less fuel.
- Put just enough charcoal in the jiko for the amount of cooking to be done.
(Accept other correct answers.)
(c) Put them in cold water.
5. (a) B (second box)
(b) It is used to flip or turn foods while cooking, ensuring that the food doesn't fall apart or stick to the pan.

Food	Appropriate method of cooking	Reason
Kales	Shallow fry	They cook easily. (Accept other correct answers.)
Arrowroots	Boiling	Tough, needs time to cook. (Accept other correct answers.)

Quickfire Zone

Dry fat frying

- (a) Fatty meat (Accept fatty chicken, fish, pork).
(b) Dry fat frying
- The meat should be well covered with fat.
- Beef, Pork, Nuts, Chicken, Fish
- Procedure of dry fat frying meat
 - Cut the meat into small pieces.
 - Place the meat in a cold sufuria or frying pan.
 - Cook with low heat until some fat melts.
 - Increase the heat and continue frying the meat.
 - Turn the meat regularly to ensure it is well cooked.
 - Add salt to taste.
 - When cooked, serve attractively on a clean plate.
- (a) To prevent steaming of the meat due to excess moisture. This will not produce the desired colour and flavour.
(b) To allow the fat to melt.
(c) To prevent the meat from sticking on pan and to ensure even browning.
- (a) False (b) False (c) True (d) True
- C
- (a) To avoid falls that can lead to injury.
(b) To avoid pricks and cuts from the knives.
(c) To avoid accidentally knocking over the pan or pot by hitting the handle. This can cause burns or scalds.
(d) To avoid accidental burns or spread of fire.
- B, C, E, F

Deep frying

- (a) Potato chips
(b) Deep frying
(c) Deep frying is cooking food when it is covered in hot fat or oil.
- B
- (a) Green bananas, yams, cassava, Irish potatoes, arrowroots, sweet potatoes.
(b) Fish, chicken
(c) To prevent overcooking.
- (a) False (b) True (c) False (d) True
- Procedure for deep-frying potato chips
 - Peel the potatoes and wash them using clean water.
 - Cut the potatoes into thin strips.
 - Wash the strips and let them drain off excess water.
 - Put the strips in hot oil and let them cook until crispy.
 - When properly cooked, remove them from hot oil and drain excess oil.
 - Serve attractively on a clean plate.
- (a) Firewood, arrowroots, cooking oil, salt.
(b) Deep frying pan, slotted spoon, cotton kitchen cloth/gloves, serving plate, absorbent paper, coriander, knife, chopping board.
(Accept other correct equipment.)
(c) - Use only the amount of firewood required to avoid flames licking the side of saucepan.
- Ensure the firewood used is completely dry to avoid smoking.
- Ensure the type of firewood does not cause sparks.
(Accept other correct safety precautions.)
- (a) A: To avoid flowing over of the oil. This can cause a fire.
B: Naked flame can easily enter the saucepan with oil causing a fire.
C: Dropping food will cause it to splash the oil which can easily cause a scald.

D: Deep frying uses hot oil that is a risk to burns. Hot cooking oil poses a fire risk if it accidentally spreads to the flame. Children can cause accidental spills which can be dangerous.

- (b) No. It is facing the pathway. It can easily be hit, toppling over or causing a spill. This can lead to a burn or fire risk. *(Accept other correct reasons.)*
- (c) - Ensure the handle of the spoon is heat resistant.
- Hold the plate with oven gloves or place the plate on the table instead of holding it. *(Accept other correct safety precautions.)*
- (d) - Wear protective clothing like apron and head cover.
- Wash hands with soap and running water before handling food. *(Accept other correct hygiene practices.)*

Stretch Zone

1. (a) The potato chips had not drained excess water after washing.
(b) She did not drain the potato chips of excess fat after cooking.
(c) Coat the fish using batter, egg or breadcrumbs.
(d) Shallow frying; dry fat frying
(e) Vegetable salad
2. *(Accept any correct answers.)*
3. *(Accept any well-reasoned answers.)*

Monitoring Progress 2.5

1. (a) Shallow frying
(b) - Break the egg on a saucer and slid it onto the pan to avoid fat splashing.
- Turn the egg with a fish slice that has a wooden or plastic handle.
- Wear kitchen gloves when touching hot surfaces. *(Accept any correct answers.)*
2. - It can easily burn.
- The hot fat can easily cause a fire if left unattended. *(Accept any correct answers.)*
3. (a) - Irish potatoes – Boil
- Spinach – Shallow fry
- Bacon – Dry fry *(Accept any correct answers.)*
(b) Tomato rings; chopped dhania *(Accept other suitable materials for garnishing.)*
4. Boil, shallow fry, deep fry, dry fry. *(Accept other correct answers.)*

5. (a) The egg and yolk became solid and firm. The egg white also changed colour from transparent to white.
(b) Knock on a hard surface to crack the shell, then remove it.
6. The eggshell had a crack before boiling.
7. Jiko, spoon, frying pan, saucer, fork, fish slice, plate. *(Accept other correct answers.)*
8. Use kitchen dry cotton cloth when handling hot objects. *(Accept any other correct answer.)*

3 Hygiene practices

3.1: Good grooming practices

Flashback zone

1. It refers to the practices a person does to maintain cleanliness and promote health.
2. - Take a bath daily.
- Brush teeth after taking meals.
- Wash hands regularly with clean water and soap especially after visiting a toilet and before eating.
- Wear clean clothes.
- Take care of my nails.
- Wear clothes that are in good repair. *(Accept other practices that promote personal hygiene.)*

	Healthy practice	How it promotes personal hygiene
1.	Taking a bath daily.	- Keeps skin clean and free from germs that can cause skin diseases. - Prevents body odour.
2.	Brushing teeth after taking meals.	- Prevent dental problems. - Prevents mouth odour.
3.	Washing hands regularly with clean water and soap.	Prevents diseases which can be caused by germs from contaminated hands.
4.	Wearing clean clothes.	Prevents body odour and skin diseases.

4. (a) Face mask, gloves, headscarf, aprons. *(Accept other correct answers.)*
(b) To protect the wearer from germs and other hazards.
5. A
6. (a) Soap helps to remove or kill germs.
(b) It ensures that there is no moisture left which can transfer germs to other surfaces. *(Accept other correct answers.)*

7. Bathing helps to remove dirt and bacteria which if left to accumulate in the body will cause bad odour. Dirt and germs can also cause skin diseases.
- 8 B and C
9. (a) - It may be contaminated by human activity such as bathing or washing clothes in the river.
- It may be contaminated by animals drinking in the river.
- It may be contaminated by human activity such as farming near the river as fertilizers and pesticides can get into the river.
(Accept other correct answers.)
- (b) Carry clean boiled water from home in a bottle.
(Accept other correct answers.)
10. In a covered container.
(Accept other correct answers.)

Apply zone

Good grooming

1.

Mati	Mato
<ul style="list-style-type: none">• Dirty looking and uncombed hair.• Dirty clothes.• Unbuttoned shirt.• Torn shirt.• Socks rolled down.• Shoes dirty with laces untied.	<ul style="list-style-type: none">• Clean well combed hair.• Clean clothes.• Buttoned shirt.• Shirt in good state of repair.• Socks pulled up.• Clean shoes with tied up laces.
- (b) Mato
- (c) (i) observe personal hygiene
(ii) Wear clean clothes
(iii) Dress appropriately for different occasion
(iv) Have good manners
(v) Do physical exercise
2. C
3. - Observing personal hygiene;
- Wearing clean clothes every day.
- Dressing appropriately for different occasions.
- Having good manners; relating well with others.
- Doing physical exercises.
4. (a) **Carol** – Casual
Ken – sportswear
Rahma – Religious/cultural wear
- (b) **Carol** – Visiting a friend, going shopping
Ken – engage in sporting activities like hiking.
Rahma – attend a religious function.

When you wake up in the morning and before taking breakfast	<ul style="list-style-type: none"> • Visit the toilet • Wash your hands
During meal time	<ul style="list-style-type: none"> • Observe table manners • Relate well with others
When playing	<ul style="list-style-type: none"> • Relate well with others • Dress appropriately for play
When relating with others in school	<ul style="list-style-type: none"> • Have good manners • Relate well with others
Before going to bed	<ul style="list-style-type: none"> • Brush your teeth • Dress appropriately for sleeping

(b)

6. (a) A – canvas shoes B – school shoes
C – Ladies high heels D – sneakers
E – bathroom slippers
- (b) A – casual wear B – to school
C – for an official function
D – for a sporting activity
E – indoors
7. No, she is wearing high-heeled shoes and party dress which are not appropriate for garden work.
- (b) an overall – it would provide protection for dirt and dust
- (c) gum boots – they are water resistant and would provide adequate protection to the feet from mud, dirt and dust.
8.

Occasion	Appropriate shoes	Appropriate clothes
Going to school	Low heeled leather shoes	School uniform
During the rainy season	Gum boots	Water proof rain coat
Playing outdoor games	Sneakers, canvas shoes	Shorts, tee- shirts, tracksuit, cap (to protect from sun)
During bedtime	Bathroom slippers	Nightdress/pyjama
9. C – To enhance the appearance of clothes worn
10. C – T-shirt

Stretch Zone

1.

Q	G	H	W	E	A	T	H	E	R
O	D	G	W	E	S	I	K	M	J
C	X	R	E	G	E	H	O	T	V
C	H	Z	T	A	P	N	A	Q	O
A	I	N	K	R	E	Q	D	P	Y
S	Y	G	O	Y	O	N	S	O	E
I	J	X	N	G	S	F	U	R	A
O	C	O	L	O	U	R	M	I	V
N	K	K	V	D	Q	Z	K	O	L
X	V	J	O	X	Q	D	Y	K	C
Q	P	X	Z	O	T	A	S	T	E
2. (a) Dress formally (shoes and clothes)
(b) Earrings, necklace, handbag. (Accept any other correct answer.)

Monitoring Progress 3.1

1. (a) Cleaning the environment
(b) No. They do not have face masks and head covering to protect them from dust. Others do not have gloves to protect their hands from dirt and injuries.
(c) Infections from germs found in dust and dirt.
(d) - Gumboots to protect their feet from injury, dirt and dust.
- Face shields to protect from dust.
(Accept any other correct answer.)
2. (i) Ensure the room is well ventilated.
(ii) Wear face mask if you have a flu to prevent spreading the infection.
(iii) Wash hands with soap and running water after visiting the toilet and before eating.
(iv) Ensure the class is kept clean and free of dirt and dust.
(Accept other correct answers.)
3. (a) His dressing was different from that of the others. It was not official wear.
(b) Uncomfortable. (Accept any other correct answer.)
(c) The dinner was formal, and the dress code was black and white.
(d) - **Clothes** - black suit with white shirt.
- **Shoes** - black leather shoes.
(Accept other correct answers.)

Household chore	clothes	shoes
(a) dusting an unused room	Overall, dustcoat or apron	Canvas shoes, sneakers, closed rubber shoes like crocs
(b) gardening	Overall	Gum boots
(c) cleaning the cow shed	Overall	Gum boots

(Accept other correct answers.)

5. (i) Illness; taking liquids late into the evening; stress
6. Palm; fingers and fingertips; back of hand; between fingers; nailbed; thumb; wrist.
7. Use a sanitizer.
8. In a clean bag.
9. - Not brushing their teeth after meals.
- Eating sugary substances such as sweets.

Sub strand 3.2 – Home hygiene

Flashback zone

1. - Dusting - Sweeping
- Mopping - Disposal of refuse

	Equipment or material	Use of the equipment or material
1.	Long-handled broom	For sweeping the floor.
2.	Short-handled broom	For sweeping the floor or outside the house.
3.	Feather duster	For dusting delicate surfaces such as mirrors.
4.	Floor cloth/rag	For cleaning the floor.
5.	Scrubbing brush	For scrubbing cemented floors or surfaces to remove fixed dirt.
6.	Duster/soft cloth	For dusting surfaces.
7.	Hand brush	For putting dirt onto the dustpan after sweeping.
8.	Dust bin	For putting in rubbish.

(Accept other correct equipment and materials and their uses.)

	Resource	Cleaning equipment or material that can be made
	Feathers	Feather duster
	Old piece of cloth/blanket/ towel	Floor cloth/rag
	Bundle of grass	Broom
	Carton box	Dustbin

(Accept other cleaning materials and tools that can be improvised from the materials.)

6. C – (Close the windows in the room)
7. Procedure of mopping the floor
- (i) Put warm water in a bucket or basin and add soap.
- (ii) Dip the mop or floor cloth in the warm soapy water and squeeze out excess water.
- (iii) Clean the floor using the wet mop or floor cloth, starting from the furthest end of the room.

- (iv) Clean a small portion at a time, until the entire floor has been cleaned.
- (v) Rinse the floor using a clean mop squeezed out of clean water.
- (vi) Leave the area to dry.
8. – Sprinkle water on earthen floor before sweeping to avoid rising dust.
– Wear a dust mask when sweeping or dusting if there is too much dust.
– Avoid walking on the wet floor as it can cause falls.
– Wait for the floor to dry before arranging the furniture.
(Accept any other safety precaution.)
9. Burying.
10. Dry leaves, fruit and vegetable peelings, left-over foods.
(Accept any other correct answer.)
11. – Sprinkle it on earthen floor before sweeping.
– Water flowers.
(Accept any other correct answer.)
12. – To protect them from damage.
– To prevent accidents.
(Accept any other answer.)

Apply zone

Home hygiene

1. A surface is the top flat part, or the outside of something.

2.

W	T	A	B	L	E	S
E	I	Y	U	X	S	Y
V	K	N	I	F	L	A
N	G	X	D	L	L	C
T	S	V	Q	O	A	D
B	L	Z	B	O	W	J
R	P	E	M	R	H	S
D	O	O	R	S	A	M

Note: Circle the names highlighted.

3. (a) Wood (b) Glass (c) Earth
(d) Cement (e) Tiles
4. C – (Glass, wood, metal)

5.

Surface	Materials that can be used to make the surface
Walls	wood, metal, earth, glass, cement.
Windows	Wood, glass, metal.
Tables	Wood, glass, metal, tiles.
Floors	Concrete, wood, tiles, earth.

(Accept other suitable materials that can be used to make the surfaces.)

7.

	Name of the material or tool	Use of the material or tool
A.	Dustbin	For putting in rubbish.
B.	Soft cloth	For dusting surfaces.
C.	Soft brush	For scrubbing plain wooden surfaces.
D.	Bucket	For putting water in when cleaning.
E.	Mop	For mopping tiled and cemented floors.
F.	Dustpan and hand brush	For collecting dirt after sweeping.
G.	Soap/detergent	For cleaning surfaces to remove dirt.
H.	Newspapers	For rubbing glass surfaces to make them shine.

(Accept other correct uses of the materials)

9. (a) False (b) True (c) False

10. – To save money.
– To make use of locally available materials.
– To encourage creativity and innovation.

(Accept other correct answers.)

11. (a) Carton box: dustbin
(b) Metallic wire: bucket handle, long-handled broom.
(c) 20 litres plastic container: bucket, dustpan, basin.
(Accept other correct answers.)
(d) B and C
(e) (a) To prevent scratching the glass surface.
(b) To prevent breaking the glass surface.
(c) To make the glass surface shine.
(f) (a) It will make the wooden surface look scratched.
(b) The wood can absorb water and get damaged.
(c) It will scratch and damage the wooden surface.

- (g) (i) D (ii) F (iii) A (iv) E (v) B (vi) C

- (i) Procedure of cleaning a tiled surface
(i) Dust the surface with a clean cloth.
(ii) Clean the surface with a cloth squeezed out of warm soapy water.
(iii) Wipe the surface with another cloth squeezed out of clean water.
(iv) Dry the surface by wiping it with a clean dry cloth.

(Accept other correct steps in the right order.)

- (j) (a) To prevent inhaling the dust.
(b) To prevent raising the dust when sweeping.

Monitoring Progress 3.2

1. Tiles, wood, glass, earth, cement.
2. B - (Soap, soft cloth, newspaper.)
3. Dust bin, dustpan, basin, bucket. *(Accept other correct answers.)*
4. – Do not use very hot water as it can cause burns.
– If cleaning a cemented or tiled floor, do not use too much soap to prevent it from becoming slippery.
– Do not walk on a wet floor, wait for it to dry.
(Accept other correct safety precautions.)
5. Very hot water discolours wooden surfaces.
6. False.
7. *Steps of cleaning a tiled surface*
 - (i) Wipe the surface with a soft cloth to remove dust.
 - (ii) Dip another soft cloth in warm soapy water. Squeeze out excess water and use it to clean the surface.
 - (iii) Rinse the surface by wiping it with another cloth from which you have wrung out clean warm water.
 - (iv) Dry the surface by wiping it with a dry cloth.
 - (v) Clean up the working area.
8. To prevent the floor from becoming slippery, which can cause falls.
9. To avoid making it look scratched.
10. The glass surfaces will be scratched.

3.3 Laundering cotton items

Flashback zone

1. Personal protective equipment.
2. (a) They are worn by a person to prevent or reduce exposure to illness. They are also worn to protect the person from injury.
(Accept other correct reasons for wearing PPEs.)
(b) Gloves, black rubber gloves, medical gloves, dust masks, face masks, gumboots, chef hat, helmet, overalls, canvas shoes.
(Accept other correct examples of PPEs.)
3. (a) (i) – Sharp objects in the shamba
– Dust

- Poisonous crops
 - Thorny bushes
- (Accept other correct answers.)*

- (ii) Gloves, gumboots, overalls, face and dust masks.

(Accept other correct answers.)

- (b) Gumboots, overalls, gloves, apron. *(Accept other correct answers.)*

4. PPE helps to prevent germs from coming into direct contact with the skin, respiratory system or eyes, thus reducing the risk of infection.
5. Laundering PPEs removes contaminants from the PPEs, reducing the risk of exposure to dirt and germs.

Ppe	Cleaning materials required
Canvas shoes	Clean water, detergent, soft brush.
Cotton face mask	Clean water, detergent.
Gumboots	Clean water, soft cloth or brush, detergent.
Overalls	Clean water, detergent, disinfectant.

(Accept other correct answers.)

7. By using warm water and soap or detergent.
8. Adding disinfectant helps kills microorganisms that may be present in the PPEs.
9. – Use a blunt piece of wood to remove mud from shoes. Do not use a sharp one.
– Use warm water when cleaning. Do not use hot water.
– Store cleaning materials in a safe place.
– Wear protective equipment such as gloves when cleaning contaminated personal protective equipment.
– Disinfect personal protective equipment to prevent infection.
(Accept other correct answers.)
10. – Do not use too much soap when washing.
Use just enough water for washing and rinsing.
– Re-use the rinsing water to clean other surfaces such as the floor, corridors.
(Accept other correct answers.)

Apply zone

How to launder a cotton item

1. **B:** It is natural fibre.
2. **B:** Cotton fibre is not common.
3. Laundering refers to the process of washing, ironing and storing clothes.

4. Laundry work process	What the process involves and reason for carrying it out
Sorting	Involves separating the clothes according to their colour. Reason – To wash similar coloured clothes together so as to avoid staining other clothes.
Mending	Involves repairing any torn parts of the clothes/articles before washing. Reason – To avoid further tearing of the clothes when washing.
Soaking	This is dipping the clothes in cold water for some time before washing them. Reason – To loosen dirt.
Washing	This is removing dirt from the clothes by using soapy water. Reason – To remove dirt/ make the clothes or articles clean.
Rinsing	This is dipping the clothes in clean water after washing them in soapy water. Reason – To remove soap and dirt.
Drying	Involves placing the wet clothes or articles in a place where they can dry after they have been washed. Reason – To remove all moisture from the clothes.
Ironing	This is pressing the clothes with an iron box. Reason – To remove creases.

5. (a) Wipe off any spills of water on the floor.
(b) Always switch off the iron box after use.
(c) Store soaps away from small children.
6. (a) Mend (b) Cold (c) Warm
(d) Cold (e) Sun (f) Hot
(g) Air (h) Wardrobe
7. A fast coloured garment is one whose colour does not run or bleed when it is dipped in water.
8. (a) False (b) True (c) False
(d) True (e) False
9. – Cleaning the house. – Flushing toilets.
– Washing cars. – Cleaning shoes.
(Accept other correct answers.)
10. (a) – Using harsh detergents when washing.
– Drying the garment in the sun.
(Accept other correct answers.)

- (b) – Use mild detergents when washing.
– Dry the clothes in the shade.
(Accept other correct answers.)

Stretch Zone

1. Answers to the puzzle

Across

4. Clothesline 5. Ironing 7. Hanger

Down

1. Bucket 2. Water
3. Detergent 6. Pegs
2. Sultana – Coloured cotton items should be turned inside out and hang in the shade.
3. Detergent build-up can weaken cotton fibers over time, causing the fabric to wear out faster. This leads to the material losing its softness and becoming more prone to wear and tear.
(Accept other correct explanations.)
4. PPE such as gloves, masks, gowns, and face shields are used to protect against infectious agents (like viruses and bacteria). If improperly cleaned or laundered, the germs can remain on the equipment and be transferred to others. This can contribute to the spread of contagious diseases within the community, particularly in healthcare settings.
(Accept other correct explanations.)

Monitoring Progress 3.3

1. Regular laundering of cotton articles removes accumulated dirt, oils, sweat, and stains from the fabric. This helps prevent these substances from breaking down the fibers over time, which can cause the fabric to weaken and degrade.
2. (a) hot (b) shade
3. PPEs may be contaminated with infectious agents, bodily fluids, or chemicals. Washing it with other clothes can transfer these contaminants to regular clothing, increasing the risk of exposure and spreading harmful substances to others.
4. Always sorting laundry by color before washing. White items should be washed separate from colored fabrics.
5. (a) To loosen dirt. (b) Cold water
(c) Washing, rinsing, drying.
6. (a) To prevent further tears during washing.
(b) – To prevent bad smells
– To prevent formation of mould. (Accept other correct reasons.)

7. Give the reason for the following steps when laundering cotton articles:
 - (a) It protects the fabric's outer surface from direct exposure to sunlight, preventing fading over time.
 - (b) Cotton fabrics that are slightly damp are generally easier to iron than completely dry ones.
8. It protects the fabric from direct exposure to sunlight, preventing fading over time.
9. The clothes were stored when not completely dry, thus creating an environment for mould to grow.
10. – The iron should be unplugged after use
 - Keep the iron's cord away from the hot surface.
 - Keep the hot iron away from children.
 - Use a stable ironing board to avoid the iron from tipping over.
 - Do not leave a hot iron unattended.

(Accept other correct answers.)

4 Production techniques

Sub strand 4.1: Repairing garments

Flashback zone

1. A - Even tacking; B - Long and short tacking
2. Even tacking stitches are all of the same length whereas long and short tacking stitches have a long stitch followed by a short stitch.
3. (a) A- Needle; B - Thimble
(b) A - Needle is used for sewing stitches on the garment.
B - Thimble protects the finger from needle pricks during sewing.
4. *Steps of threading a needle*
 - (i) Cut a piece of thread using a pair of scissors.
 - (ii) Hold the needle between your thumb and the index finger, with the eye of the needle pointing up.
 - (iii) Using the other hand, hold the thread near the tip.
 - (iv) Put the thread through the eye of the needle.
 - (v) When the thread gets through, pull it to the desired length then cut it.
5. (a) Handkerchief, pin cushion. *(Accept other correct answers.)*

- (b) - Use a thimble when sewing to protect the finger from needle pricks.
- Safely keep needles and pins on a pin cushion instead of leaving them lying around.
- Never put needles or pins in your mouth.
- Keep a safe working space when using the needle.
- Protect the fingers from the blade when using the scissors for cutting.

Apply zone

Repairing garments

1. (a) Temporary stitches are stitches that hold work together for easy making of permanent stitches. They are removed immediately the permanent stitches are made.
(b) - Even tacking stitches
- Long and short tacking stitches
2. (a) Permanent stitches are stitches that are used to make seams which hold a garment together for a long time.
(b) - Running stitches,
- Backstitches
(Accept any other correct permanent stitches).
3. - To prevent further tear and prolong the lifespan of the garment.
- To keep the garment neat and presentable.
(Accept other correct answers).
4. A -Running stitch; B - Back stitch
5. (a) To allow enough room for making the seam (also known as seam allowance).
(b) To fasten the stitches and make them durable.
6. Write **true** of **false**.
(a) False (b) True (c) True
(d) True (e) True
7. Seam
8. (a) A seam whose stitches have come out, leaving it open.
(b) The seam should be repaired.
(c) - It is not presentable, that is, it makes one look untidy.
- It can lead to accidents if the torn part gets caught by an object.
(Accept any other correct answer).
9. (a) A (Running stitch) and B (back stitch)
(b) They are strong permanent stitches that will hold the seam firmly.

10. - Use a thimble to protect the finger from needle pricks.
 - Keep a safe working space when using the needle.
 - Carefully keep the needle and pins after use, do not leave them lying around.
 - Never put needles or pins in your mouth, they can cause injuries.
11. (a) Blue
 (b) To match the colour of the dress and give a neat finish.
12. (a) To give a neat finish and make the garment presentable.
 (b) To ensure the seam lies flat and neat.
13. (a) True (b) True (c) True (d) True
14. (v), (i), (iii), (x), (ii), (viii), (vii), (vi), (ix), (iv).

Stretch Zone

1.

(P)	I	N	C	U	(S)	H	I	O	(N)
I	A	M	A	R	C	J	O	A	E
N	L	O	(T)	H	I	M	B	L	(E)
(S)	N	A	H	M	S	U	K	W	D
O	B	U	R	L	S	A	N	D	L
F	F	J	E	M	O	M	B	O	(E)
R	R	O	A	C	R	H	A	N	D
H	E	L	D	L	(S)	E	N	J	O

Circle the highlighted words

2. (a) Use same colour of thread as the garment.
 (b) Remove hanging threads before repair.
 (c) Wear a thimble.
 (d) Use a double stitch at the beginning and end of stitching.
 (e) Make firm even stitches.
 (f) Keep needlework tools in a safe place

3. Down

1. Pincushion 2. Iron box 3. Thimble

Across

4. Pins 5. Scissors 6. Needle

Monitoring Progress 4.1

1. - They hold the work together for easy making of permanent stitches.
 - They act as guidelines when making the permanent stitches.
2. - Use a thimble to protect the finger from needle pricks.
 - Safely store the needle and pins, do not leave them lying around.
 - Never put needles or pins in your mouth.

- Keep a safe working space when using the needle.
(Accept any other correct answer).
3. - Use a double stitch at the beginning and end of stitching to fasten the stitches.
 - Make firm stitches for the seam to be strong and durable.
4. Repair prevents further tear and helps the garment to be used for a longer time.
5. Back stitches and running stitches. *(Accept any other correct answer).*
6. - To easily identify it so that it can be removed once its work is over.
 - To be visible in order to act as a guideline when permanent stitching is being done.
7. (a) **Seam** – place where two pieces of garment are joined together using stitches.
 (b) **Stitching line** - A line along where stitching is done to make a seam.
8. - Use a thimble to protect the finger from needle pricks when sewing.
 - Safely store the needles and pins so that they are not left lying around.
 - Take care not to put needles or pins in the mouth.
 - Keep a safe working space when using the needle.
(Accept any other correct answer).
9. - Remove any hanging threads on the area to be repaired.
 - Hold the two sides of the open seam together with the right sides facing each other.
10. - Make the garment neat and presentable.
 - To prevent further tear and increase the lifespan of the garment.
(Accept any other correct answer).

4.2: Constructing vertical and horizontal gardens

Apply zone

1. Innovative gardening is a creative way of using locally available material to construct gardens that make use limited spaces to grow crops.
(A accept any other correct definition.)
2. (a) Picture B (b) Picture A
3. Vertical garden.
4. - The amount of space available.
 - Locally available material.
 - Type of crops to grow or the growth habit of the crops.
(Accept any other correct answer.)

5. A – Vertical B – Horizontal
C - Vertical D - Horizontal
E - Vertical F - Vertical

6. **Bottles, pipes, sacks, plastic bags**

(Accept any other correct materials that can be used to make innovative gardens)

7. A - Sack B - Plastic bottle

8. **(a) and (b)**

A: Tape measure – Tape measure to take measurements.

B: Handsaw – Handsaw for cutting.

9. Wedding, watering, mulching, thinning, removing pests.

(Accept any other practices that are be carried out in gardening.)

10. B - The root depth of the crop.

11. B - Use of drip irrigation.

12. C - Thinning.

Stretch Zone

1. One will make use of the little space available to grow crops, using locally available materials. Crops grown in innovative garden can be grown anytime of the year, thus making food available. *(Accept any other correct explanation.)*

2. (a), (b) and (c)

(Accept varied correct answers from the learners.)

Monitoring Progress 4.2

1. C – Flatness structure of the garden.

2. Horizontal garden

3. – The type of crops to grow.

– The amount of space available

4. A – The crops mature faster.

5. – Use of little space.

– Ensure enough food year-round.

– Use of little water.

– Use of waste materials that will help to clean the environment.

(Accept any other correct benefits of using innovative gardening.)

6. The watering is done at the top, then water will drain down watering other sections (crops).

(Accept any other correct response from the learners.)

7. D – Making use of waste materials.

8. It is the section from which watering of the garden is done.

9. **Vertical gardening** – Vertical gardens allow crops to grow along the wall. *(Accept any other correct answer that relate to the use of walls.)*

10. A - Easier to put up.

KPSEA Sample Test Papers

**Sample
Test
Paper 1**

1. A
2. B
3. B
4. A
5. A
6. A
7. A
8. C
9. C
10. C
11. C
12. B
13. C
14. B
15. B
16. C
17. B
18. A
19. B
20. B
21. C
22. C
23. C
24. B
25. D
26. B
27. B
28. C
29. C
30. B

**Sample
Test
paper 2**

1. B
2. C
3. C
4. B
5. C
6. B
7. A
8. B
9. B
10. B
11. C
12. D
13. D
14. C
15. C
16. C
17. B
18. B
19. D
20. C
21. A
22. A
23. C
24. A
25. B
26. B
27. D
28. B
29. D
30. D

**Sample
Test
paper 3**

1. C
2. C
3. A
4. B
5. C
6. C
7. D
8. B
9. D
10. D
11. C
12. D
13. D
14. D
15. C
16. D
17. B
18. D
19. D
20. B
21. B
22. B
23. A
24. C
25. B
26. B
27. D
28. B
29. A
30. B

**Sample
Test
paper 4**

1. B
2. B
3. B
4. B
5. D
6. B
7. B
8. A
9. A
10. B
11. B
12. B
13. A
14. C
15. D
16. C
17. C
18. D
19. C
20. B
21. C
22. B
23. C
24. C
25. B
26. C
27. D
28. A
29. A
30. C