Central School

Home School Package

Year : 2020

AGRICULTURE SCIENCE

YEAR 9

CONTINUED

WEEKS 1,2,3

Term 2

TEACHER MR RAM

LESSON Plan

Teacher	Name : Mr Ram Subject : Agriculture
Date & Week	Week : 1 Term 2 Lesson 1
	UNIT TWO : CATTLE (please ensure you complete notes on cocoa before starting cattle) Lesson no : 1 Topic : Cattle Sub topic : An introduction
Learning outcomes	Objectives: At the end of this lesson studentsshould be able to: 1. List 3 reasons why we raise cattle 2. List 3 sub products of cattle 3. Briefly tell who raises acttle 4. draw and label the external features of catle 5. Name the different stages of cattle and their names
Introduction	This is unit 2. Students must rule off and indicate dates before starting. The raising of cattle in Vanuatu plays a great role. We will study in depth about cattle in Vanuatu

	Catch phrase for the lesson **Cattle raising for reasons and their benefits**
Learners notes	Why keep cattle ? 1. Beef 2. Milk 3. Hide 4. Veal 5. Grazing under coconuts and free range Sub products : 1. Butter 2. Bone meal 3. Cheese 4. Protein concentrates ANATOMY OF EXTERNAL PARTS FIG : I COW PARTS. Different names given to cattle . Bull—mature male over 2 years . Cow—mature female after first calving . Bullock—mature male or castrated male . Steer—young male never mated . Heifer—young female before mating . Calf-- young of a cow . Daidy cow—milking cows

Visual aids	Only use blue or black pens to write
Exercises	1.List 3 reasons for raising cattle in vanuatu 2. Draw and label the diagram of cattle and label the external features -
Assignment	Write all notes and diagrams
Assessment	To be done in class
References	AGRICULTURE IN VANUATU---CATTLE PAGES 4&5

Parents' task

HOMESCHOOLING

WEEKLY CHECKLIST For Parents:

Term: 2   Week number 1   Date...... to...... Month: ....

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
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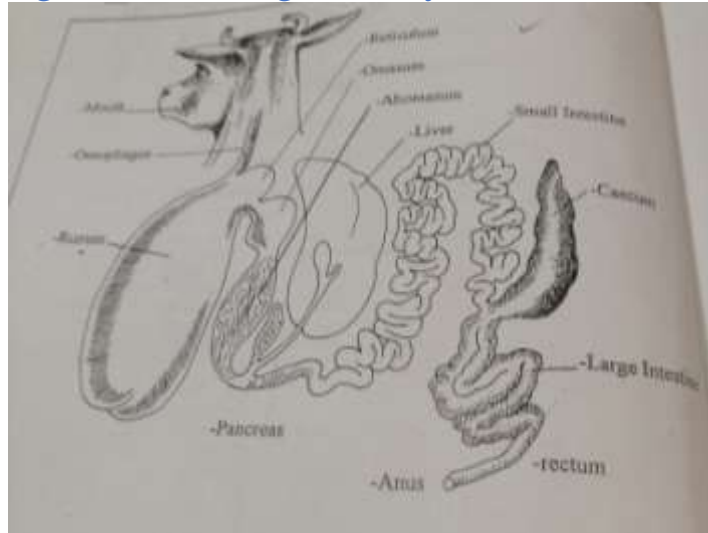|	
Date & Week	Week : 1 Term 2
	Lesson no : 2 Topic :Cattle Sub topic :The digestive system, functions of the digestive system.
Learning outcomes	Objectives: At the end of this lesson students should be able to: 1. Draw the digestive system 2. Correctly label the digestive system 3. Briefly describe the functions of the digestive system
Introduction	The animal under study is a ruminant animal thus it chews its food twice. The digestive system is different from man.It will be interesting to see how animals digest their food.

	Catch phrase for the lesson Ruminant animals with four stomachs
Learners notes 	The diagram of the digestive system Functions of parts of the Digestive system 1. Mouth : chews the food and saliva is added to soften the food 2. Oesophagus : carries food to the stomach 3. Stomach : food is chewed,stored and grinded. Ruminants have 4 stomachs. 4. Rumen : largest stomach.The food is digested here by micro- organisms It is a zone of huge churning actions. 5. Reticulum : sotrs out large and small particles. Large particles remain the rumen and small ones passes to the omasum. 6. Rumination : cattle ruminate in an undisturbed position either standing up or sitting.The gras or cud passes from the rumen to the reticulum and goes back to the mouth. The cow will rechew the cud and when is broken down, it is swallowed. Food goes to the omasum. 7. Omasum : this is a place of dry matter and water absorption.The water is used to convey food to other parts. 8. Abomasum : this is where food is secretd by

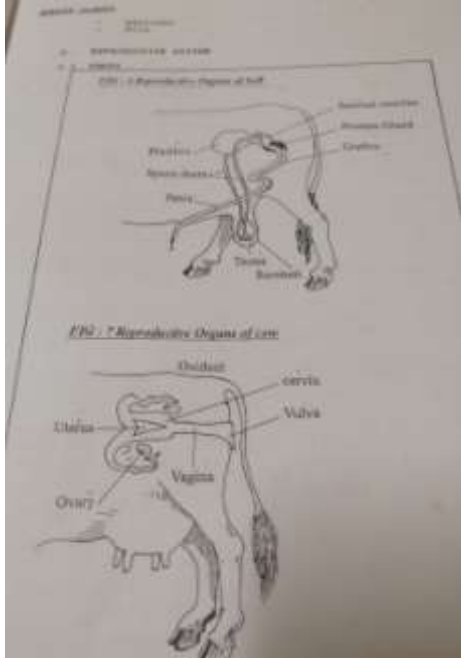|	
	gastric juice to digest the food. 9. Small intestine :nutrients are absorbed here. Most of the nutrients are are digested and absorbed. 10. Large intestine : water is reabsorbed to prepare for waste products. 11. Caecum : Non –digestible parts of the food is fermented by microbes. 12.Rectum/ anus : undigested food is expelled to the outside.
Visual aids	Only use blue or black pen to write
Exercises	1. Draw the digestive system of cattle and label the parts 2.List the functions af all the parts labelled -
Assignment	Write down all notes and draw the diagrams in your books
Assessment	To be done in class
References	AGRICULTURE IN VANUATU.CATTLE Pages 6,7& 8

Parents' task
HOMESCHOOLING

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Date & Week	Week : 1 Term 2
	Lesson no :3 Topic : Cattle Sub topic : Reproductive system of a male and female cattle
Learning	Objectives: At the end of this lesson students should be able to: 1. Draw and clearly the parts of a male farm animal 2. Draw and clearly label the parts of a female farm animal

outcomes	3. Briefly list the functions of the parts of a male animal 4. Briefly list the functions of a female farm animal
Introduction	In this lesson students will learn about the reproductive systems of a male and a female farm animal and learn the functions of the various parts.
	Catch phrase for the lesson Reproduction for a high producing animal
Learners notes	Functions of the parts of reproductive system of a male animal 1. Testes : two oval structures which produce sperm. 2. Scrotum : a sac in which the testes lie. 3. Epididymis : sperms are stored in here 4. Sperm ducts (Seminal ducts) : carry sperms from the testes to the organ of deposition. 5. Bladder : urine is stored here ready for removal 6. Urethra : a tube which carries the urine from the bladder to the outside. 7. Prostrate glands : prostrate gland helps in the movement of seminal fluid into the urethra during ejaculation. 8. Seminal vesicles :stores the fluid which make the sperms. 9. Penis : The penis is the sexual organ which helps to deposit sperms into the female reproductive tract.The penis is also used to expel urine to the outside. Functions of the parts of the reproductive system of a female farm animal 1. Ovaries : two ovaries where the ova or the egg develop.They release the egg during ovulation. 2. Uterus :this is where the calf develops until

	calving. 3. Oviduct or the fallopian tube carries sperm to the eggs and carries the egg from the ovary 4. Cervix : this is the opening of the uterus and allows sperms to enter the uterus during copulation. 5.Vagina this is where sperms are deposited during mating or copulation.The function of the vagin ais to recieve the sperms ,to expell urine and to expel the calf during calving. 6. Vulva : is outer opening of the vagina. It helps to protect the uterus.
Visual aids	Only use blue or black pen
Exercises	Practise drawing both the male and female reproduction systems and label correctly.Learn the functions. -

Assignment	
  Assessment	Draw the male and female reproductive system and label the parts
    References	AGRICULTURE IN VANUATU CATTLE Pages9 & 10

Parents' task

HOMESCHOOLING

WEEKLY CHECKLIST For Parents:
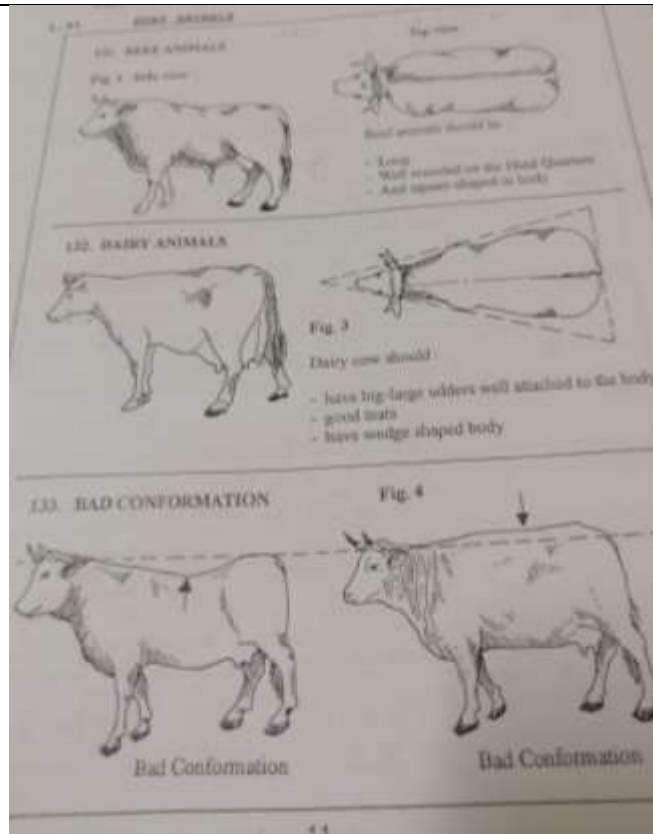
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Date & Week	Week :2 Term 2
	Lesson no : 1 Topic : Cattle Sub topic : Animal conformation and Starting a cattle project.
Learning outcomes	Objectives: At the end of this lesson students should be able to: 1. Define animal conformation 2. Identify animals with good conformation 3. Briefly describe seven factors when starting a cattle project.
Introduction	In this lesson we will look at some animals and see their conformation. We will also lok at 7 factors when starting a cattle project
	Catch phrase for the lesson Conformation is detrmined by appearance of an animal.

Learners notes

Starting a cattle project
Seven factors to consider before starting a cattle project

1. Land : The land must have the following features. Is the land- fertile or poor,topography- is it flat or hilly,vegetation-is there pasture or thick bush , land tenure – is there a secure lease or custom land
2. Labour : wages,amount of work ,is labour available,needs for labour,family labour.
3.Location : access to the market and the farm.
4. Market : access to market, prices, access to abbatoir
5. Water : is water available, climate, water supply ,source, water conditions.
6. Management : Loan from bank, skill of farmer, any advisor, who, what and how to manage.
7. Finance : loan to be sought, is the money enough, how much money does he have to start the business.

Visual aids	<u>Use only blue or black to write</u>
Exercises	<u>By looking at the appearance of animals be able to know the conformation. Learn the 7 factors before starting a cattle project.</u> -
Assignment	<u>Take down all notes provided in your books</u>
Assessment	To be done in class

References	AGRICULTURE IN VANUATU
	   cattle
	     Pages 11& 12

WEEKLY CHECKLIST For Parents:

Term: 2   Week number 1   Date...... to...... Month: ....

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
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Date & Week	Week : 2 Term 2
	Lesson no : 2 Topic : Cattle Sub topic : Feed for animals
	Objectives: At the end of this lesson students should be able to: 1. define animal feeds 2. know the 4 types of food and why it is fed

Learning outcomes	3. explain the needs for water for animals. 4. give names of 5 pastures,5 legumes 5. briefly describe what are imported feeds
Introduction	In this lesson students will learn the feeds of animals.They will learn about animal requirements,importances of pasture and water for animals.
	Catch phrase for the lesson Animals are what they eat
Learners notes	Definition of feed : animal feed are grasses, legumes, concentrate feeds and water. Why do we feed animals ? 1. To keep their body machinery working 2. To produce milk, meat and new cells 3. For growth 4. For females to feed the fœtus(growingcalf inside) Types of Food Animals need energy feed : a. to provide warmth b. body functions c. walking Animals need protein foods : a. to build up their bodies b. for growth of new tissues Animals need vitamins : a. for cell division b. to protect animals from diseases Animals need minerals for : Many body functions Animals need water : a. for life b. to keep their body cool c. for excretion of waste products

	FATS There are 2 types of fats. Yellow fat is not accepted for export.Animals consume plants which have too much carotene.(green substance in plants) **PASTURES** An area of land covered with grasses and legumes for animals. Good feeds lead to good performance. **GRASSES**　　　　　**LEGUMES** 1. Carpet grass　　　1. Leucaena 2. T- grass　　　　　2. Glycine 3. Blue grass　　　　3. Desmodium 4. Para grass　　　　4. Stylo 5. Sabi grass　　　　5. Centro 　IMPORTED FEEDS(CONCENTRATE FEEDS) Contain high percent of proteins because water is removed.these can be bought in stores such as Vanuatu Agr Supplies eg copra meal, wheat meal, blood and bone meal .
Visual aids	<u>Use blue or black pen to write</u>
Exercises	<u>1. List 3 reasons for feeding animals</u> <u>2. List 3 reasons for providing cool, clean drnking water to anmals</u>
Assignment	<u>Write all notesin your exercise books</u>
Assessment	To be done in class
	AGRICULTURE IN VANUATU

	Pages 13& 14
References	

WEEKLY CHECKLIST For Parents:

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Date & Week	Week :2 Term 2
Title	Lesson No : 3 Topic : Cattle Sub topic : Pasture Management
Learning outcomes	Objectives At the end of this lesson students should be able to: 1. briefly explain how pasture is established 2. define eeds 3. name 5 weeds 4. define and briefly explain Stocking rate 5. briefly explain the two methods of pasture propagation
Introduction	In this lesson students will be able to learn how pasture is managed,how weed is controlled,maintaining stock control and vegetative propagation.
	Catch phrase for the lesson Pasture mangement
Learners notes	Establishment of pasture - Bush clearing - Adequate supply of quality planting material - Adequate planting, sowing, growing - Checking growth andweed control - No grazing until full ground cover is achieved Grazing Management

- First year light grazing
- Grasses must be 30 cm high
- Never overgraze

WEEDCONTROL

Definition of weed : plants growing where it is not wanted

Weeds are controlled byhand or weedicides

STOCKING RATE

Definition : the numbe of animals growing in a unit area

High stocking rate leads to overgrazing.Stocking rate depends on the age of animals, density, and season

Over grazing leads to soil erosion, soil compaction, and bullying.

Steps in preparation of land

1. Bush clearing using axe, bush knife, burning, clearing bush and buldozers
2. Land preparation plough the land and get the soil to a fine tilth. Planting can be done by using seeds and cuttings.
3. Plantingof pasture and legumes – by broadcasting or cuttings

Vegetative Propagation

Using parts of a plant eg stems, leaves, and roots. Ensure correct spacing and depth of planting.

Names of weeds, pastures and legumes

WEEDS	PASTURES	LEGUMES
Nangalat	carpet grass	Leucaena
Pico	Blue grass	Stylo
Lantana	Para grass	Centro
Hibiscus burr	Signal grass	Glycine
Nasasa	Sabi grass	Desmodium

Visual aids	Use blue or black pen
Exercises	1. List 5 steps in establishing good pasture 2. Name 5 grasses, 5 legumes and 5 weeds of pastures -
Assignment	Write all notes in your books
Assessment	To be done in class

References	AGRICULTURE IN VANUATU
	    CATTLE
	      Pages 14, 15, & 16

Parents' task
HOMESCHOOLING

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Term: 2   Week number 1   Date...... to...... Month: ....

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Date & Week	Week 3 Term 2 Lesson 1
	Topic : cattle Sub topic : BREEDING
Learning outcomes	In order to improve the herd the following factors must be borne in mind: growth rate Conformation Resistance to pests / diseases Fertility Feed conversion ratio Resistance to climate Farmers can improve the off_ springs by introducing a new blood calle a new breed.This new blood is called a Hybrid. It will involve A local breed(poor breed) Improved breed (imported)

Methods of breeding :
Cross breeding
Inbreeding
Artificial Insemination
Natural breeding
Other factors to consider:
Pasture: improved and good quality
Good herd
sanitation

Exercises	1. List 5 factors to consider when you want to improve animal breeding 2. Define the term hybrid
Assignment	Write all notes provided
Assessment	To be done in class
	AGRICULTURE IN VANUATU CATTLE Pages27

References	

Parents' task
HOMESCHOOLING

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Date & Week	Week : 3 Term 2
Title	Lesson no : 2 Topic : Cattle Sub topic : Feed for animals
Learning outcomes	Objectives: At the end of this lesson students should be able to: 1. define animal feeds 2. know the 4 types of food and why it is fed 3. explain the needs for water for animals. 4. give names of 5 pastures,5 legumes 5. briefly describe what are imported feeds
Introduction	In this lesson students will learn the feeds of animals.They will learn about animal requirements,importances of pasture and water for animals.
	Catch phrase for the lesson Animals are what they eat
Learners notes	Definition of feed : animal feed are grasses, legumes, concentrate feeds and water. Why do we feed animals ? 1. To keep their body machinery working 2. To produce milk, meat and new cells 3. For growth 4. For females to feed the fœtus(growingcalf inside) Types of Food Animals need energy feed : a. to provide warmth b. body functions c. walking Animals need protein foods :

a. to build up their bodies
b. for growth of new tissues
Animals need vitamins :
a. for cell division
b. to protect animals from diseases
Animals need minerals for :
Many body functions
Animals need water :
a. for life
b. to keep their body cool
c. for excretion of waste products

FATS

There are 2 types of fats. Yellow fat is not accepted for export.Animals consume plants which have too much carotene.(green substance in plants)

PASTURES

An area of land covered with grasses and legumes for animals. Good feeds lead to good performance.

GRASSES	LEGUMES
1. Carpet grass	1. Leucaena
2. T- grass	2. Glycine
3. Blue grass	3. Desmodium
4. Para grass	4. Stylo
5. Sabi grass	5. Centro

IMPORTED FEEDS(CONCENTRATE FEEDS)

Contain high percent of proteins because water is removed.these can be bought in stores such as Vanuatu Agr Supplies eg copra meal, wheat meal, blood and bone meal .

Visual aids

Use blue or black pen to write

Exercises

1. List 3 reasons for feeding animals
2. Give 3 resons for providing water to animals
3. Name 2 types of feeds and briefly explain

Assignment	Write all notes in your exercise books
Assessment	To be done in class

References	AGRICULTURE IN VANUATU
	
	AGRICULTURE IN VANUATU
	    CATTLE
	        Pages 13& 14

WEEKLY CHECKLIST For Parents:

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 Date & Week	Week 3 Term 2 Lesson 3
	Title : Cattle Sub title : Breeds
 Learning outcomes	At the end of this lesson students should be able to: 1. list the characteristics of limousine,Brahmin,Herefords,Shorthorn and dairy breeds Jerseys and Friesians 2. Know what are hybrids
 Introduction	As already discussed earlier,there are over 20 breeds of cattle in Vanuatu. We must know the characteristics of each breed.
	Breeds determine production levels
	1. Limousin :dark yellow,brown colour,head short & broad,deep body ,long legs and good quality meat 2. Brahmin : humped animals,heat tolerant, disease resistant,long head, drooping ears and very fastgrowing breed

Learners notes	3. Herefords : red colour, white hair on face to the throat feet and tail
	4. Shorthorn : big animal,shotr horns,dark red in colour and is fast growing.
	DAIRY CATTLE
	a) Jersey : known for high butter fat,fawn to brown colour and vary good conformation
	b) Friesians : known for high milk production,colour white and black,very large udders and deep body
	HYBRIDS :are animals obtained by crossing two different breeds.eg Brahmin and Shorthorn
	                    Brahmin and Brangus
	                    Brahmin and Bradford.

Visual aids	Laptop
Exercises	1. List 5 differences between Brahmin, Hereford and Limousin 2. Define hybrids 3. Differentiate between jerseys and Friesians
Assignment	<u>Take down all notes and diagrams in your note books</u>
Assessment	To be done in class
References	AGRICULTURE IN VANUATU CATTLE Pages 30-- 31

WEEKLY CHECKLIST For Parents:

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Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
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