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| **Learning Planner** |
| **Subject** | Agriculture | **Week** | 7 | **Duration** | 120 minutes | **Form** |  1 |
| **Strand** | Modern Technical and Mechanised Agriculture | **Sub-Strand** | Modern Mechanized Agriculture |
| **Content Standard** | Demonstrate knowledge, understanding and skills of the types and uses of farm machines and power, and factors affecting their efficiency.  |
| **Learning Outcome(s)** | Use the knowledge and skills acquired to select and employ the appropriate farm machine and power for Agricultural production. |
| **Learning****Indicator(s)** | a) Describe the types and uses of farm machines and power in Agricultural production. b) Describe the factors that affect the use of farm machines and power. |
| **Essential Question(s)**  | .1. To what extent was the types and uses of farm machines and power in Agricultural production help in your future career?2.What pedagogical strategy that can be employed to enhance knowledge and understanding of factors that affect the use of farm machines and power?3. How will the factors that affect the use of farm machines and power help learners in furtherance of their Education?  |
| **Pedagogical Strategies** | Initiate talk for learning, Experiential learning, Problem-based learning, Experiential learning, etc. |
| **Teaching & Learning Resources** | Pictures of Farm machines, Solar panel, Generator, Electricity, Tractor, Bull, etc. |
| **Key Notes on Differentiation** |
| Theme/Focal Area 1i. Learning Tasks* Identify and describe the types of farm machinery and power.
* Demonstrate the use of farm implements under the guidance of a technician.
* Discus the sources of farm power and their advantages and disadvantages.

ii. Pedagogical Exemplars* Initiate talk for learning: In mixed-gender/mix ability groups (where applicable), learners embark on a field trip to a nearby mechanised farm or watch videos/pictures on farm mechanisation, to identify and describe the various farm machines and power. Learners then discuss the uses of the various farm machines. Teacher should ensure learners observe strict safety protocols at the mechanised farm. Videos that portray gender biases should be avoided. Learners with difficulties should be supported with leading questions to identify and describe the farm machines and power. Challenge learners with abilities to give more examples and further descriptions of the fam mechanization and power.
* Experiential learning: Guided by a technician, learners in gender-based groups demonstrate the use of some of the farm implements in Agricultural production. Teachers should ensure that all the safety protocol are strictly observed. Learners should be guided to do a risk assessment before operating the farm implements. All learners should be given the opportunity to operate the farm implements and this can be done on a rota basis. Learners with difficulties should be given the needed assistance.
* Talk for Learning: Learners in mixed-gender and/or mixed-ability groups, discuss the sources of power and the advantages and disadvantages in Agricultural operations. Teacher should ensure all learners participate in the discussions. Teacher should use probing questions to guide learners to identify the sources of power in Agricultural productions and their advantages and disadvantages.

iii. Key Assessments * Assessment Level 1: Identify at least four (4) farm implements and their use.
* Assessment Level 2: Describe the uses of the following Agricultural machines: a) Combine Harvesters b) Feed Mixers c) Fish Vaccinators.
* Assessment Level 3: Compare and contrast the uses of renewable and non-renewable sources of energy in Agricultural productions.

Theme/Focal Area 2i. Learning Tasks* State the factors that affect the efficiency of farm machines and power during Agricultural activities.
* Discuss the factors that affect the efficiency of farm machines and power during Agricultural activities.
* Make recommendations on how to use farm machines and power efficiently.

ii. Pedagogical Exemplars* Problem-based learning: In mixed-ability groups, learners brainstorm to come up with the factors that affect the efficiency of farm machines and power during Agricultural activities. Teacher should use leading questions to guide learners to identity the factors that affect the efficiency of farm machines and power during Agricultural activities. Gifted learners should be probed further to come up with further explanations of the factors.
* Experiential learning: In mixed-gender/mixed ability groups, learners visit a farm site/ farm machinery workshop or watch videos/pictures on the use of farm machines and power sources, and make recommendations on how the machines can be used efficiently. Teacher should ensure learners observe strict safety protocols at the farm site/ farm machinery workshop. Videos that portray gender biases should be avoided. Learners with difficulties should be supported with leading questions to make recommendations on how the machines can be used efficiently.

iii. Key Assessments * Level 1 Assessment: State at least two (2) factors that affect the efficiency of farm machines and power during Agricultural activities.
* Level 2 Assessment: Discuss at least two (2) effects of regular maintenance and operator skills and training on the efficiency of farm machines and power.
* Level 3 Assessment: As a newly employed farm technician, discuss two (2) ways of ensuring the efficient use of the farm machines and power under your care.
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| **Keywords/ phrases** | Farm machines, farm power, efficiency etc. |

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| **Lesson 1** |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** |
| **Teacher Activity**  | **Learner Activity** |
| **Starter Activity (e.g., 10minutes)**Leaners watch videos on a farmer working on his/her farm using machines such as tractor, combined harvester etc. |
| **Introductory Activity (e.g., 10 minutes)**I. In mix ability groups learners watch videos/pictures on farm mechanisation.**Activity 1 (e.g., 40 minutes)*** : In mix ability group, learners then discuss the uses of the various farm machines.
* Allow groups to present their findings and discuss with the larger class.

**Hint**: Videos that portray gender biases should be avoided **Activity 2 (e.g., 50 minutes)*** Guided by a technician, learners in mixed-ability groups demonstrate the use of some of the farm implements in Agricultural production.
 | **Introductory Activity** I. In mix ability groups, watch videos/pictures on farm mechanisation**Activity 1** * In mix ability group, discuss the uses of the various farm machines.
* Groups present their findings and discuss with the larger class.

**Activity 2** * In mixed-ability groups demonstrate the use of some of the farm implements in Agricultural production
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| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** |
| **Level 1**Identify at least four (4) farm implements and their use.  **Level 2** Describe the uses of the following Agricultural machines: a) Combine Harvesters b) Feed Mixers c) Fish Vaccinators. **Level 3**Compare and contrast the uses of renewable and non-renewable sources of energy in Agricultural productions. |
| **Lesson Closure** **In completing this part, refer to the Essential Questions to check that learning has taken place.** |
| **Activity (e.g., 10 minutes)**a) Ask learners questions on what they have learnt whether it has some links with the essential questions.b) Summarize key points and fill in gabs left by the learners.c). Modern Technical and Mechanised Agriculture |
| **Reflection & Remarks** |
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| **Lesson 2** |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** |
| **Teacher Activity**  | **Learner Activity** |
| **Starter Activity (e.g., 10 minutes)** Lead learners to recite a rhyme on farming (cocoa farmer, cocoa farmer, ……….) |
| **Introductory activity (e.g., 15 minutes)**In mixed- ability groups learners watch videos/pictures on farm mechanisation.**Activity 1 (e.g., 45 minutes)** In mixed-ability groups, learners then brainstorm to come up with factors that affect the uses of the various farm machines and present their findings and discuss with the larger class. **Hint**: Guide learners to accept the opinions of each other.**Activity 2 (e.g., 45 minutes)**In mixed- ability groups, learners then discuss to come up with how the factors that affect the uses of the various farm machines.Hint: learners to tolerate each others’ ideas during the discussion.  | **Introductory activity**  In mixed-ability groups watch videos/pictures on farm mechanisation. **Activity 1**In mixed- ability group present and discuss the factors that affect the uses of the various farm machines.**Activity 2** In mixed- ability group, discuss to come up with how the factors affect the uses of the various farm machines |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** |
| * Level 1

State at least two (2) factors that affect the efficiency of farm machines and power during Agricultural activities. * Level 2

Discuss at least two (2) effects of regular maintenance and operator skills and training on the efficiency of farm machines and power. * Level 3

As a newly employed farm technician, discuss two (2) ways of ensuring the efficient use of the farm machines and power under your care.  |
| **Lesson Closure** **In completing this part, refer to the Essential Questions to check that learning has taken place.**  |
| **Activity (e.g., 5 minutes)**a) Ask learners questions on what they have learnt whether it has some links with the essential questions.b) Summarize key points and fill in gabs left by the learners on factors that affect the efficient use of farm machines and power.  |
| **Reflection & Remarks** |
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