

Recommendations on Botanical Teaching Methodology

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Annotation: This article provides advice and skills on the importance and types of use of problems and exercises in the teaching of Botany, as well as the organization of the educational process, taking into account the age and individual characteristics of students.

Keywords: Botany, didactic card, skill, exercise, practice, reproduction cycle, skill.

Introduction

The history of the development of botany is related to the history of the development of society. From the earliest days of human life, primitive people were able to distinguish between beneficial and harmful plants. In order to meet the needs of mankind, he used the seeds, fruits, grains and tubers of various plants for food from the surrounding nature. He gradually laid the foundations for farming by studying and cultivating where and when they would grow. As a result, farming methods improved and folk botany emerged.

The Institute of Botany of the Academy of Sciences of Uzbekistan is working on the study of plants and their rational use. Major monographs have been published in this field. "Flora of Uzbekistan" (6 volumes), winner of the Beruni Prize, academician

E.. P. Korovin (2 volumes) "Vegetation of Central Asia and South Kazakhstan", academician Q. 3 Zokirov's monographs "Zarafshan flora and vegetation cover" (2 volumes) and "Central Asian plant identifier" (10 volumes) were published.

In recent years, in the development of botany in Uzbekistan, doctors of biological sciences, professors O. A. Ashurmetov, O'. P. Pratorov, N. I. Akjigitova, I. V. Belolipov, O. The contributions of H. Hasanov and others are significant.

Method

Problems and exercises used in teaching botany:

- Expanding students' scientific outlook;
- Strengthening students;
- Development of independent and creative thinking of students;
- Focuses on solving practical problems.

Mental activity of students is involved in the process of solving any problem. In this case, students' emotion, motivation, aspiration, and desire to learn will be high.

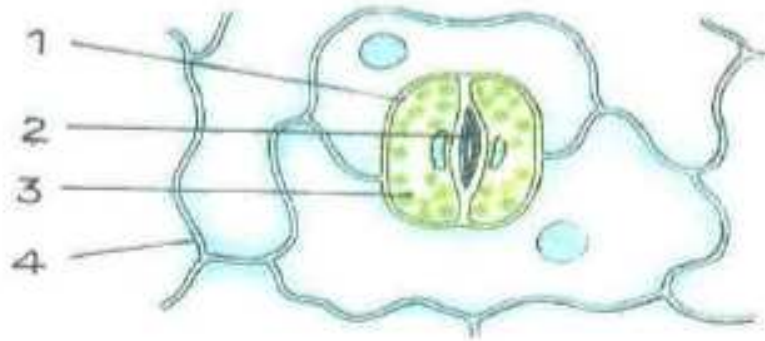
The issue plays an important role as a subject of development of students' mental activity, because in it students face certain difficulties and their knowledge, strength, ability to solve a problem situation is involved.

In addition to issues, exercises also play an important role in teaching botany.

Exercises allow students to consolidate the knowledge they have acquired and apply it in practice. Exercises can be in the form of a didactic card or a picture:

For example, the picture below serves to develop students' ability to recognize objects or parts of them.

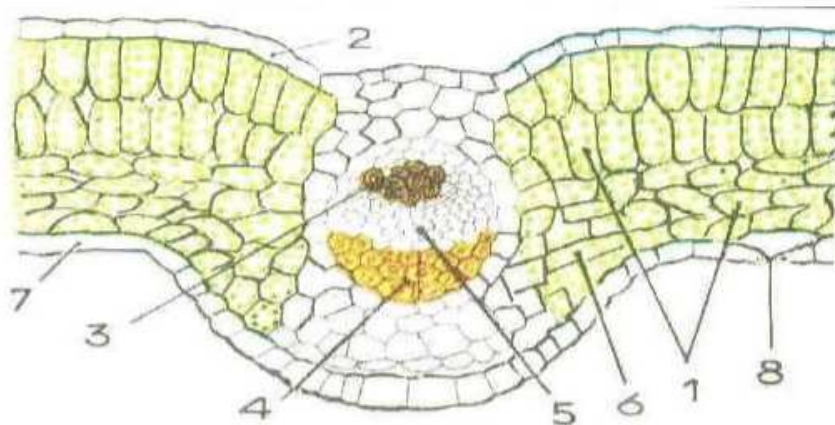
Exercise 1 Look carefully at the image given in the picture. Which texture of the leaf is given. Write the names of the objects marked with numbers 1-4.



In this exercise, students need to find the names of objects, that is, to apply previously acquired knowledge in new situations.

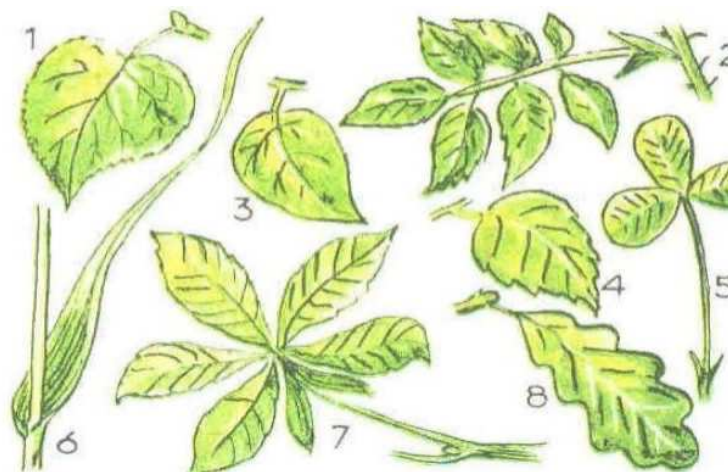
Exercises used in teaching botany include listing the names of objects and finding them. These exercises develop students' ability to recognize objects or parts of them.

Exercise 2 Consider the picture depicting the cross section of a leaf.



Determine the numbers given in the leaf epidermis (), leaf flesh cells (), porous tissue cells (), leaf epidermis (), ustitsa (leaf mouth) (), veins (), mechanical fibers (), conductive tubes (), and write in parentheses.

Among the exercises used in teaching botany, there are also exercises that require comparison and analysis.



For example, to perform this exercise, the student must identify the leaves, compare the leaves according to their structure, identify the types of veins, and show the method of attachment to the stem.

Exercise 3 Look at the leaves given in the picture and fill in the table below.

In order for students to complete this exercise, they will have the opportunity to apply the theoretical knowledge learned in the Leaf section.

Leaf №	Plant name	Simple or complex leaves	Rooting	Type of base installation

The advantage of pictorial exercises is that they allow students to visualize and understand the essence of the exercises as they perform them. Below are some examples of these pictorial exercises.

In the teaching of botany, generalization of students' knowledge, drawing exercises play an important role in systematization. For example, in the section "Plant Systematics" it is recommended to use the following exercises to visualize the cycle of plant reproduction and processing of this material:

Exercise 4 Consider the development cycle of pine. Identify the bodies marked with numbers. Write their names based on the sequence of numbers.



In this exercise, students should identify a pine leaf, a bud-fruit of different ages, a pollen flower, a seed flower, a leaf, a seed.

Exercise 5 Reproductive cycle of open-seeded plants.

In this pictorial exercise, the task is a bit more complicated, i.e. it has to explain the process of pollination and fertilization as well as identifying the reproductive organs. Assigning assignments in this order allows students to generalize their knowledge from simple to complex.



Identify the bodies marked with numbers. Write their names based on the sequence of numbers. During this exercise, students should note the structure of the flower of flowering plants, the occurrence of pollination and fertilization processes, the development of the fruit in the node, the seed within the fruit, the seed is the generative organ of the plant.

Conclusion

Thus, in the process of teaching botany, the acquisition of problem-solving skills by students prepares the ground for them to be able to solve problems and exercises in various branches of biology.

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