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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for TLE

Quarter 2
Lesson
9

Lesson Exemplar for TLE Grade 7
Quarter 2: Lesson 9 (Week 7)
SY 2024-2025

Development Team

Writer:
- Jeffrey C. Ginez (Philippine Normal University-Manila)

Validator:
- Victor S. Rosales, PhD (Mindanao State University – Iligan Institute of Technology)

Management Team

Philippine Normal University
Research Institute for Teacher Quality
SiMERR National Research Centre

TLE/QUARTER 2/ GRADE 7

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners demonstrate an understanding of the concepts and skills in animal production.
B. Performance Standards	The learners illustrate the housing requirements for poultry and livestock based on industry standards.
C. Learning Competencies and Objectives	**Learning Competencies:** 1. Discuss the feeding management according to the Philippine National Standards (PNS) for poultry and livestock animals; and 2. Illustrate housing requirements for poultry and livestock based on industry standards.
D. Content	• Feeding Management of Poultry and Livestock • Housing Requirements for Poultry and Livestock
E. Integration	Improvisation, **SDG 11:** Sustainable Cities and Communities, **SDG 12:** Responsible Consumption and Production, **SDG 13:** Climate Action

II. LEARNING RESOURCES

Agribusiness How It Works. (2015, October 12). How to start quail farming business | Quail farming part 1 #Agribusiness [Video]. YouTube. https://www.youtube.com/watch?v=iCsz4Md0eFI

Agribusiness How It Works. (2018, December 27). Backyard Hog Fattening: Housing Management | Agribusiness B-MEG Episode 5 [Video]. YouTube. https://www.youtube.com/watch?v=ii0sUJKrTzU

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Department of Agriculture (2001). Philippine Agricultural Engineering Standard Paes 407*:2001 agricultural ...* Philippine Agricultural Engineering Standards. https://amtec.ceat.uplb.edu.ph/wp-content/uploads/2019/07/407-1.pdf

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Department of Agriculture (2018). Philippine national PNS/BAFS 262:2018 ICS 65.020.30 standard ICS. Bureau of Agriculture and Fisheries Standards. http://www.bafs.da.gov.ph/bafs_admin/admin_page/pns_file/PNS%20BAFS%20262-2018-Final_Free%20range%20chicken.pdf

Great Arch Farm ni Kabakang Arnel. (2020, January). RECOMMENDED CATTLE HOUSING FOR TROPICAL COUNTRIES [Video]. YouTube. https://www.youtube.com/watch?v=vzEL-zUxRXs
Happy Farmer Integrated Farming System. (2022, October 2). Design and layout for Native Chicken Breeder Farm | Native chicken farming in the Philippines [Video]. YouTube. https://www.youtube.com/watch?v=XSfg771cmq0
Kenny's Build. (2021, September 25). Modern Goat House Design Philippines | KENNY'S BUILD [Video]. YouTube. https://www.youtube.com/watch?v=m0gfLaKlaEE
Luginbuhl, J. (2020). *Nutritional feeding management of meat goats: NC state extension publications*. Nutritional Feeding Management of Meat Goats | NC State Extension Publications. https://content.ces.ncsu.edu/nutritional-feeding-management-of-meat-goats
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Tamil Nadu Agricultural University. (n.d.). *Feeding Management of Goats and Sheep*. Sheep and goat. https://agritech.tnau.ac.in/expert_system/sheepgoat/index.html
Tamil Nadu Agricultural University. (n.d.). *Livestock: Pig Feeding Management*. Livestock :: Pig :: Feeding management. http://www.agritech.tnau.ac.in/animal_husbandry/ani_pig_feeding%20mgt.html

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**Day 1** **1. Short Review:** The teacher will ask the following questions to the students. 1. What are the poultry and livestock animals that can be cultured/raised in the farm that serve as a means of livelihood? 2. Can you still recall the different breeds of chicken? duck? quail? pig? cattle? goat? rabbit? 3. Can you name some of their breeds? **Part 2: Completing the KWLS Chart** The students will accomplish the chart. On the **K column**, they will list down all what they **KNOW** about the lesson. On the W column, they will list down all what they **WANT** to know about the lesson. The L and S column will be reserved in the latter part of	The teacher will conduct a short review based on the previous lessons. The teacher will direct the students to name different kinds of chicken such as meat breeds, egg-laying breeds, dual-purpose breeds, or exhibitions/show poultry. Types of pigs: general-purpose, meat (pork and bacon) and lard. Types of cattle: dairy, draft animals, meat. Types of goats: dairy, and meat. This short review will serve as springboard for the teacher to establish the lesson purpose. The teacher may opt to use the second activity to determine the

Know	Want	Learned	So what?
			

	the lesson. The S column is an additional column in order for the students to have a critical understanding on the importance of the lesson. **2. Feedback (Optional)**	prior knowledge of the students. Only the first two columns are being accomplished by the students.
B. Establishing Lesson Purpose	**1. Lesson Purpose: Asking like Socrates** The students will ask the following questions: 1. Who among you have domesticated animals at home? in the farm? 2. How do you take care of your domesticated animals at home? in the farm? 3. Do you follow standards-based management of your domestical animals or culture-based management? **2. Unlocking Content Area Vocabulary** • **Feed** is any materials which are processed, semi-processed or raw, intended to be fed directly to farm animals in order to meet nutrient requirements. • **Feed additive** refers to an ingredient/s added to the basic mixed feed. • **Feed ingredient** is a component part of mixture making up a feed, has or has no nutritional value in the animal's diet. E.g. plant, animal or aquatic ingredient, or organic or inorganic substances. • **Feed supplement** is a feed ingredients or mixture of feed ingredients to supply deficiencies in a ration or improve the nutritive balance or performance of the total mixture. • **Broods** refer to the young animals of birds, produced at one hatching such as duck, chicken, and quail. **Gestation** is the process where in farm animals are conceived and developed in the womb. **Parturition** is action of giving birth to offspring. **Layering** refers to chicken intended for laying eggs.	The teacher will ask the suggested questions to assess whether the students have prior knowledge and experience on taking care of domesticated animals. The teacher will present the terms needed in the discussion of the lesson. The teacher may creatively present the vocabulary such as matching type, game, or any possible method.
C. Developing and Deepening Understanding	**SUB-TOPIC 1: Housing Requirements for Poultry and Livestock** **1. Explicitation** **Picture Talk:** The students will compare and contrast the two sets of pictures.  Source:https://images.app.goo.gl/EYqvEcVWbqox5Q687  Source:https://images.app.goo.gl/CW5jyxxtWVGCVh6WA  Source:https://images.app.goo.gl/eTzz9W6iXUKDrLHf8  Source:https://images.app.goo.gl/ZgMp1bCRgmgdXDgh7	The teacher will present two sets of pictures for the different domesticated farm animals focused on this section. The teacher will focus on directing students their observation on the housing requirements of the livestock. Benchmarking a farm through a video clip viewing will be done after the picture talk. In this

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Source: https://images.app.goo.gl/3mKVWgpdmoaf4iZP6

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Source: https://images.app.goo.gl/v79crU8t8MyBAEvRA

Guide Questions:

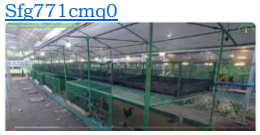
1. What do you observe in each set of pictures?
2. What you notice on their shelter?
3. What do you notice on the manner of feeding of these animals given on their type of housing?

Farm Benchmarking: The students will benchmark various farms in relation to the housing requirements of the farm animals.

Recommended cattle housing in tropical countries
https://www.youtube.com/watch?v=vzEL-zUxRXs

Housing Management of Swine
https://www.youtube.com/watch?v=ii0sUJKrTzU

Design and Layout for Native Chickens
https://www.youtube.com/watch?v=XSfg771cmq0



Modern Goat House Design
https://www.youtube.com/watch?v=m0gfLaKlaEE

Quail Farming
https://www.youtube.com/watch?v=iCsz4Md0eFI

Day 2

2. Worked Example: **Design and Tell**

Based on the previous activity, the students will now ready for the next activity which is the design and tell. The students will create a miniature of the desired housing of a particular livestock. In order for a more engaging accomplishment of this task, the students will be grouped into five in which each group is assigned to a particular livestock. After the designing and lay-outing the shelter of the livestock, the students will present their outputs. The presentation should include:

activity, the teacher will focus on the types, design and layout of the shelters of the livestock and relevant details in building housing for the farm animals. The teacher will download the videos or may add videos if necessary.

After benchmarking, the students will create a miniature of the housing of the livestock. Presentation will follow in which the students will focus on the housing requirements of the livestock such as: type of housing and building materials, and dimensions.

a. Miniature of the housing of the assigned livestock
b. Housing requirements in the designing, lay-outing and planning of the shelter
c. Building materials of the shelter

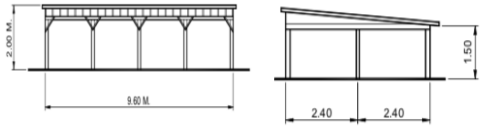
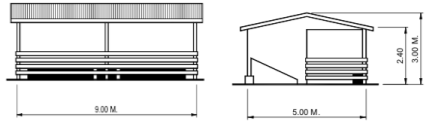
(See worksheet #1 for the activity which students will accomplish.)

Reading Resources

Agricultural Structures: Housing for Livestock

Location. According to the Philippine Agricultural Engineering Standard**,** the shelter for goat and sheep should conform to the land use plan of the area, should be accessible to service roads, water supply, and electric line, should be well-drained and well-ventilated, should be constructed in an east-west orientation, and should be situated where the prevailing winds will not carry odors to the farm house.

Type of Housing

Shed Type  Front View Side view	The animals can move freely in and out of the housing area and paddock. Feeding and watering trough, mineral feeders and grain bunks are located on concrete pads at the center or along the side of the shed.
Pen-barn type: Stall barns  Front view Side view	Each animal is confined in a stall. Each stall is provided with individual feeding and watering trough.
Confined Housing  Front view Side view	Group pens with the same sizes are constructed with ample area for animals to exercise. Bamboo or wooden slats serve as fence of the feeding trough to prevent the animals from stepping or trampling the grasses. Water devices should be strategized placed in a certain area.

Space Requirement

Minimum floor space requirements for goats and sheep for intensive production.

Animal	Weight (kg)	Floor Space (m^2/animal)				
		Solid Floor	Slatted Floor	Open Yard	Pregnant	Lactating
Doe/Ewe	35	0.80	0.70	2.0		
Doe/Ewe	50	1.10	0.90	2.50	1.30	2.00
Doe/Ewe	70	1.40	1.10	3.0	1.60	2.30
Kid/Lamb		0.40-.50	0.30-0.40	-		
Buck/Ram		3.0	2.50	-		

Structural Requirement

Roof should be adequate enough to provide shelter against rain and intense heat. The height of the front eave shall be at least 2m and the height of the rear eave shall be at least 1.5m. For adequate ventilation, roof slope shall not be less than 25%. If the roofing is made of indigenous materials, the minimum roof slope shall be 58%.
Wall shall be adequate enough against rain. A clearance of 150mm-300mm between floor to wall and wall to beam. This creates an adequate
air circulation and lower draft.
Space Requirement is shown in the following table.

Class, Age, Size of Animal	**Shed or Barn Floor Area** (m^2/animal)
Calves (up to 3 months)	1
Calves (3-6 months)	2
Calves (7 months - one year)	3
Yearlings (1-2 years)	4
Heifer/Steer (2-3 years)	5
Milking and Dry cows	6
Cows in Maternity stall	10

Structural Requirement

Floor. The minimum floor thickness shall be 76 mm with 2-4% slope towards the drainage. Concrete floors should be skid resistant. Earthen floor shall have 4-7%.
Roof. Adequate roofing materials shall be provided to protect the cattle against rain and sunlight. The roof slope shall not be less than 25%. If the roofing is made of indigenous materials, it should have a slope of 58%. The minimum height of the top of the roof shall be 2.5m from the floor.
Pen wall. This must be preferably made of galvanized iron pipes schedule 40. The diameter of vertical and horizontal railing member of the pen wall shall be 50mm and 75mm of the post. The maximum center to center spacing between vertical

railing member shall be 1.5m and for horizontal railing member shall be 0.4m. The maximum center to center spacing between post shall be 3m and shall be embedded in a concrete pedestal with a minimum depth of 0.4m. Each post shall be provided with 0.15m concrete protectors. The pen shall be 1.2m -1.5m high. Sharp edges must be avoided to avoid injury to the animals. Paints should be avoided that may intoxicate the cattle.

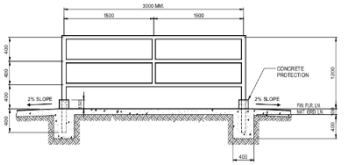


Figure 1. Sample calf pen

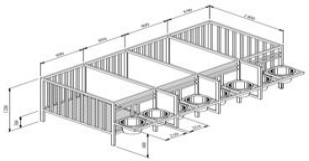


Figure 2. Individual slatted pen

Pens. Maternity pen shall be provided for cows that are two months away from parturition. The pen shall be bedded with straw or any suitable bedding materials during calving. Rice hull is more preferred than rice straw. It shall be equipped with feeding and watering facility. It should shelter 20-25 mature cows.

Agricultural Structures: Housing for Poultry

Location. It should be within the approved land use plan of the local government and compliant with national regulations, should have an accessible supply of adequate power, potable water, and good service road, should not be adjacent any body of water or wetlands, should be not prone to flooding, should not be near slaughterhouse facilities and other chicken facilities, and should be adjacent to hazards such as physical, chemical, and microbiological.

Farm Layout. It should have a suitable area for storage of feed, carcass destruction, waste management, and workers area, should incorporate ventilation and ease of cleaning, should have perimeter fences to prevent contact between livestock and stray chickens, should have a properly installed electrical conduits, and should include a layout for emergency procedures.

Minimum requirements for free range chicken production

Flock size should not exceed 5,000 birds per house with a maximum of 20,000 birds per site. The indoor stocking density should not exceed the following recommendations:

Birds Type	Fixed Building	Mobile Housing
Broiler	10 birds/m^2 or 17kg/m^2	Not less than 10 m^2 floor space: 8 birds//m^2 or 13 kg/m^2
Layers	6 birds/m^2, not more than 5 birds per nest hole, 31 cm aerial perch space per hen	

Native chicken	6 birds/m^2, not more than 5 birds per nest hole, 31 cm aerial perch space per hen

Day 3

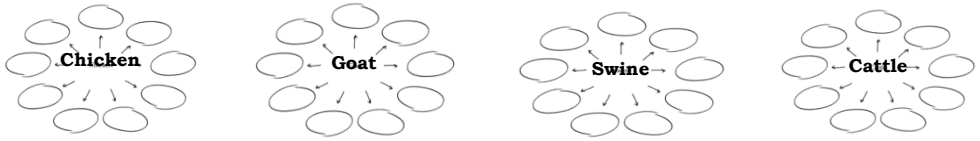
3. Lesson Activity: **Consulting the Agri Expert**

Directions: The students will conduct an interview with an agriculture expert such as farm owner, agricultural engineer, and other community resources who have knowledge in housing requirements of livestock. This activity will strengthen their knowledge gained inside the four-walled classroom and determine the practices on the ground whether culture-based as well as scientific-based practices or combinations of the two. The students will focus on a particular livestock only. E.g. Group 1 will work on the housing requirements for goats, group 2 for chicken, etc. The output of this task is a narrative report that includes the executive summary, narrative report, and photo documentations with brief captions (photos with the resource person, picture of the farm, pictures of the livestock housing, pictures of the livestock, pictures of the interviewees, and other relevant pictures. **(See worksheet for the activity which students will accomplish.)**

SUB-TOPIC 2: Feeding Management of Poultry and Livestock

1. Explicitation

Mind mapping: Students will write relevant terms/phrases on the feeding management of poultry and livestock. The students will write as many as they can.



Triad: Students will group into three. They will share what they will write with the group. After which, they will look into patterns of what they have written and present before the class.

2. Worked Example

Benchmarking: The students will watch video clips on the diet formulation and nutrition and feeding management of the livestock. Students will list down the diet formulation, nutrition, and feeding management of the livestock and will answer the guide questions.

The teacher will utilize a mind map to ignite the prior knowledge of the students. The student will work in three for them share their work. Presentation will follow. The students will benchmark farms by watching video clips about diet formulation and nutrition and feeding management of livestock. A guide question will be asked after watching a video. The teacher will show one video after the other. The teacher will ensure that the video will be processed by asking question in between play and stop.

Diet Formulation and Nutrition of Cattles https://www.youtube.com/watch?v=aaC0QP_7KXs 	**Secret Formulation of Grower Feed for Pigs in Palban's Farm** https://www.youtube.com/watch?v=xL6719ZAG7o 	**Goat Proper Feeding and Nutrition** https://www.youtube.com/watch?v=DJWb6w0HKzU 	
Feed Formulation for Chicken https://www.youtube.com/watch?v=0t80onhAwsM 		**Low cost 100kg Quail Feed Formulation** https://www.youtube.com/watch?v=CwFTnSyPHks 	

Guide Questions:

1. What are the diet formulation and nutrition, and feeding management of the livestock?
2. How do the farm owners manage the feeding of the different livestock?

Reading Resources

Feed is any materials which are processed, semi-processed or raw, intended to be fed directly to farm animals. In this way, they meet nutrient requirements to maintain life, promote growth, production and reproduction.

Feed additive refers to an ingredient/s added to the basic mixed feed. It is usually used in micro-quantities and requires careful handling and mixing. It has no nutritive value but adds quality and efficacy.

Feed ingredient is a component part of mixture making up a feed, has or ha no nutritional value in the animal's diet. E.g. plant, animal or aquatic ingredient, or organic or inorganic substances.

Feed supplement is a feed ingredients or mixture of feed ingredients to supply deficiencies in a ration or improve the nutritive balance or performance of the total mixture.

The commonly used feed ingredients that are good ***sources of energy*** include banana meal (peeled or unpeeled), barley (hulled), cassava (peeled or unpeeled), corn, oats, rice (middling paddy) sorghum, cane sugar, and wheat. The good ***sources of protein*** are: blood meal/hemoglobin powder, egg (powder, whole, spray dried), fish meal (imported and local), meat and bone meal, prok/porcine meal, hydrolyzed feather meal, shrimp meal, squid meal, black bean, canola meal, *Leucaena* leaf meal (ipil-ipil), rapeseed meal, soybean, cowpea, feed peas, green peas, lupins, maple peas, mung bean, pigeon pea (kadyos), rice bean, safflower seed,

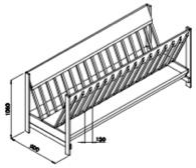
The teacher may extend one/two sessions on this lesson.

sunflower seeds, vetch seeds, white/yellow peas, guar meal. ***Non-protein nitrogen sources*** include urea, bakery by-products, cassava residue, dried spent Brewer's grain, dried Brewer's yeast, corn bran, corn germ meal, corn gluten feed, dried distillers grains with solubles, sugarcane molasses, palm kernel meal, rice bran (D1 or D2), scrap noodles, soya hulls, wheat gluten, wheat pollard. ***Dairy products*** include buttermilk powder, lactose powder, skimmed milk powder, whey powder, whole milk powder. ***Fats and oils*** include acidulated oil, coconut oil, palm kernel oil, palm oil, palm olein, soybean oil, tallow, used cooking oil. ***Feed supplements and additives having calcium and phosphorus content*** are bone meal dicalcium phosphate, monodicalcium phosphate, monocalcium phosphate, tricalcium phosphate. ***Feed supplements containing calcium*** include limestone, oyster shell. ***Feed supplements containing sodium and chlorine*** are salt, iodized salt, sodium bicarbonate. **Amino acid supplements** are DI-methionine, methionine hydroxyl analogue (MHA), L-lysine HCl, lysine sulfate, L-thereonine, L-tryptophan, L-valine. **Feed additives** include acidifying agents, anti-caking agents, anti-molds, antioxidants, dextrose anhydrous, dextrose anhydrous, enzymes, flavoring sweeteners, hormones, immune enhancers, nutritional metabolites, pellet binders, pigmenters, prebiorics, probiotics, surfactants, mycotoxin binders.

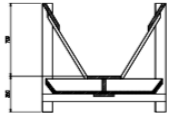
Safety precautionary measures should be done in handling feeds, feed ingredients, and feed additives to avoid biological and chemical hazards.

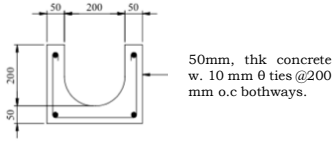
To make attractive profit and product good meat, consider the following variables: age, sex, breed, and health condition of farm animals.

Feeding Facilities for Goats/Sheep



Feeding troughs should be trapezoidal or semi-cylindrical. It should have a dept of 180mm-250 mm x 300mm. It shall be raised off the ground at least 150mm to keep the animals. Hay racks shall be diagonal or vertical slats with a minimum spacing of 130mm.





Hay racks shall be properly positioned and designed to avoid risk of injury. The following figures present the side view and front view of the feeding racks.

Front and side view

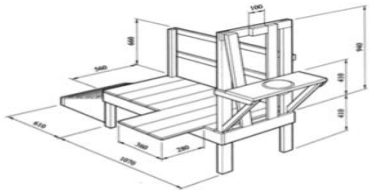
Recommend linear feed space is shown on the following table.

Animal	Weight	Feeding space (linear mm/animal)
Doe/Ewe	30	350
Doe/Ewe	50	400

Doe/Ewe	70	450
Kid/Lamb		250
Kid/Lamb		500

Water Facility

For open tank drinking system, 300 mm space is required for each 15-25 heads. For automatic watering system, 1 bowl or nipple shall be provided for every 50 heads. The watering devices shall be situated where water is easily drained. For free range, apron around the waterers shall be paved or packed with gravel at least 750mm width.



Milking Area shall be separated from where the goats are kept and shall be provided with milking stall. The milking stand is shown in the illustration.

Figure 3. Milking stand

Suggested flushing rations for ewe include good mixed of pasture of legumes and grasses, a grass pasture and 150g of wheat bran per head per day, grass pasture and 250g of grains and 450g of oil cakes, legume hay full fed and 100g of wheat bran and 150-200g of grain, and green fodder at 10% of body weight
and 150-200g of concentrate per head per day.

Suggested flushing ration for early and mid-pregnancy ewe include: graze on a good pasture, 1-2kg sorghum silage and legume hay of ½ to 1kg head per day. Add libitum supply of maize and 50g of oil cakes per head per day. Grazing on stubbles and harvested fields supplemented with 100g of oil cakes per head
per day.

Feeding rams for breeding. Rams in normal condition require some additional nutrients during the breeding season. An over-fat ram needs thinning before the breeding season. Allow rams to graze with the ewes to allow them to get same rations as the ewes. If separate feeding, it may be given 300-500g of concentrate mixture consisting of three parts of oats or barley, one part maize and one part wheat per day.

Feeding of breeding does. If the availability of pasture is good, there is no need to supplement concentrate mixture. In poor grazing condition animals may be supplemented with concentrate mixture at 150-350g of concentrate per animal per day. The digestible crude protein level of concentrate mixture used in the adult is 12%.

Feeding management can be extensive grazing, rotational grazing method, and semi-intensive method. ***Extensive grazing*** involves letting sheep or goat in the entire pasture and leaving them there for the whole season. ***Rotational grazing method*** is done when pasture land is divided by temporary fences into several sections. The animals are moved from one section to another section. Once the entire pasture is grazed, the first section will have sufficient grass cover to provide second grazing. This method controls parasitic infestations to a great extent. It also provides good quality of fodder. Further, this system lets lambs graze first and brings in ewes to finish up the feed left by the lambs. ***Semi-intensive*** combines extensive and intensive system due to limited grazing. It involves extensive management but of controlled grazing. It consists of stall feeding, shelter at night under shed and 3-5 hours daily grazing and
browsing on pasture and range.

Daily Nutrient Requirement for meat-producing goats

Nutrient	**Young Goats**		**Does (110 lb)**				**Bucks (80-120lb)**
	Weanling (30lb)	Yearling (60lb)	Pregnant (Early)	Pregnant (Late)	Lactating (Avg Milk)	Lactating (High Milk)	
Dry matter, lb	2.0	3.0	4.5	4.5	4.5	5.0	5.0
TDN, %	68	65	55	60	60	65	60
Protein, %	14	12	10	11	11	14	11
Calcium, %	0.6	0.4	0.4	0.4	0.4	0.6	0.4
Phosphorus, %	0.3	0.2	0.2	0.2	0.2	0.3	0.2

Feeding Facilities for Cattles

Feeding troughs shall be placed along the sides of the pen and should either be made of wood or concrete. It shall have horizontal rail to prevent animals from stepping the trough. The height of the horizontal rail shall be 0.7m for up to 6 months calves, while for 7 months calves is 0.9m. For yearling, heifer, dry, and milking cows is 1-2m. The inside surfaces of the feeding trough should be smooth and it should have rounded corners to facilitate cleaning. The bed of the trough should be 0.15m above the level of the apron to facilitate natural feeding stance. For calves up to one year, the dimension of the feed trough shall be 0.25m depth, 0.4m-0.65m bottom width, and 0.65-0.85m top width. For older animals, the dimension of the feed trough shall be 0.4m

depth, 0.45m-0.7m bottom width and 0.7-0.9 top width. Storage sheds for all feedstuffs such as hay, grain, mineral salt shall be provided to keep it dry, to protect from rodents and other animals.

Class, age, size or animal	Linear feeding space mm/animal
Calves (3-6 months)	45
Calves (7 months -one year)	50
Yearling, heifer, milking and dry cows, cows in maternity stall	75

Commonly feed ingredients for dairy animals

Feed Ingredients	Sources
Cereal grains	Maize, bajra, sorghum, broken rice, oats, barley wheat
Vegetable protein	Ground nut coil cake, soybean meal, sunflower oil cake, cotton seed meal, coconut meal, linseed meal, mustard cake, sesame seed meal,
Milling by products	De oiled rice brain, wheat brain, rice polish, molasses
Animal fat	Lard, tallow
Vegetable fat	Corn oil, groundnut oil, sunflower oil

Feeding dairy cow. Feeding management plays a crucial role in farm economy because feed alone constitutes 60% of the production cost of milk. The nutrient requirement should be determined for maintenance as well as for milk production to meet the fat percentage in milk and gestation. Thus, it needs computation. Dry matter from roughage should not exceed 2% of cow's live weight not should it be less than 1%. Recommended nutrient inclusions: **major minerals** include phosphorus, magnesium, sodium, potassium, and chlorine; **micro-minerals** include iron, copper, zinc, manganese, cobalt, selenium,
thyroid, fluorine and **vitamins** include Vitamin A, D, E, K, and C.

Feeding Allowances

Type of Cattle	Stage of Cattle	Green Fodder (kg/day/animal)	Dry fodder (kg/day/animal)	Concentrates (kg/day/animal)
Cow (ave weight of 250kg)	Milk yield, 5 L/day	15.00	5.00	2.00
	Milk yield, 5 10 L/day	17.50	5.50	3.00

	Milk yield, 10-15 L/day	20.00	6.00	4.00
Cow in gestation	-	15.00	5.00	4.00
Buffalo (ave weight of 400kg)	Milk yield, 5 L/day	15.00	5.00	2.50
	Milk yield, 5 10 L/day	20.00	6.00	4.00
	Milk yield, 10-15 L/day	25.00	7.00	5.00
Bull (ave weight of 300kg)	During days of work	20.00	7.00	2.00
	During days of no work	15.00	5.50	1.00

Pig Feeding Management

Swine are monogastric animals. Part of the protein diet of pigs come from animal source. They should be fed on a regular basis. Fresh feed should be put only after removal of the previous feed from the feed trough. They require 4-8kg will per day. All categories of pigs can be given small quantity of fodder or they may be pastured to graze grasses. Ad libitum feeding may be practice for weaned pigs.

Nutrient requirement of breeding stock

Type	Breed Gilts	Lactating Gilts and Sows	Young board and Adult boars
Live weight (kg)	110-250	140-250	110-250
Energy and Protein			
DE (M cal/kg)	3.3	3.3	3.3
ME (M cal/kg)	3.17	3.17	3.17
Inorganic Nutrients (%)			
Calcium	0.75	0.75	0.75
Phosphorus	0.75	0.50	0.50
Salt	0.50	0.50	0.50

Nutrient requirement of growing stock

Type	Weaning	Growing	Finishing
Live weight (kg)	5-12	12-50	50-100
Daily gain (kg)	0.30	0.50	0.60
Energy and Protein			
DE (M cal/kg)	3.5	3.5	3.3
ME (M cal/kg)	3.36	3.36	3.17
Crude Protein (%)	22	18	14

Inorganic Nutrients (%)			
Calcium	0.80	0.65	0.50
Phosphorus	0.60	0.50	0.40
Sodium	-	0.10	-
Chlorine	-	0.13	-

Other feeds used for feeding pig:

Item	Incorporation level up to (%)
Tapioca starch waste	15-20
Rubber seed cake	15
Tamarind seed roasted	20
Tea waste	20
Meat Offal	20

Feeding of boars. A breeding board requires 2-2.5kg concentrate per 100 kg weight. Greens should be provided if they raised indoor. Year-round pasture is excellent if it could provide physical exercise and valuable nutrients.

Feeding of female. The increased needs are intended for proteins, vitamins, and minerals. They gain 30-35 kg and gilts 40-45kg during pregnancy. There should be regulation of feed. Individual feeding is required. Flushing is a practice of giving extra feed to sows and gilts from 1-2 weeks prior to mating and returns to normal feeding after mating.

Feeding of farrowing sow and litter. Feed them lightly with bulky laxative feed. Bring the sow to full feeding in 10 days. Greens should be provided. Feed allowance is 2.5-3kg/100 kg body weight at rate of 0.2kg per piglet with the sow. The piglets may be provided with special nourishing diet called creep feed. **Creep feeding** is a self-feeding concentrate to piglets. This should be given when they are two weeks old. **Feeding of growing and finishing pigs.** They must be fed on a regular basis twice to thrice a day. As fattening progresses, protein percent in ration may be decreased. This period may be considered from weaning 910kg to the slaughterhouse weight of 90-100kg. **Orphan pigs.** Piglets should be immediately shifted to a foster mother when a sow dies or fails to produce milk or does not claim her pigs.

Ration of Layer Mash

Ingredients	Percentage
Yellow maize	47
Soybean meal	12
Gingelly oil cake	4
Groundnut oil cake	6

Rice polish	13
Wheat bran	4
Fish meal/dried unsalted fish	6
Dicalcium phosphate	1
Salt	0.25
Mineral mixture	1.75
Shell meal	5
Total	100.00

Day 4

3. Lesson Activity

Consulting an Agri Expert: The students will conduct an interview with an expert (farm owner, agricultural engineer, veterinarian, farm laborer and other community resources). The students will determine the feeding management of livestock in a certain farm. After which, they will create a (video) presentation on the results of their interview. The (video) presentation should consist of the following: feeding management of the expert, sample ration or food formulation, materials, and photos of the interviewee and interviewers.

D. Making Generalizations

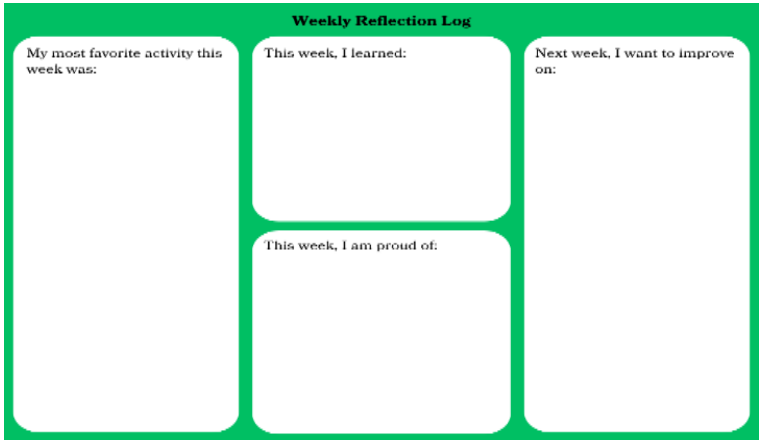
1. Learners' Takeaways

Completing the KWLS Chart: The students will revisit their initial output on KWLS chart. This time the students will now accomplish the **L and S column.** The **L column** is intended to all the learnings and insights gained from the three lessons covered. The **S column** provides way for students to determine the importance and benefits they derive from learning the lessons.

Know	Want	Learned	So what?
			

The teacher will ensure that the initial outputs of the students on KWLS are kept in order for the students to have their self-reflection on their own learning in this section.

For the reflection, the students will work on weekly reflection log to provide feedback on their own learning.

	2. Reflection on Learning The students will accomplish the weekly reflection log.  	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION				**NOTES TO TEACHERS**
A. Evaluating Learning	**1. Formative Assessment** Students will answer the following questions: 1. What are the standards of housing and feeding requirements of the poultry and livestock? 2. Why do we need to know the standards of housing and feeding requirements of poultry and livestock? **2. Homework (Optional)**			The teacher will ask the following questions to conclude the lesson. This will provide plenty of ideas and insights from the students. The teacher will integrate the SDG 11, 12 and 13 in this section.
B. Teacher's Remarks	*Note observations on any of the following areas:*	**Effective Practices**	**Problems Encountered**	The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement and other related stuff.
	strategies explored			
	materials used			

	learner engagement/ interaction			Teachers may also suggest ways to improve the different activities explored/ lesson exemplar. .
	Others			
C. Teacher's Reflection	*Reflection guide or prompt can be on:* ▪ *<u>principles behind the teaching</u>* *What principles and beliefs informed my lesson?* *Why did I teach the lesson the way I did?* ▪ *<u>students</u>* *What roles did my students play in my lesson?* *What did my students learn? How did they learn?* ▪ *<u>ways forward</u>* *What could I have done differently?* *What can I explore in the next lesson?*			Teacher's reflection in every lesson conducted/ facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.