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# Content of Natural Science Teaching Materials

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**Abstract:** This article analyzes the content and importance of natural science curriculum. Natural science plays an important role in developing students' interest in and responsibility for nature. The article provides detailed information about the main concepts of natural science, their role in the curriculum, and how they can be effectively used in the educational process.

**Keywords:** Natural science, educational materials, educational process, interactive methods, curricula, experiments, interest in nature, independent research, pedagogical approaches.

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## INTRODUCTION

Natural science is a scientific field that studies nature, its laws, and the relationship between man and nature. Today, natural science education is an integral part of the educational process, aimed at educating the younger generation to be responsible towards nature, developing ecological awareness, and forming scientific thinking skills. Natural science educational materials include not only theoretical knowledge, but also practical experiences, which increases students' interest in nature.

The content of educational materials should be based on scientifically sound and interactive methods, ensuring the active participation of students. The goal of natural science is to educate students as responsible citizens by explaining to them the beauty of nature, its importance, and environmental problems. This article provides detailed information about the content of natural science educational materials, their role and significance in the educational process.

## METHODS AND ANALYSES

The methods used in developing the content of natural science curriculum materials and in the teaching process are divided into several main areas. These methods help make the process of acquiring knowledge more effective and interesting for students:

- a) *The teacher presents theoretical information during the lesson. This method allows students to become aware of basic concepts and principles.*
- b) *Provides students with the opportunity to apply theoretical knowledge in practice by conducting experiments. For example, experiments with plants or animals.*
- c) *Students develop skills in exchanging ideas and solving problems by working together in small groups.*
- d) *Videos, animations and interactive programs help students understand complex concepts.*
- e) *Students can independently conduct research in nature and analyze the results. 'students learn to solve problems by playing different ecological roles.*

## DISCUSSION

The Primary Education Section of the State Education Standard is established on the basis of the Law "On Education" and the "National Program for Personnel Training" adopted at the IX session of the Oliy Majlis of the Republic of Uzbekistan, as well as the Resolution of the Cabinet of Ministers "On the Development and Implementation of State Education Standards in the System of Continuing Education" dated January 5, 1998, and the "Regulation on the State Education Standard".

This document states the following: The state standard for primary education is established not by academic subjects, but by educational areas. Standard indicators for educational areas are determined based on the minimum amount of educational content required by social demand, based on the level of development, needs and opportunities of children aged 7(6)-11. The establishment of a state educational standard for primary education at this stage allows for the delimitation of the scope of educational content and the integration of educational areas. The establishment of a state educational standard involves updating the content of primary education based on a conceptual basis in terms of the requirements of the modernization period.

The direction of this state educational standard "Primary Education" consists mainly of 2 parts:<sup>1</sup>

**Part 1.** Introduction. It indicates the general tasks of the requirements for each area.

In particular, its part 1.3 is devoted to the "nature education area" and states the following: introducing children to the environment, forming in them an initial idea of the structure of the world and natural phenomena, forming a scientific worldview, instilling love for nature and teaching them to use it rationally is carried out through the nature education area.

Standard indicators for the nature education area are determined from the point of view of the child's ability to have an idea of nature and its phenomena, to distinguish them, briefly describe them and apply them in practice.

**Part 2.** Indicators determining the basis of the educational content. Part 2.3 of this is the field of "nature education", which includes the following:

1. *Animate and inanimate nature. Methods of studying nature: observation and experience. Bodies and substances.*
2. *The Universe. The Sun is the nearest star. The Earth's rotation around its axis and the Sun, the Moon is the Earth's satellite. Globe. Map. The horizon and its main sides. The main parts of the Earth's surface: mountains, plains and oceans.*
3. *The air around us. Weather. Changes in weather during the seasons. Precipitation. Water in nature.*
4. *Natural phenomena. Basic information about the movement of bodies, heat, sound, electricity, light phenomena.*
5. *Plants. Plant organs. Cultivated and wild plants. Seasonal changes in plants.*
6. *Animals. Domestic and wild animals. Insects. Birds. Aquatic animals. Predators. Living conditions of animals.*
7. *Human and his health.*
8. *Our homeland next to the map. Nature of our country, mountains and plains, deserts and forests, weather, main rivers, lakes and reservoirs. Underground resources. Nature of the capital, regions and the Republic of Karakalpakstan.*
9. *The relationship between man and nature. Nature protection. As is known, natural science in primary grades is studied in 2 parts: "The world around us" (in grades 1-2) and "Natural science" (in grades 3-4).*

<sup>1</sup> Umumiy o'rta ta'limning Davlat ta'lim standarti va o'quv dasturi. Ta'lim taraqqiyoti. 3 – maxsus son —Sharq nashriyot matbaa kontserni 1999 – yil.

A new subject called *"The world around us"* has been included in the curriculum of primary grades (grades 1-2), 1 hour is allocated for its study per week. The main tasks of the course on familiarization with the surrounding world are to collect children's ideas about the surrounding life, objects and phenomena of nature, and the reform of general secondary education and vocational schools changed the system of secondary and vocational education, and the State Educational Standards of the Republic of Uzbekistan were adopted.<sup>2</sup>

## RESULTS

Students come to conclusions and generalizations about the need to preserve nature, which allows the teacher to convey the law of Uzbekistan on the preservation of nature to the minds of younger students.

In the process of studying the ecology section, the concepts and knowledge about ecology passed in the 3rd grade are transferred from the theoretical method to the practical method by the 4th grade through various visual aids.

Observation, excursions, experiments, practical work play a leading role in the study of natural science. Children continue to be taught observation methods, record their results in a diary, and draw conclusions and generalizations based on them. Great attention is paid to conducting excursions, studying natural objects and reality in their natural state. The visual materials collected during the excursion lesson can also be used in classes. Therefore, special attention should be paid to conducting natural science lessons.

When studying the topic of nature conservation, students get acquainted with the ecological problems of our republic and nature conservation work.

The subjects *"The World Around Us"* and *"Natural Science"* are closely related to other subjects taught in primary grades. Observations of nature and the life of society, people's work help to better understand educational materials in subjects such as native language, mathematics, and labor education. The ideas that students have about the world around them in other lessons are expanded and enriched in classes on this subject.

During the teaching of the subjects *"The World Around Us"* and *"Natural Science"*, special attention should be paid to the fact that children master the rules of behavior in the classroom, school, and public places. The teacher should show children how students should interact with their peers.

## CONCLUSION

The content of natural science curriculum materials is an important process that allows students to understand nature more deeply, to study its processes and laws. These materials combine theoretical knowledge, practical experiments, interactive methods and modern technologies, and serve to increase students' interest and active participation.

Thus, educators not only tell children about the content of this or that rule, but also show them how to fulfill it. Acting out poems and stories that show various actions (actions) of people, their relationships with each other is an effective way to demonstrate the rules of behavior. Many games and activities help to perceive nature, to form a positive attitude towards it. They should enrich children with knowledge about natural phenomena, develop their humane and aesthetic qualities.

## REFERENCES:

1. Umumiy o'rta ta'limning Davlat ta'lim standarti va o'quv dasturi. Ta'lim taraqqiyoti. 3 - maxsus son –Sharq nashriyot matbaa kontserni 1999 - yil.
2. Nishonboeva M.G. Biologiya darslarida ekologik tarbiya. Toshkent –O'qituvchi|| 1992 -yil.
3. G'ulomov P.N. Geografiya va tabiatdan foydalanish. Toshkent –O'qituvchi/1985 - yil.

<sup>2</sup> Vatanparvarlik tuyg'usini shakllantirishda ta'lim - tarbiyaning o'zviyligi. Prof. E. Chorievning tahriri ostida. Toshkent 1996 - yil.

4. Vatanparvarlik tuyg'usini shakllantirishda ta'lim - tarbiyaning o'zviyiligi. Prof. E. Chorievning tahriri ostida. Toshkent 1996 – yil.
5. Hozirgi zamon tabiatshunosligi kontseptsiyalari. (O'quv qo'llanma). Prof. Dodoboev Yu. Tahrir ostida. Farg'ona-2000.
6. Umumiy o'rta ta'limning davlat ta'lim standarti va o'quv dasturi. Ta'lim taraqqiyoti. 3- maxsus son. –Sharq|| nashriyoti matbaa kontserni. 1999.
7. Nuriddinova M.I. Tabiatshunoslikni o'qitish metodikasi. Cho'lpon nomidagi nashriyot- matbaa ijodiy uyi. Toshkent-2005 yil.
8. To'xtaev A., Hamidov A. Ekologiya asoslari va tabiatni muhofaza qilish. Toshkent—O'qituvchi||. 1994 yil.
9. M. Xamidova, «Expression de déopoétonymes dans des formes et des styles traditionnels», Ayniy Vorislari Xalqaro Elektron J., вып. 1, сс. 140–144, 2023.
10. M. Kh. Khamidova, «Artistic application of depoethonyms in French and Uzbek poetry», Sci. Rep. Bukhara State Univ., т. 4, вып. 3, сс. 210–213, 2020.
11. M. H. Khamidova, «Expression of Metonyms in Traditional Forms and Styles», Best J. Innov. Sci. Res. Dev., т. 2, вып. 5, 2023.
12. M. Xamidova, «French and Uzbek Makollarda Meteonimlar», Sci. Publ. Cent. Buxduuz, т. 32, 2023.
13. [https://renessans-edu.uz/files/books/2024-12-16-08-32-33\\_8c11df42a5b7e0a8faff305f07ae6467.pdf](https://renessans-edu.uz/files/books/2024-12-16-08-32-33_8c11df42a5b7e0a8faff305f07ae6467.pdf)