EaD Comprehensive Lesson Plans

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BASIC 9

WEEKLY LESSON PLAN – WEEK 4

Strand:	Cycles		**Sub-Strand:**	Animal Production	
Content Standard:	B9.2.4.1 Demonstrate understanding of the preparation of feed for domestic and commercial animals B9.2.4.2 Demonstrate skills and knowledge of feeding domestic and commercial animals				
Indicator (s)	B9.2.4.1.1 List the ingredients and the method of preparation of different feed for different domestic and commercial animals B9.2.4.2.1 Describe and select appropriate feed for different domestic and commercial animals		**Performance Indicator:** Learners can identify feed consumed by each category of animals.		
Week Ending	02-02-2024				
Class	B.S.9	**Class Size:**		**Duration:**	
Subject	Science				
Reference	Science Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook.				
Teaching / Learning Resources	Poster, Pictures, videos.		**Core Competencies:**	• Critical Thinking and Problem Solving • Communication and Collaboration.	

DAY/DATE	**PHASE 1 : STARTER**	**PHASE 2: MAIN**	**PHASE 3: REFLECTION**
TUESDAY	Discuss with the Learners about the meanings of keywords and terminologies in the lesson. **Terminologies;** • Supplements • Ingredients • animal husbandry • predominant • domestic • concentrates • livestock • Poultry	1. Briefly explain the concept of "Animal feed" to the Learners. 2. Show Learners a video of how animal feed is prepared. 3. Demonstrate how farmers prepare feed for different domestic and commercial animals with ingredients 4. Assist Learners to identify the required nutrients for preparing animal feed. 5. Learners brainstorm to practice the process of preparing feed for different domestic and commercial animals with the ingredient Four basic steps to producing animal food 1. **Receive raw ingredients** Feed mills receive raw ingredients from suppliers. Upon arrival, the ingredients are weighed, tested and analyzed for various nutrients and to	Through questions and answers, conclude the lesson. **Exercise;** 1. What is Animal Feed? 2. State 5 nutrients needed in preparing Animal feed.

		ensure their quality and safety. 2. **Create a formula** Nutritionists work side-by-side with scientists to formulate nutritionally sound and balanced diets for livestock, poultry, aquaculture and pets. This is a complex process, as every species has different nutritional requirements. 3. **Mix ingredients** Once the formula is determined, the mill mixes the ingredients to create a finished product. 4. **Package and label** Manufacturers determine the best way to ship the product. If it is prepared for retail, it will be "bagged and tagged," or placed into a bag with a label that includes the product's purpose, ingredients and instructions. If the product is prepared for commercial use, it will be shipped in bulk. Ingredients There are more than 900 safe agricultural ingredients and coproducts **approved for use** in animal food in the United States, including: • Corn • Soybean meal • Dried and wet distillers' grains • Bakery meal • Corn gluten feed • Cottonseed meal • Wheat midds • Grain sorghum • Soybean hulls • Oats • Amino acids • Vitamins • Minerals • Probiotics • Enzymes • Animal protein products • Fats and oils • Marine products	

		• Milk products • Wheat products • Flavors	
THURSDAY	Engage Learners in a matching game to match animal feed with their ingredients and methods of preparing.	1. Learners in small groups to discuss and compile a list of feed commonly consumed by the different domestic and commercial animals in the environment. 2. Discuss with the Learners about the effect of environment on nutrient requirements of domestic animals**.** 3. Assist Learners to identify 5 types of animal feed **Effects of environment on nutrient requirements of domestic Animals;** 1. *Thermal radiation*. Thermal radiation received by an animal has two primary sources: solar radiation (direct, or reflected from clouds and surrounding surfaces) and terrestrial or long-wave radiation (emitted from all surfaces constituting the surroundings). The net impact of thermal radiation on an animal depends on the difference between the combined solar and long-wave radiation received and the long-wave radiation emitted by the animal. 2. *Humidity. The* air's moisture content influences an animal's heat balance, particularly in warm or hot environments where evaporative heat loss is crucial to homeothermy. The higher the ambient vapor pressure, the lower the vapor-pressure gradient from the skin or respiratory tract to the air, and hence the lower the rate of evaporation 3. *Air movement*. Air movement affects rate of convective and evaporative heat exchange. However, the magnitude of this effect is moderated somewhat by the reduction in skin temperature because vasoconstriction reduces the animal—environmental temperature gradient.	Reflect on the effects of environment on nutrients requirement of domestic animals. **Exercise** Explain 5 types of animal feed.

4. *Contact surfaces*. The nature and temperature of the floor or other contact surfaces determines rate of conductive heat flow from an animal.

5. *Precipitation*. Animals are sometimes exposed to inclement weather. A combination of low temperature, wind, and rain or wet snow can adversely affect an animal's heat balance. Water accumulates in an animal's pelage, displacing still air, thereby reducing external insulation. In addition, rain may flatten the pelage, thereby reducing its depth and thus insulative value.

Types of Animal Feed

Basics

The commercial sale and industrial production of animal feeds has a history dating back as far as the 1800s. It was during this time period that the significance of balanced diets and nutrients in the diets of humans and animals was beginning to make steam as a mainstream ideology. One of the first big feed producers, which was the first to manufacture corn gluten feed, was called Purina and was established in 1882. It expanded its operations near the beginning of the 20th century and still operates today. In modern times, there are three major types of feed used by farmers, each with their own uses and benefits.

Compound Feed

One of the most common types of feeds used by commercial farmers is compound feed. Also known as feedstuffs, they're blends of various additives and raw materials that are formulated to specifically suit the intended animal. They're often produced as pellets or crumbles. Like modern vitamins with humans, they can be used to either satisfy the complete nutritional requirements of their target animals or as a supplement to other staples of the animals' diets. They're often complemented with extra vitamins and minerals. It is produced in astronomically large amounts, with over 600 million tons produced annually on a global scale.

		<u>Fodder</u> Fodder, another type of animal feed, is used primarily to feed domesticated livestock such as goats, sheep, cattle, horses and pigs. It is typically composed of plant matter like hay, straw and grains. The term is used to describe these plants being given to the animals after the plants have been harvested, which contrasts with forage, as will be explained below. Meat and bone meal are occasionally mixed into fodder, which has been frequently blamed for the spread of mad cow disease and has been banned in many countries. <u>Forage</u> Unlike fodder, which is harvested plant matter fed to animals in bunches or bales, forage is plant matter that is literally grown in a confined area with the intention of having it grazed upon by various livestock. It can be composed of legumes, grasses, corn, oats, alfalfa and other edible plants. The act of eating or grazing upon the plant matter is known as foraging. <u>Revenue</u> The feed industry is a major economical component of many countries. According to the AFIA (American Feed Industry Association), an average of $20 billion is annually spent on feed ingredients. The feed industry is also the largest purchaser of corn and soybean meal.	
FRIDAY	Review Learners knowledge on the types of animal feed.	1. Show Pictures of different categories of animals to the Learners. 2. Assist Learners to identify examples of feed consumed by each category of domestic and commercial animals. 3. Discuss with the Learners about the importance of recording kinds of feed used to feed domestic and commercial animals on farms over a period of time. **Roughages** Roughages are a form of animal feed that consists of high-enriched fiber. It contains forage crop, stems, and other plant-based leaves feedstuff that add nutritive value to various livestock. A number of roughage feeds are available for	Learners in small groups to discuss and identify named samples of feed for three categories of domestic and commercial animals **Exercise;** Write 5 feed consumed by each of the following; i. Ruminants ii. Poultry iii. monogastrics

		feeding livestock in which the most common ones are, **Pasture Grasses** Roughages are essential animal feedstuffs, and pasture is the most common type of roughage. These grasses are vegetation types that grow from self-seeded grasses, legumes, and other plants. And grazing animals can eat hundreds of these different grasses, shrubs, and trees as feed. During the growth season, pasture plants provide animals with a steady food supply. They're a less expensive option to harvest, process, and transport. Just as important, some nutrients in plants (like nitrogen and amino acids) stay in the plant longer than others (like phosphorus and calcium). **Hay** Hay is dried grass and legumes that provide your animal with various nutrients. The proteins in hay help strengthen animals tissue, while the carbohydrates provide sustained energy. It serves as the primary food source for many animals in confinement, such as horses, cows, and feedlot cattle. More so, animals can enjoy different variations of hay as a meal if combined with other foods. However, when mixed with bone meal or meat, these harvested hays can spread mad cow disease. That is why many countries have banned the use of harvested hays or other edible plants combined with meat and even fish meal. **Silage**	

		Silage refers to the practice of preserving green plants by storing them slightly fermented in airtight containers. The key benefit of silage is that it is a truly sustainable, environmentally friendly food storage system. It protects and preserves the harvest, keeping it fresh and nutrient-rich for later use. **Root Crops** Root crops are mainly human food that the feed industry doesn't really use as livestock feeds. But the common root crops such as potatoes, beets, and cassava are used for animal and human food consumption. In general, root crops contain a lot of energy and fewer nutrient contents than animal feed. As a result, they are frequently fed to the barn and stable animals as dietary supplements	

Name of Teacher: **School:** **District:**