

DISNEY KINDERGARTEN AND PRIMARY SCHOOL

PRIMARY FOUR SCIENCE WORK

THURSDAY, 19TH MARCH, 2020

Name: _____

Pollination

Pollination is the transfer of pollen grains from the anther to the stigma.

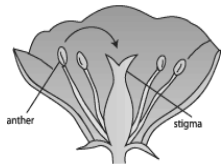
Agents of pollination – wind, water, animals e.g. bats, insects (bees, moth) Birds e.g. sunbird. It has a long sharp slender beak which sucks nectar from the base of flower.

Types of pollination

Self- pollination is the transfer of pollen grains from the anthers to the stigma of the same flower of a plant.

Examples of plants with self-pollination are tomatoes, marigold etc.

Illustrations of self-pollination

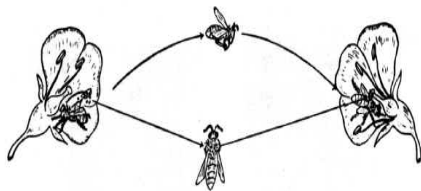


Cross- pollination is the transfer of pollen grain grains from the anthers to the stigma of different flowers of the same kind.

It results into good fruits and seeds.

Examples of plants with cross pollination are; maize, coconuts, pawpaw, passion fruits, and cow peas

Illustrations of cross pollination



The difference between self and cross pollination.

In self-pollination the pistil is shorter than the stamen while in cross pollination the pistil is taller than the stamen.

Agents of pollination

An agent of pollination is anything that aids in the transfer of pollen grains from anthers to the stigma of a flower.

They include;

- ✓ Animals (insects, man and birds)
- ✓ Wind
- ✓ Flowing water

Animals, bats, birds/insects eat nectar from flowers. Bees collect nectar and pollen from flowers which they eat as food

Characteristics of insect/animal pollinated flowers

- ✓ They have bright coloured petals
- ✓ They are large and seen clearly,
- ✓ They have good smell or scent
- ✓ They produce a lot of nectar
- ✓ They have sticky stigma

Characteristics of wind/water pollinated flowers

- ✓ They have dull coloured petals
- ✓ They have no nectar
- ✓ They have no scent
- ✓ Have feathery stigma
- ✓ They are small in size
- ✓ They produce lots of pollen grains

Exercise

1. Which type of pollination takes place in maize?

2. How can you tell an animal pollinated flower from a wind pollinated one?

3. Define the term pollination.

4. Identify two types of pollination.

5. Mention three agents of pollination

6. Which insect pollinates flowers at night?

7. What do you think attracts animal pollinators to flowers at night?

8. Draw and show the two types of pollination.

9. How is cross pollination important to farmers?

10. Give one way in which a sun bird can help while sucking nectar from flowers.

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FRIDAY, 20TH MARCH, 2020

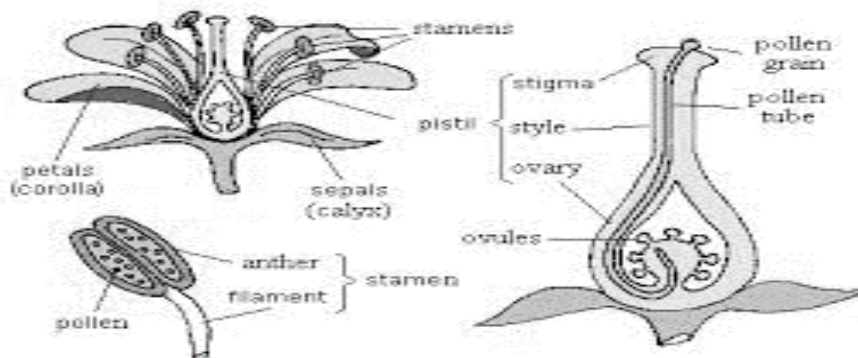
Name: _____

Fertilization

Fertilization is the fission of male and female gametes to form a zygote.
In plants, male gametes are pollen grains while female ones are ova.

After pollination, fertilisation takes place when pollen goes down through the style to the ovary to meet ovules. Ovules grow into seeds while ovary grows into a fruit.

Note: Fertilization in plants takes place inside the ovary of a flower.



Uses of flowers to people

- ✓ They are put on coffins to show love & respect to the dead.
- ✓ Flowers help in making dye.
- ✓ They are given to friends to show love
- ✓ Some flowers are used in making insecticide.
- ✓ For decoration.
- ✓ Flowers are sold for income
- ✓ Some flowers are a source of food.
- ✓ Given to visitors as sign of welcome.

Exercise

1. Explain the term fertilisation in flowers.

2. Identify the use of each of the following during fertilization;

(a) anther _____

(b) stigma _____

3. What do the following parts develop into after fertilisation?

(1) ovules _____ (11) ovary _____

4. Give four uses of flowers to people

a) _____

b) _____

c) _____

d) _____

5. Why do insects visit flowers?

6. Why do bees visit flowers?

Monday, 23RD MARCH, 2020

Name: _____

A seed is a mature ovule which grows into a young plant.

Uses of seeds to people.

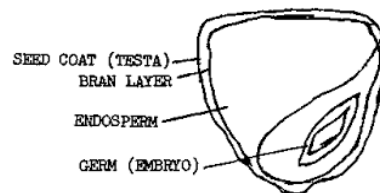
- Some seeds are eaten.
- Some seeds are used for herbal medicine.
- Seeds are sold for income.
- Used for propagation.

Types of seeds

Monocotyledonous seeds have one cotyledon in each. Examples; millet, maize, sorghum, wheat, rice and all cereals.

Dicotyledonous seeds have two cotyledons in each. Examples; beans, soya beans, G. nut, cowpeas. All legumes

Maize grain



Activity: children will soak maize grain, split it and name the parts.

Uses of each part:

Testa or seed coat – protects the inner delicate parts.

Endosperm – stores food for the embryo in monocots.

Cotyledon- absorbs food from endosperm and passes it to the embryo during germination. Embryo grows into a young plant.

Exercise

1. Why is maize grain regarded as fruit not a seed.

2. Give the use of each of the following parts in cereals;

(a) cotyledon _____

(b) endosperm _____

3. Identify two parts of maize grain that make up embryo.

4. Which part of maize grain protects delicate inner parts?

5. Explain how a seed is different from a seedling.

6. Define the following terms:

(a) Monocots

(b) Dicots

7. Give three examples of cereals or grain crops.

8. What are legumes?

9. What is found in root nodules?

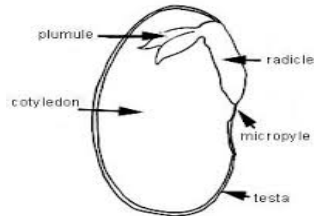
10. Give three examples of leguminous crops

Name: _____

Bean seed

Uses of parts

Testa – protects inner parts. Cotyledon stores food for embryo in legumes. **Radicle** grows into root system while **plumule** grows into shoot system.



Activity: Naming parts of bean seed after splitting it

Differences between monocotyledonous and dicotyledonous seeds

- Monocots have one cotyledon while dicots two cotyledons.
- Monocots store food in the endosperm while dicots store food in the cotyledon.
- Monocots have two scars while dicots have one scar.
- Monocots have endosperm while dicots have no endosperm.

Activity: Observing parts of dicots and monocots

Exercise

1. Which part of a seed grows into; (a) shoot system (b) root system?

2. Name the part on the bean seed that helps in exchange of gases during germination.

3. Identify the part which stores food for embryo in legumes.

4. Mark the part on the diagram that gives attachment of bean to a pod with letter X.

5. Which part of a maize grain is similar to the cotyledon of a bean seed?

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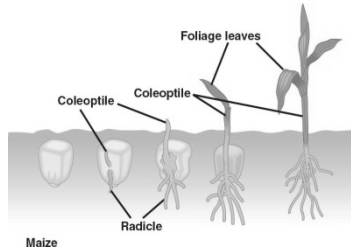
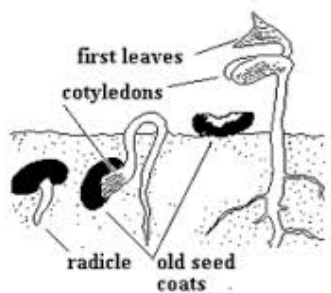
PRIMARY FOUR SCIENCE WORK

WEDNESDAY 25TH MARCH, 2020

Name: _____

Germination is the growing of a seed embryo into a seedling.

Types- Hypogeal and Epigeal germination



Activity: observing development stages in the earlier planted bean seeds and maize grains

-Oxygen, Warmth, Moisture

Explaining the types of germination

Epigeal germination– is the type of germination in which cotyledons come above ground. E.g. for most dicots like beans, cowpeas etc

Hypogeal germination–is the type of germination in which the cotyledon remains in the soil. E.g. monocots like maize, millet, sorghum.

Exercise

1. Define the term germination.

2. Identify two types of germination.

3. State three conditions needed for germination to take place.

4. Explain the following;

(1) Epigeal germination _____

(11) hypogeal germination _____

5. Give three examples of plants that undergo each of the above mentioned types of germination

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PRIMARY FOUR SCIENCE WORK
THURSDAY, 26TH MARCH, 2020

Name: _____

Common crops

Maize, sorghum, peas, groundnuts, bananas, beans, cassava, coffee, tea, cotton etc.

Groups of crops

1. Annual crops: These are crops which grow and die within two years or a season.

-They are harvested once e.g. maize, sweet potatoes, beans, Irish potatoes, millet, and etc.

2. Perennial crops: These are crops which live for two or more years. They produce food more than once. Examples: mangoes, bananas, oranges, guavas, pineapples, tea, coffee, passion fruits sugarcane etc.

Activity: Move around with an adult and observe and record the crops grown in your area or home and record the crops commonly grown.

Exercise

1. Name at least four common crops grown in your area or home.

2. Define the following;

(a) Annual crops

(b) Perennial crops

3. Identify four examples of each group of crops mentioned above

4. Explain why beans are grouped under annual crops.

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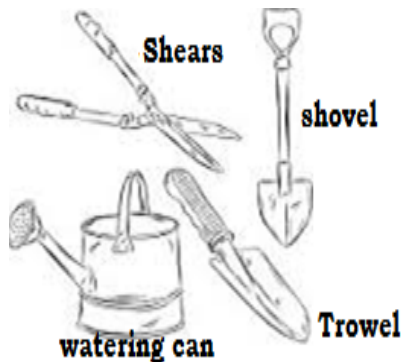
FRIDAY, 27TH MARCH, 2020

Name: _____

Common garden tools and Uses

Garden hoe, spade, garden rake, wheelbarrow, axe, secateurs, trowel, spray pump, Panga, forked hoe, watering can, knife, sickle, knife, garden fork, pick axe or mattock, hand fork etc.

Diagram showing each garden tool



Activity

Identifying names of the given tools and demonstrate how each is used.

Ways of caring for garden tools

- Painting metallic garden tools
- Keeping garden tools in clean & dry place
- By oiling metallic garden tools

Exercise

1. Give four examples of common garden tools.

2. How does each of the following garden tools help farmers?

- a) Trowel _____
- b) Hoe _____
- c) Secateurs or pruning shears _____

3. Mention two ways of caring for garden tools.

4. Why is it important to keep garden tools in clean dry places after use?
