



## SECOND TERM E-LEARNING NOTE

**SUBJECT: AGRICULTURAL SCIENCE**

**CLASS: JS 3**

### SCHEME OF WORK

WEEK	TOPIC
1.	Revision of Last Term's Work
2 - 3	Agriculture in the Stock Exchange
4 - 5	Export Promotion in Agriculture
6 - 7	Nigerian Vegetation
8.	Propagation of Crops
9.	Revision
10.	Examination

### REFERENCE BOOKS

Junior Secondary Agriculture for Nigerian Schools Book 3, By Anthony Y. Etal  
Prescribed Agriculture Science for Junior Schools by S.A. Omoniyi Etal

#### WEEK ONE

**DATE:** \_\_\_\_\_

#### TOPIC: REVISION OF LAST TERM'S WORK CONTENT

- Answers to last term's objective questions
- Answers to last term's theory questions

#### WEEK TWO AND THREE

**DATE:** \_\_\_\_\_

#### TOPIC: AGRICULTURE IN STOCK EXCHANGE CONTENT

- Meaning of Stock Exchange.
- Meaning of Stock, Stock Brokers, Shareholders.
- Rights of Stockholders of Companies.
- Importance of stock exchange in agriculture

#### MEANING OF STOCK EXCHANGE

A Stock exchange is an organization that provides a market place where investors may buy and sell shares of a wide range of companies. It is a market where sales and purchase of securities takes place.

#### SOME TERMS USED IN STOCK EXCHANGE

**Shares:** this is a unit of stock. It is an indivisible unit of capital that expresses the ownership relationship between the company and the holder.

**Stock:** This is the money called capital raised by a corporations or organizations through the sale and distribution of parts or all of the enterprise to several part owners.



**Stockholders or Shareholders:** These are potential buyers who legally own one or more shares of stock of a joint stock company.

**Stock Brokers:** These are the representatives of individual shareholders which are licensed to buy and sell of company shares

### **EVALUATION**

1. What is Stock Exchange?
2. Explain the following
  - A. Stock
  - B. Shareholders
  - C. Stockbrokers

### **PRIVILEGE TO RIGHTS OF STOCKHOLDERS**

1. They are entitled to vote during the election of the board of directors
2. They are entitled to share in the distribution of the company's profit
3. They are entitled to purchase new shares of the company
4. They are entitled to purchase the company assets when it becomes financially unviable

Examples of Agric Business Enterprises, whose shares are traded on the Nigeria Stock Exchange NSE are;

1. Livestock Feeds Plc
2. Nigerian Breweries Plc
3. Nestle Nigeria Plc
4. Nigerian Bottling Co. Plc
5. Cadbury Nigeria Plc
6. Unilever Nigeria Plc
7. Flour Mills of Nigeria Plc
8. Dunlop Nigeria Plc
9. Ecobank Nigeria Plc

### **EVALUATION**

1. List four privileges of Stockholders
2. List six Agric business enterprises whose share are traded in NSE

### **IMPORTANCE OF STOCK EXCHANGE IN AGRICULTURE**

1. **Raising Capital for Agricbusiness:** Agricultural enterprises can raise money through offering shares for sale to the general public in the stock exchange
2. **Redistribution of Wealth:** When businesses in which farmers invested their money through purchase of shares declare profit, such investors share on the profit and wealth of these businesses through their stock prices and dividends
3. **Corporate Governance:** Agricultural enterprises operating under the stock exchange usually have more improved management standards and efficiency records than privately owned enterprises.
4. **Creates Investment Opportunity for small investors:** Investing in shares is open to large and small scale farmers because individuals buy the number of shares that they can afford. Therefore both small holder farmers and commercial farmers invest in the same enterprise and enjoy the some privileges and rate of returns.



5. Indicator of the State of Economy: Shares prices tend to rise or remain stable when companies and the economy show signs of stability and growth, a depresses economy with financial crisis may lead to crashing of the stock market. Therefore the movement of the share prices can serve as an indicator of the state of a national economy.

### GENERAL EVALUATION

1. What is Stock Exchange?
2. Define the following terms A. Stock B. Shareholders C. Stockbrokers
3. List four privileges of Stockholders.
4. List five Agric business enterprises whose shares are traded on NSE.
5. List five importance of stock exchange in Agriculture.

### READING ASSIGNMENT

Answer all revision questions on page 63 of Junior Secondary Agriculture 3 for Nigerian Schools.

### WEEKEND ASSIGNMENT

1. The following are agribusiness enterprises except A. livestock feed plc B. Nestle Nigeria Plc C. Cadbury Nigeria Plc D. Mobil Oil Nigeria Plc
2. One unit of stock is called \_\_\_\_ A. a bank B. a share C. a tens D. a hundred
3. The \_\_\_\_ represents the potential buyers and sellers in a stock exchange A. stock holders B. stock buyer C. stock seller D. stockbroker
4. Stock Exchange can help in \_\_\_\_\_ of wealth A. gathering B. selling C. redistribution D. buying
5. Stock Exchange can be an indicator of the state of \_\_\_\_ A. Nigeria B. Africa C. Economy D. finance

### THEORY

1. What are the things needed to be done by a company that wishes to enlist on the Nigerian stock exchange?
2. What does IPO mean?
3. a. What is Stock Exchange?  
b. Define: (i) Stock (ii) Shareholders (iii) Stockbrokers
4. a. List five Agric business enterprises whose share are traded in NSE  
b. List five importance of stock exchange in Agriculture

### WEEK FOUR AND FIVE

DATE \_\_\_\_\_

### TOPIC: EXPORT PROMOTION IN AGRICULTURE

#### CONTENT

- Meaning of Export Promotion
- Activities of Export Promotion
- Examples of Nigeria Export Promotion
- Importance of export promotion

### MEANING OF EXPORT PROMOTION



The meaning of Export Promotion in Agriculture is a set of activities that are directed at increasing the sales of agricultural products to other countries. These activities include:

1. Identification of products and markets
2. Location of new investment opportunities
3. Provision of trade information
4. Provision of support services e.g assistance with export procedures, product quality, export financing, transportation etc
5. Organising trade fairs and trade missions

Trade fairs are exhibitions organized to bring together producers and buyers in an atmosphere conducive to transact business

Trade missions consist of group of persons (government representatives and delegates of private business sector) who visit a foreign country with the aim of promoting trade.

Export promotions are responsibilities of organisations referred to as **Trade Promotion Organization (TPO)**. NEPC Nigerian export promotion council is the federal government agency responsible for promoting trade in Nigerian goods. Therefore Nigerian TPO is NEPC. NEPC was established through promulgation of the Nigerian Export Promotion Act No 26 of 1976 and inaugurated in March 1977.

The Act was however amended in 1979, 1986, 1988 and 1992 to enhance its performance, minimize bureaucracy and increase its autonomy in dealing with members of organized private sectors involved in exportation.

## **EVALUATION**

1. What is Export Promotion?
2. List three activities of export promotion.

List of some Agricultural Export products exported from Nigeria are: cassava, cashew nut, charcoal, chillies, cocoa, beans, coffee, cotton lint, fish, ginger, groundnut, gum Arabic, horns, kolanut, poultry, rubber, sesame seed, sheanuts, shrimps, skins, snails, tobacco, vegetable oil, wheat pellets, yam, grasscutter.

## **PROCESSED FOODS, VEGETABLES AND SPICES**

They are: ginger, garlic, ukazi, cassava flour, garri, locust beans, yam flour, plantain flour, ground rice, ground melon, dehydrated vegetables.

## **HORTICULTURE PRODUCTS**

Okro, mangetout (French beans), chillies, mangoes, pineapples, sugar cane, cut-live-flowers.

## **IMPORTANCE OF EXPORT PROMOTION**

1. It provides employment opportunities and means of livelihoods to workers in the production, processing, transportation and export industries
2. It provides foreign exchange for the exporter and the country
3. It increases farmers income
4. It encourages bilateral and multilateral trade relationship among nations of the world



### **EXPORT PROHIBITIONS**

This is aimed at regulating export trade and protecting natural and agricultural resources from exploitation. According to the Nigerian Customs Service, the following produce are prohibited from export;

1. Wet blue and all unfinished leather
2. Unprocessed rubber latex and lumps
3. Wild life animals classified as endangered species and their products.

### **EVALUATION**

1. What is Export Promotion?
2. What is trade fair?

### **GENERAL EVALUATION**

1. What is trade mission?
2. List three horticultural export crops.
3. List three importance of export promotion.
4. What is the function of NEPC?
5. List two export prohibitions.

### **READING ASSIGNMENT**

Answer all revision questions on page 76 of Junior Secondary Agriculture 3 for Nigerian Schools.

### **WEEKEND ASSIGNMENT**

1. The third largest exporter of ginger in the world is \_\_\_\_\_. A. China B. India C. Nigeria D. Ghana
2. The following are cocoa producing states in Nigeria except A. Ondo B. Osun C. Delta D. Kano
3. The major product which is obtained in cassava is \_\_\_\_\_. A. protein B. vitamins C. roughages D. starch
4. Glycine max is the botanical name of \_\_\_\_\_. A. cowpea B. soya bean C. pigeon pea D. peanut
5. Sesame seed is predominantly grown in \_\_\_\_\_ state of Nigeria A. Ebonyi B. Kwara C. Jigawa D. Borno

### **THEORY**

1. a. What is export promotion?  
b. List three activities in export promotion.
2. a. List four importance of export promotion.  
b. List two export prohibitions in Nigeria.

### **WEEKS SIX AND SEVEN**

**DATE** \_\_\_\_\_

### **TOPIC: NIGERIA VEGETATION**

### **CONTENT**

1. Meaning of Vegetation



2. Types of Vegetation
3. Importance/uses of Vegetation resources in Nigeria

### **MEANING OF VEGETATION**

Vegetation is the plant cover of the earth surface; it is in form of trees, shrubs, grasses and legumes.

### **NIGERIAN VEGETATION**

Nigerian Vegetation is made up of three types, there are:

- A. Forest vegetation (possesses significant tree cover)
- B. Savanna vegetation (possesses insignificant tree cover, it has scattered trees with grasses in between)
- C. Montane vegetation (found in mountain areas with high proportion of grasses).

**FOREST VEGETATION:** Forest vegetation is made up of tall trees with aerial and buttress roots, the vegetation is evergreen

### **TYPES OF FOREST VEGETATION**

- I. Mangrove Swamp Forest: It is found in the delta and coastal parts of Nigeria such as Port Harcourt, Warri, Uyo and Calabar.

### **CHARACTERISTICS OF SWAMP FOREST**

1. It has tall, woody trees
2. It has aerial roots
3. It has evergreen trees with a broad leaves
4. Trees found include white mangrove and red mangrove

### **EVALUATION**

1. What is Vegetation?
2. List the three types of Vegetation found in Nigeria.

- II. Rain forest: it is found in the southern parts of nigeria such as benin, sapele, Akure, Ibadan Abeokuta e.t.c.

### **CHARACTERISTIC OF RAIN FOREST**

1. It has tall trees with buttress roots evergreen and broad leaves
2. Trees exists in different heights; these are bottom, middle and upper layers
3. Presence of climbers, creepers, epiphytes and parasitic plants
4. It has numerous heterogenous species of trees such as Iroko, Obeche, Mahogany and African walnut

### **EVALUTION**

1. List three characteristics of mangrove forest
2. List three characteristics of rain forest

**SAVANNA VEGETATION:** Savanna means grasslands, the savanna vegetation in Nigeria is divided into; Guinea Savanna, Sudan Savanna and Sahel Savanna.





1. Guinea Savanna: This is found in Enugu, Lokoja, Ilorin, Markudi, Osogbo, etc.

### **CHARACTERISTICS OF GUINEA SAVANNA**

1. It consist of tall grasses and few scattered trees
  2. The trees are deciduous
  3. The trees have tiny leaves to reduce transpiration
  4. Grasses are green during rainy season and turn brown in the dry season
  5. The trees found in these areas are: Oil palm, dum palm, shea butter, Isoberlina etc
  6. It is the largest of all vegetation belts in Nigeria
2. Sudan Savanna: This vegetation belt is found in Sokoto, Kastina, Kaduna, Kano, Dutse, Bauchi, etc.

### **CHARACTERISTICS OF SUDAN SAVANNA**

1. It has short numerous grasses
  2. Presence of scattered and short deciduous trees
  3. Some trees have thorns while others have thick barks
  4. Plant species includes acacia, date palm, silk cotton plants, baobab
3. Sahel Savanna: This is found in Maduguri and Damaturu (north belt of the country)

### **CHARACTERISTICS OF SAHEL SAVANNA**

1. It has short scanty grasses
2. Presence of short and tough shrub/trees
3. Grasses are fewer, poorer and in patches
4. It has many drought resistant and scatterd plants
5. Plant spicies are acacia, gum Arabic, date palm and baobab
6. Sparse rainfall discouraging cultivation of crops.

### **EVALUATION**

1. List three characteristics of guinea savanna.
2. List three characteristics of sudan savanna.

**MONTANE VEGETATION:** This is found in highlands areas like Jos and Adamawa with high population of grasses.

### **CHARACTERISTICS OF MONTANE VEGETATION**

1. It is associated with highland areas
2. It has varied trees at its windward (facing the wind) side.
3. It has grasses at its leeward (sheltered from the wind) side.
4. Presence of short, scattered and deciduous trees.
5. It is highly populated with grasses.

### **IMPORTANCE OF VEGATATION**

1. It serves as a source of food
2. Timbers are obtained from the forest



3. Leaves and grass are used in roofing
4. Roots, barks and leaves are used for medicinal purpose
5. Sources of raw materials for industries
6. Provision of sites for tourism
7. Source of employment for hunters, lumbermen, forest officers, etc.

### GENERAL EVALUATION

1. What is Vegetation?
2. What is Forest and Savanna?
3. List three characteristics of Sahel Savanna
4. List three characteristics of Montane Vegetation
5. List five importance of Nigerian Vegetation

### WEEKEND ASSIGNMENT

1. Iroko, Obeche, Mahogany are found in \_\_\_\_\_ A. rain forest B. mangrove C. sudan savanna D. sahel savanna
2. The largest vegetation in Nigeria is \_\_\_\_\_ A. rain forest B. mangrove C. guinea savanna D. montane
3. The vegetation which is characterized with tall grasses is \_\_\_\_\_ A. guinea savanna B. sudan savanna C. sahel savanna D. montane
4. Forest do not provide which of the following? A. medicine B. food C. fuel D. automobiles
5. Area with highlands are usually characterized with \_\_\_\_\_ vegetation A. Savanna B. Forest C. swamp D. montane

### THEORY

1. a. List four characteristics of swamp forest  
b. List two characteristics of rain forest.
2. a. What are the three types of vegetation in Nigeria  
b. List three forest trees

### WEEK EIGHT

DATE \_\_\_\_\_

### TOPIC: PROPAGATION

#### CONTENT

1. Meaning of Propagation
2. Types of Propagation

#### MEANING OF PROPAGATION

Propagation simply means reproduction. It is necessary for crops to propagate so that they can increase in numbers and also maintain their useful characteristics.

#### METHODS OF PROPAGATION

There are two types of propagation, these are sexual and Asexual/Vegetative propagation.

#### SEXUAL PROPAGATION





Sexual Propagation involves planting crops by means of seeds. Seeds can be planted directly in the field or first in the nursery before being transplanted. Examples of seeds which are planted first in the nursery are oil palm, cocoa, coconut etc. common crops that that propagated sexually are cowpea (beans), maize, pawpaw, rice, groundnut etc.

A seed when planted undergoes the following processes.

1. Germination: the process whereby the embryo of a seed resumes growth under favourable conditions.
2. Emergence: this refers to the appearance of a seedling above soil level.

Conditions necessary for germination of seeds are

1. Adequate moisture
2. Viable seed (living embryo)
3. Optimum temperature
4. Adequate air

### **ADVANTAGES OF SEXUAL PROPAGATION**

1. Seeds are cheap to obtain.
2. The seeds are portable.
3. They are convenient to handle.
4. They are easy to store.
5. They are easy and cheap to transport.
6. Seeds can be stored for longer periods.
7. Crop population increase can easily be obtained through the use of seeds.

### **DISADVANTAGES OF SEXUAL PROPAGATION**

1. Some seeds produce plants that do not resemble their parent plants
2. Some seeds produce low yields during the first year
3. Plants grown from seeds are usually not uniform in growth, maturity and yield
4. Plants grown from seeds take a long time to mature and produce fruits

### **EVALUATION**

1. What is propagation?
2. Explain Sexual propagation

### **ASEXUAL PROPAGATION**

Asexual propagation is the production of new plants from the parent plants using vegetative parts. The vegetative parts include the stem, leaves and roots. Asexual propagation is also being called vegetative propagation. Plants that need to be propagated asexually possess the following characteristics:

1. They do not produce seed e.g pineapple
2. They produce seeds but are not viable for planting e.g Banana
3. They take many years to mature and are easier to propagate via vegetative means e.g cocoa.

Asexual propagation can be divided into five, namely:

1. Division
2. Cutting



3. Layering
4. Grafting
5. Budding.

**DIVISION:** Division is the propagation of plants from special vegetative organs that separate naturally from the parent plant. Such organs includes:

1. Rhizomes e.g ginger
2. Suckers e.g. banana and plantain
3. Bulbs e.g. onions
4. Corm e.g. cocoyam

### EVALUATION

1. What is asexual propagation
2. List the four types of asexual propagation

**CUTTINGS:** Plants parts are cut into portions in order to produce new plants from them. Cuttings can be obtain from stems, leaves and roots of plants and are used to propagate plants. For example:

1. Stem cutting are used to propagate cassava, sweet potato and sugarcane
2. Root cutting are used to propagate breadfruit
3. Leaf cuttings are used to propagate bryophyllum.

**LAYERING** is a method of vegetative propagation in which the stems or branches of plants are made to develop roots and give rise to another plan while they are still attached to the parent plant.

**GRAFTING** is a method of vegetative propagation in which cut surfaces of two different (but closely related) plants are joined together so that they unite and grow as a single plants. The lower part of this union is called the stock while the top is called the scion.

**BUDDING:** It is similar to grafting. Budding involves a desirable characteristic. The bud removed should have a piece of bark attached to it. The removed bud is then inserted into a cut already made in another plant called the stock. The inserted bud is the scion.

### EVALUATION

1. Explain stem cutting.
2. Explain layering and grafting.

### ADVANTAGES OF ASEXUAL PROPAGATION

1. Plant are true to type, uniform in quality, growth habit and yield
2. There is uniformity at maturity
3. Is the only way to propagate plants that do not produce seeds
4. Plants mature and start bearing fruit early

### DISADVANTAGES OF ASEXUAL PROPAGATION

1. Plants are usually very rigorous and therefore do not live long enough
2. It is not possible to produce new varieties of plants



3. Budding and grafting require special skills
4. Virus diseases can be transmitted to new plants.

### **GENERAL EVALUATION**

1. What is Propagation?
2. What is sexual propagation?
3. What is asexual propagation?
4. List four types of vegetative propagation
5. Explain budding, layering and grafting

### **PROJECT**

Grow a plant (beans, aloe vera, maize, water leaf, corchorus (ewedu), amaranthus (efo), okro) in a seed pot using either sexual or asexual means.

### **READING ASSIGNMENT**

Answer revision questions from Junior Secondary Agriculture 3 for Nigerian Schools, Chapter 5, Pages 51

### **WEEKEND ASSIGNMENT**

1. Onions can be propagated with the use of \_\_\_\_ A. bulb B. rhizome C. stem D. root
2. Cassava is usually propagated by \_\_\_\_ A. root cutting B. stem cutting C. leaf cutting D. seeds
3. Asexual propagation is also called \_\_\_\_ A. bulb B. rhizome C. vegetation D. root
4. Sexual propagation involves the use of \_\_\_\_ A. stem B. leaf C. root D. seed
5. Banana is propagated by \_\_\_\_ A. rhizome B. leaf C. sucker D. bulb

### **THEORY**

1. a. What is propagation?  
b. List four types of vegetative propagation.
2. a. What is Asexual propagation?  
b. Explain; cutting, layering and grafting.

### **WEEK NINE REVISION**

### **WEEK TEN EXAMINATION**