

Friday 3<sup>rd</sup> April 220

## Science lesson 9

1. a) What do you understand by the term pollination?

**Pollination is the transfer of pollen grains from the anthers to the stigma**

- b) Give the two types of pollination.

i) **Self pollination**

ii) **Cross pollination**

Mention any two agents of pollination.

i. **Wind**

ii. **Flowing water**

iii. **Insects e.g. honey bees, butterflies, moths, etc**

iv. **Sunbirds**

2. a) Which insects pollinate flowers at night?

**Moths**

- b) How are moths able to pollinate flowers at night?

**By the help of scent produced by flowers**

- c) Why are moths able to pollinate flowers at night?

**They have a strong sense of smell**

- d) How is pollination important to plants?

**Helps plants to produce seeds and bear fruits**

- e) Apart moths, which other animals can pollinate flowers at night?

**Bats**

- f) Give two plants which undergo each of the following types of pollination;

- i) cross pollination

i. **paw paws**

ii. **maize**

iii. broccoli

iv. apples,etc

ii) self pollination

i. Tomatoes

iii. Wheat

ii. Rice

iv. Peas, tec.

g) How are the following plants adapted to cross pollination

i) maize

**Their stamen and pistil mature at different times**

ii) paw paws

**3. The table below is about differences between wind pollinated flowers and insect pollinated flowers. Study it carefully and complete it correctly.**

Wind pollinated flowers	insect pollinated flowers
They produce many light pollen grains	<b>a) They produce few stick pollen grains</b>
<b>b) They produce no scent</b>	They produce scent
They have dull coloured petals	<b>c) They have brightly coloured petals</b>
<b>d) Their filaments are longer than their styles</b>	Their styles are longer than their filaments

4. a) Give any two ways flowers are pollinated.

i. By wind

ii. By insects

iii. By water

5. b) Why do wind pollinated flowers produce large quantities of pollen grains.

**To increase chances of pollination since most pollen grains are wasted on wrong plants**

- c) What happens to pollen grains when they fall on the stigma.

**They develop pollen tubes**

- e) What type of change is pollination?

**Biological change**

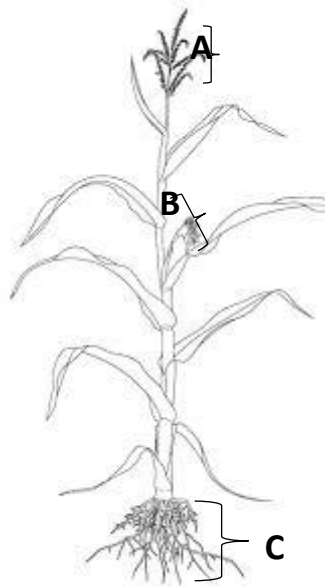
- f) Give a reason for your answer in "d" above.

**It occurs in plants which are living things**

6. a) Which type of honey bees pollinate flowers.

**Worker bees**

7. ***The diagram below is of a maize plant study it carefully and use it to answer questions that follows.***



- a) Name the parts marked with letters A-C

**A. Stamen**

**B. Pistil**

### **C. Fibrous roots**

b) State the importance of the parts marked:

i. A to produce pollen grains

ii. C **to absorb water and minerals from the soil for the plant**

**To hold the plant firmly in the soil**

c) Which letter shows the

i) Male part of a maize plant

**Letter A**

ii) Female part of a maize plant

**Letter B**

d) Which of the parts marked A and B matures first?

**Part A**

e) Name the root system marked C.

**Fibrous root system**

f) Which part of a maize plant do we eat?

**Seeds**

g) Name any one pest which attacks maize.

i. **Monkeys**

iii. **Caterpillars**

ii. **Army worms**

iv. **Maize weevils**

h) Mention any one disease which attacks maize.

i. **Maize streak**

iii. **Bacterial stalk rot**

ii. **Charcoal rot**

iv. **Downy mildew**

i) Apart from maize give any other two plants with prop roots

i. **Sorghum**

iii. **Ficus**

ii. **Sugarcane**

iv. **Rubber plant**

8. a) What is a seed?

**A seed is a fertilized ovule**

b) Give two types of seeds.

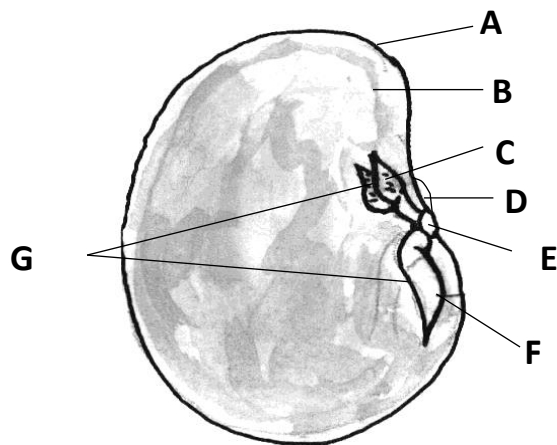
i. **Monocotyledonous seeds**

ii. **Dicotyledonous seeds**

c) How are seeds important to plants?

**Seeds help plants to reproduce**

9. The diagram below is of a bean seed. Study it carefully and use it to answer questions that follow.



a) Name the parts marked with letters

a. A **testa**

b. B **cotyledon**

c. C. **plumule**

d. D **hilum**

e. E **micropyle**

f. F **radicle**

g. **Seed embryo**

b) State the importance of each of the following parts during germination

i) A. **To protect the inner parts of the seed**

ii) B. **To provide food to the embryo**

iii) C. **To develop into the shoot system**

iv) E. **To allow moisture and oxygen into the seed**

v) F. **To develop into the root system**

vi) G. **To develop into seedling**

c) How is the function of the cotyledon of a bean seed during germination different from its function immediately after germination?

**The cotyledon of a bean seed provides food to the embryo during germination while immediately after germination, it makes food for the seedling**

d) Which part of a bean seed grows into?

a) Shoot system

**Plumule**

b) Root system

**Radicle**

e) Which part of a seed embryo comes out first during germination.

**Radicle**

f) Give a reason for your answer in "f" above.

**To absorb water for the seedling**

g) Name the part of a bean seed which is useless during germination.

**Hilum**

h) Name the food value mainly got from eating beans.

**Proteins**

i) Which deficiency disease is prevented when children are fed on beans?

**Kwashiorkor**

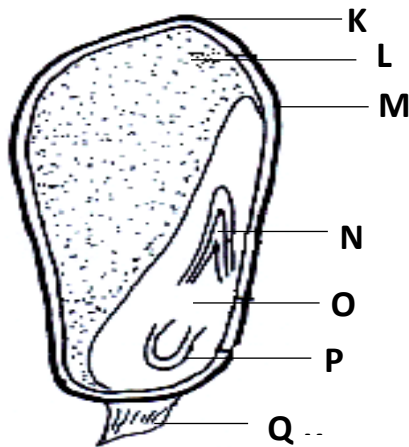
j) What type of germination do beans undergo?

**Epigeal germination**

k) How does a bean seed take in water during germination?

**Through the micropyle**

**l) Below is a diagram of a maize grain. Use it to answer the following questions.**



a) Name the parts marked with letters K-P

K **style scar**

L **endosperm**

M **testa**

N **plumule**

O **cotyledon**

P **radicle**

Q **stalk scar**

b) State the function of part O.

**To supply food to the growing embryo // to absorb food from the endosperm and supply it to the growing embryo**

- c) Which part of a bean seed has a similar function as part L of the maize grain above?

**Cotyledon**

- d) Give one part of a maize grain which is useless during germination.

**I. Style scar**

**II. Stalk scar**

- e) What type of germination do maize undergo?

**Hypogeal germination**

- f) Give a reason for your answer in "f" above.

**Its cotyledon remains under the ground**

- g) Name the two parts of a maize grain which make up the embryo.

**Plumule and radicle**

- h) Why is a maize grain called a fruit?

**It has two scars**

- i) What food value do we mainly get from eating maize?

**Carbohydrates**

- j) What type of alcohol can be made from maize flour?

**Ethanol/ ethyl alcohol**

10. a) Give the meaning of the term germination.

**Germination is the development of a seed embryo into a seedling**

- c) Mention the two types of germination.

**Hypogeal germination**



### **Epigeal germination**

- d) Apart from water and oxygen, give one other condition necessary for germination to occur.

### **Warmth/ optimum temperature**

- e) Why is germination called a biological change?

### **It occurs in plants which are living things**

- f) How is germination similar to rusting?

i. **Both use oxygen to occur**

ii. **Both are irreversible**

- g) How is germination similar to chemical changes?

### **Both are irreversible**

- h) Which part of a plant germinates?

### **Seed/ seeds**

- i) Which part of a seed develops into a seedling?

### **Seed embryo**

- j) Mention two components of soil plants use for germination.

i. **Water/moisture**

ii. **Air/oxygen**

- k) Why is germination able to take place both during the day and at night?

### **All conditions for germination are present both at night and during day**

- k) State the role of each of the following during germination.

- i) oxygen

### **for respiration**

- iii) warmth

**iv) activates enzymes responsible for germination**

k) Rearrange the following steps of germination to come up with the correct order.

- The radicle comes out of the seed
- The seed absorbs water
- The plumule comes out
- The testa swells
- **The seed absorbs water**
- **The testa swells**
- **The radicle comes out of the seed**
- **The plumule comes out**

l) How is seed dormancy different from seed viability?

**Seed dormancy is the inability of a seed to germinate while seed viability is the ability of a seed to germinate**

m) State any two factors which may fail a seed to germinate.

- I. Damaged seed embryo**
- II. Absence of necessary conditions**
- III. Immature seeds**
- IV. Too hard testa**

n) State any two reasons for seed selection before planting.

- i. **It helps to remove seeds spoilt by pests and diseases.**
- ii. **It helps to separate varieties of seeds mixed together.**
- iii. **It helps to remove very small seeds which may not germinate and grow well.**
- iv. **helps one to have to have good yields**

v. helps to reduce time wastage

vi. helps to reduce labour wastage

o) What is the first step in plant life?

**Germination**

p) Why can't seeds put in a refrigerator germinate?

**Due to absence of warmth**

q) Apart from softening the testa, give one other role of water during germination.

**To dissolve food in the cotyledon or endosperm for easy absorption**

r) What happens to seeds if they are sown in cold soil?

**They don't germinate**

s) Why do seeds' leaves grow above the ground during germination?

**To get sunlight / they are positively phototropic**

**End**

**Stay home stay safe**