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DEVELOPMENT OF STUDENT'S KNOWLEDGE USING THE METHOD OF GENERALIZATION IN PRIMARY GRADE MATHEMATICS LESSONS

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ABSTRACT

This article describes how to use the generalization method in elementary school mathematics classes to develop students' critical thinking skills, in-depth mastering of mathematical topics, perfect understanding of mathematical concepts, and ways to draw mathematical conclusions.

KEYWORDS

Generalization, method, repetition, thematic repetition, final repetition, example, rectangle, problem, numbers, whole, concentrate, unit, hundredth, thousandth, polygon, perimeter, side, property, addition, subtraction.

INTRODUCTION

In recent years, the teaching of mathematics in secondary schools in our country, especially in the primary education system, has undergone significant changes in terms of its scope and importance. For example, Article 12 of the Law on Education dated August 27, 1997 is devoted to the teaching of grades 1-4. Clause 3.3.1 of the "National Program for Personnel

Training" in the Republic of Uzbekistan shows the plans for the organization of training in grades 1-4 in the development of continuous education.

Information about scientific research methods, pedagogy cannot be developed without studying and generalizing work experiences related to pedagogical training, without deep research of the pedagogical

process. Modern education equips pedagogy with the general method of scientific knowledge, but pedagogy, like other disciplines, has its own research methods. Scientific research methods are methods of obtaining scientific information for establishing legal relations, establishing relationships and forming scientific theories.

The science of mathematics plays a significant role in the development of a person's intellect and attention, in training determination and will to achieve the desired goal, in ensuring discipline in an algorithmic manner, and in expanding one's thinking. Mathematics is the basis of knowledge of the universe, and it is important for the development of production, science and technology, revealing the specific laws of surrounding events and phenomena. Therefore, mathematical culture is a component of universal human culture. Abandoning the theoretical approach to teaching mathematics, achieving the formation and development of the student's ability to apply mathematical knowledge in everyday life, increasing attention to the manifestation and activation of students' independent thinking skills is the demand of the times.

It is known that the science of mathematics uses the methods of "scientific research" in the process of studying the spatial forms of objects in the existing material world and the quantitative relationship between them. Therefore, in this textbook, an attempt has been made to explain the use of observation and experiment, comparison, analysis, and synthesis, generalization, abstraction, and concretization of scientific research methods in mathematics lessons from a scientific and methodological point of view. The method of formation of thought forms in the process of teaching mathematics is also highlighted, that is, the

logical connections between emotional knowledge (intuition, perception, imagination) and logical knowledge (concept, judgment, conclusion) are revealed. Mathematical concepts and methods of forming them in the minds of students, mathematical judgments and their types, such as axioms, postulates and theorems, are covered.

The application of mathematical conclusion and its inductive, deductive and analogical types in the course of the lesson is shown. Special importance is given to teaching the types of didactic principles in teaching mathematics.

The transition from concepts of species to concepts of gender is called generalization of the concept. In the process of generalization, general character matches are established among the studied concepts, and general thoughts are passed. As can be seen from the above considerations, in the process of generalization, the volume of the generalized concept increases and the content narrows.

It is known that the school geometry course is a logically built science on a deductive basis. That is why all the practical materials in the school mathematics course are aimed at the comprehensive formation of students' logical thinking skills. Students are logical and the formation of thinking abilities requires the consistent application of scientific research methods of teaching to the materials of practical topics solved in mathematics. One such method is the generalization method.

After completing a chapter in school mathematics lessons, repeating and summarizing the subject materials of the same chapter classes are held. Repetition and generalization lessons of previous

material helps to update the acquired knowledge, put them into a simple system and look at the material from a more general point of view. Repetition - generalization lessons in school mathematics lessons can be divided into the following types:

1. Repetition-summarization at the beginning of the academic year.
2. Daily repetition.
3. Thematic repetition-generalization lesson.
4. Final repetition-generalization lesson.

Each revision lesson has its place and purpose. In the review lesson at the beginning of the academic year, the teacher summarizes the content of the main subject materials covered in the previous class and the basic mathematical concepts used in these subjects as much as possible. Mathematics is such a science that the teacher uses the content of previous topics and mathematical concepts in each lesson in the process of explaining the content of a new topic. Such repetition is called a daily repetition lesson.

After completing a chapter of mathematics then separate repetition-generalization lessons are held. Such repetition is called thematic recapitulation-






generalization lesson. Before the thematic review-summary lesson, the teacher should give the students questions that have a logical sequence containing the subject materials of the chapter to be repeated a week in advance, and saying that there will be a thematic review lesson based on these questions should put. Based on these questions, students will prepare in advance for the thematic revision lesson.

The teacher conducts such a repetition lesson using the question-and-answer method. Under the guidance of the teacher, students understand the logical connections between the sequence of topics and the mathematical concepts involved in them. As a result, the students' knowledge of the material of this chapter will have a logical sequence and will be summarized. At the end of the academic year, a revision lesson is allocated based on the plan, such revision is called the final revision lesson.

The following examples are included in the analysis of class textbooks using the generalization method.

Example tasks:

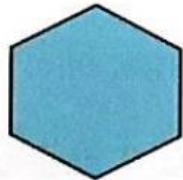
1. The table shows the species of animals included in the Red Book of Uzbekistan. How many animals are there in total?

				
77 ta tur	18 ta tur	16 ta tur	48 ta tur	25 ta tur

1. Shaklning perimetri deb nimaga aytilishini eslang. Shakllarga mos tengliklarni toping.



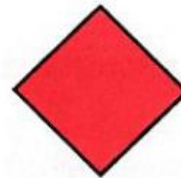
$$P = a$$



$$P = a \cdot 3$$



$$P = a \cdot 6$$



$$P = a \cdot 5$$

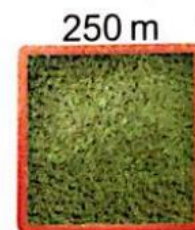


$$P = a \cdot 4$$

Qaysi tenglik uchun shakl topilmadi? Siz unga mos shaklni chiza olasizmi?

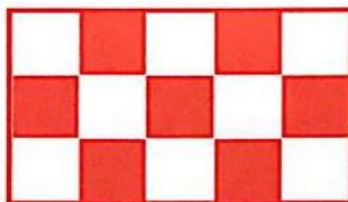
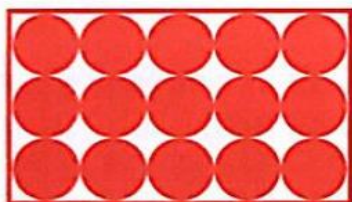
In this example, the perimeters of various shapes are given. Calculating perimeters and finding a common perimeter are examples of this method.

Fermerning uchta yer maydoni bor. Har bir maydon shaklini ayting. Har bir maydon atrofidagi devorning uzunligi qancha?



The perimeter of these shapes is found.

Shaklning yuzi deb nimaga aytiladi? To'g'ri to'rtburchakning yuzini o'lchash uchun bolalar turli xil o'lchamlarni oldilar. Qaysi o'lcham eng qulay?



Sonlarni uchta guruhga bo'ling:

76, 894, 308, 38, 3, 8, 17, 72, 172, 225, 95, 5.

Bir xonali

Ikki xonali

Uch xonali

3, 8, 5

76, 38, 17, 72, 95

894, 308, 172, 225

4. Yozilgan sonlarni o'qing. Ularda nechta raqam bor?

968 minglar	372 birlar	103 minglar	210 birlar	542 minglar	207 birlar
177 minglar	264 birlar	95 minglar	161 birlar	3 minglar	581 birlar

Uch xonali sonlarni ko'rsating. Har bir sonda nechta yuzlik, o'nlik va birlik bor? Nechta yuzlik va birlik bor? Nechta o'nlik va birlik bor?

28

293

11

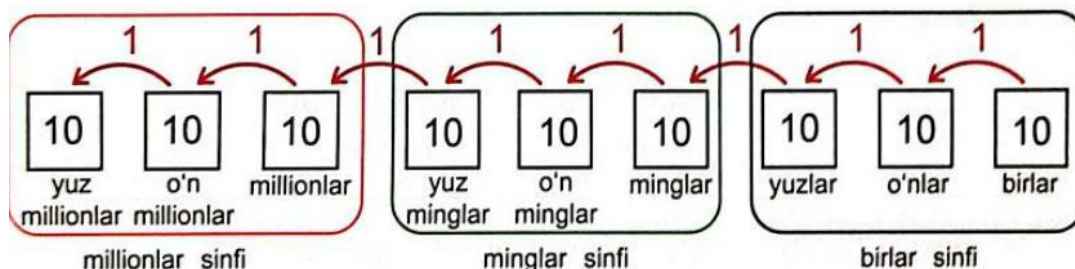
4

2 000

107

325

Sonlarning xonalarini va ularning bog'lanishini eslang.



Minute of logical problems.

The teacher can start each lesson by giving the students a logical problem. As a result, students are more focused, their level of logical thinking increases, their interest in science increases and they try not to miss the daily lesson. The following issues can be presented.

1. Four 2's and four arithmetic operations, 0 using parentheses; 1; 2; 3; 4; 5; 6; 7; 8; 9; Is it possible to form the numbers 10?

2. Sarvar was 10 years old last year. Indinga (the day after tomorrow) is 13. Can it be so?

3. The mother put the cookies on the table and told her sons to take the cookies equally when they returned from school. Anwar was the first to return from school. He took a third of the cookies. Then Sarwar came back, he took a third of the cookies from the table. Sardar was the last to return and took a third of the remaining cookies. If Sardar received 4 cookies, how many cookies were on the table initially? The question in this problem is to find the total number of cookies.

Viloyatdagi barcha maktablarning 4-sinfida 23 ming 405 nafar o'g'il bola va 22 ming 567 nafar qiz bola, 3-sinflarida esa undan 2 ming 760 nafar kam bola o'qiydi. 3- va 4-sinflarda jami qancha o'quvchi o'qiydi?

This word problem asks you to find the total number of students.

Task solution: First, the total number of students of the 4th grade is found.

a) $23405+22567=45912$ We subtract the number of 2760 children from the obtained result. We add the

obtained result and the total number of 4th grade students.

b) $45912-2760=43152$

c) $45912+43152=89064$

Xonatlasdan yubka tikish uchun 12 metr, nimcha uchun undan 4 marta kam, ko'ylak uchun esa yubka va nimchaga birgalikda qancha sarflansa, shuncha mato kerak bo'ladi. Bu kiyimlarni tikish uchun jami qancha xonatlas kerak bo'ladi?

This word problem asks how many meters is the total length of the room.

a) $12:4=3$, first find out how much fabric is needed for the skirt. The value of the skirt and skirt is added to the result.

b) $12+3=15$ The values of all items are added to find the total length of the room.

c) $12+3+15=28$

Tasks for independent work:

Bu – silindr.

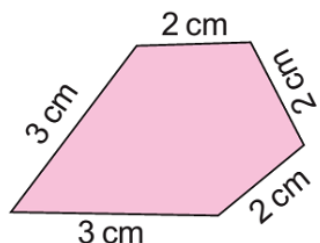
Yana nimalar silindrga o'xshaydi?

Bu – konus.

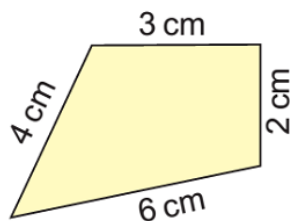
Yana nimalar konusga o'xshaydi?

Konus qanday yasalishini bilasizmi?

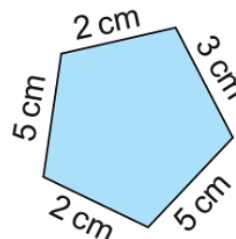
Calculate the perimeters of polygons.



$$P1=3*2+3*2=12$$



$$P2=4+6+3+2=15$$



$$P3=2*2+5*2+3=17$$

CONCLUSION

In conclusion, it is necessary to help primary school students to develop critical thinking skills in performing arithmetic operations, in-depth mastering of mathematical topics, perfect understanding of mathematical concepts, ways of making mathematical conclusions, geometric and spatial shapes. In the process of learning, as well as in the process of working with examples and problems, the method of summarizing provides effective benefits in improving educational activities.

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