SCIENCE 5

Modified In-School Off-School Approach Modules (MISOSA)

Distance Education for Elementary Schools

SELF-INSTRUCTIONAL MATERIALS

CHARACTERISTICS OF NON-VASCULAR PLANTS

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CHARACTERISTICS OF NON-VASCULAR PLANTS

At the end of this lesson, you will be able to:

- describe characteristics of non-vascular plants (e.g. algae, mosses, liverworts)

Try to Recall

A. Activity 1

Which of these are plants? Draw them in your notebook.

corals

sponge

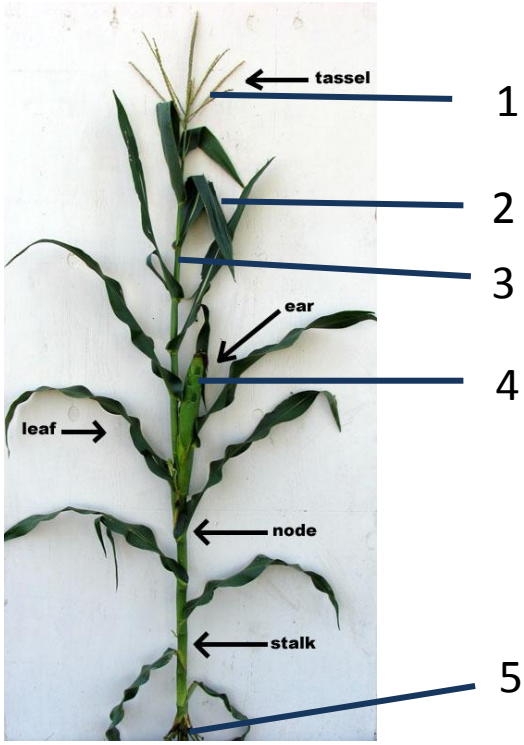
mushroom

fern

sea weed

B. Activity 2

Identify the parts of a plant. Choose from the given words in the box. Write the answer in your notebook.



leaf	fruit
stem	trunk
roots	twig
flower	pistil

Have you selected the seaweed and fern in activity A and named (in correct order) flower, leaf, steam, fruit and roots in B? You did a very good job!

In this lesson, you will learn about the non-vascular plants.

The Grade V Class of Mrs. Alvarez visited a pond research in the library to learn more about non-vascular plants. Read some of the reports they gathered.

Non – Vascular Plants

1. have cells that slowly transport water and food
2. does not have vascular tissues
3. grow least in moist land or marine habitat
4. have root hair-like structures called rhizoids that anchor the plant
5. have green, leaf-like structures where photosynthesis occur
6. have three groups: algae, moss and liverworts

Algae

- may be one – celled or many celled
- have simple plant body without roots, stems, flowers and contains chlorophyll and is capable of photosynthesis
- Survive under shaded moist land or marine environment
- may have red, brown or green color

Moss

- grow close together
- have leaf-like parts that absorb water
- need water to reproduce
- have sperms that are flagellated
- contains chlorophyll and is capable of photosynthesis

Liverworts

- may look like flattened moss with round-lobed leaves or flat and ribbon-like with rhizoids on the undersides
- usually grows in a bed of mosses
- have cup-like reproductive structures that release balls of cells that grow into new plants

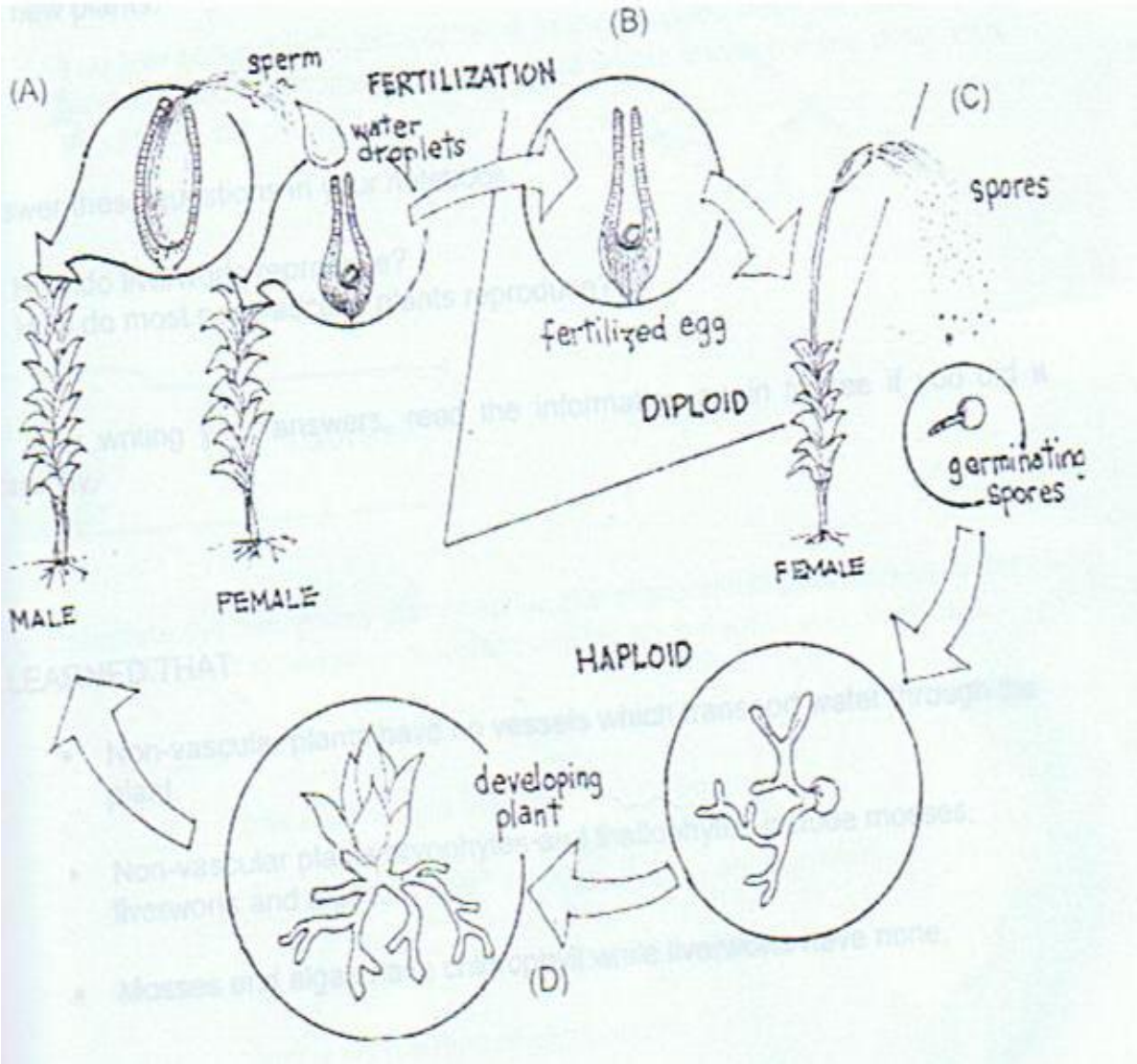
Answer these questions in your notebook:

1. Why are non-vascular plants capable of photosynthesis?
2. Why are they called non-vascular plants
3. What structure helps anchor most of the non-vascular plants?

To check whether your answers are correct, please read the information again.

READ AND LEARN MORE

Study this illustration and the information that follows that shows how most non-vascular plants reproduce.



(A) The sperm from the male plant swim through a water droplet to the top of the female plant that contains the egg.

(B) The sperm fertilizes the egg forming a Diploid zygote.

(C) The zygote still at the top of the female plant grows into a sporophyte. This has a long stalk with a capsule on top. The cells inside the capsule develop into Haploid spores. When the spores mature, the capsule opens and releases the spores in the air.

(D) if a spore lands in a suitable place, it germinates forming a filament that grows along the surface of the ground. Buds that come from this reproduction cycle begins again.

Liverworts, however, do not undergo this process. These have cup-like reproduction structures that contain balls of cells that maybe released and grow into new plants.

Answer these questions in your notebook.

1. How do liverworts reproduce?
2. How do most non-vascular plants reproduce?

After writing your answers, read the information again to see if you did it correctly.

I LEARNED THAT:

- Non-vascular plants have no vessels which transport water through the plant.
- Non-vascular plants bryophytes and thallophytes include mosses, liverworts and algae.
- Mosses and algae have chlorophyll while liverworts have none.

Apply It

A. Answer TRUE or FALSE in your notebook.

Non-vascular plants:

1. are very small
2. grow in wet or damp places
3. have vessels that carry water around the plant
4. include bryophytes and thallophytes
5. have deep roots

B. You saw some mushrooms growing in the decayed tree near your house. You have learned that some mushrooms are edible and some are poisonous. Would you still cook it?_____Why?_____

Test Yourself

A. Complete the sentences that describe the characteristics of non-vascular plants. Write the appropriate non-vascular plant for each item in your notebook.

1. _____ have no system of vessels to carry water around the plant
2. _____ has leaflike part that contains chlorophyll.
3. Green _____ is considered a kind of non vascular plant
4. Mushroom is a _____ that develops through spores.
5. _____ has a simple type of plant body.

B. Copy the correct characteristics o non vascular plants in your notebook.

Non-vascular plants are small.
Algae are always green in color.
Moss needs an abundant supply of water.
Mosses always grow in rock surface.
Liverwort has a plant body called thallus.
Liverworts may look like algae.
Algae can survive under direct sunlight.

Congratulations for a job well done! Keep up the good work. Now you're ready to move on to the next module.