METHODOLOGICAL APPROACH TO STUDYING MATHEMATICS FOR PRIMARY SCHOOL

Mavlonov Anvar Oktamovich
Teacher of Tashkent University of Applied Sciences

Abstract. *The noted tasks of pre-mathematical preparation of preschoolers take place in each group of kindergarten, but are specified taking into account age and individual characteristics. For its correct formulation and implementation, it is necessary for the teacher to know the development program of elementary mathematical representations not only of the group with which he works; the use of means, methods, forms and ways of organizing work that are adequate to the tasks and level of development of children; systematic work on the implementation of tasks both in the classroom for the formation of mathematical representations, and in everyday life.*

Keywords: *mathematics, algebra, geometry, teaching methods, element of algebra, formation, education, training.*

Tasks are not solved in isolation, but in a complex, in close connection with each other. Being mainly aimed at the mathematical development of children, they are combined with the fulfillment of the tasks of moral, labor, physical and aesthetic education, i.e., the comprehensive development of the personality of preschool children. An integrated approach to their implementation is the most effective way of teaching young children. Tasks determine the content of pre-mathematical training in kindergarten.

The radical renewal of the content of upbringing and education in preschool organizations is due to the new educational policy of the Republic of Uzbekistan, aimed at reviving the cultural, creating role of education in society. The modern system of preschool education orients society towards a new humanistic approach to the child as a developing personality, in need of understanding and respect for its interests and rights. Preschool childhood is an important stage in the formation of the moral character of a child. It is during these years that value orientations, the first moral ideas, feelings, habits, and relationships that determine the further development of the child's personality are formed [7].

Preschool education remains the world model of the first stage of continuous upbringing and early socialization of children, for the continuity of the educational process connects preschool, school and subsequent years of a child's life. Since the beginning of 2017, an active process of reforming the content of preschool education and training has been ongoing in the republic, including the specification of social and pedagogical functions based on the historical and cultural traditions of the Uzbek people and other ethnic groups living in the country [6].

The formation of students' oral calculation knowledge in primary grades makes the introduction of new technology the main issue in modern teaching methods. In our mathematics textbooks based on the Latin script, the process of performing arithmetic operations in hundreds and thousands is a situation that increases students' thinking skills and determines their creative abilities. The rules of transition from addition to multiplication, multiplication, division concepts, require perfect mastery of the relationships between their components, so that this will be the basis for strengthening the knowledge of the upper class in mathematics. In elementary grades, the

problem of calculating in the most convenient way is the main basis for performing arithmetic operations. It is advisable to enrich the lesson with creative thinking materials rather than being limited to the materials in the textbook. For example, using different representations of multiplication by 10, 100, 1000 will increase students' interest.Along with updating the content of preschool education, this Concept implies the further technologization of the pedagogical process, which will contribute to a different approach in preschool education, fundamentally changing the content of interaction between an adult (parent, teacher, educator) and a child. Today, technologies of personality-oriented, differentiated, projected learning, health-saving technologies, interactive, socio-game techniques and many others are being tested and effectively implemented in the process of educating and educating preschool children. The use of new information and educational technologies by teachers leads to the creation of a specially organized development environment aimed at children acquiring certain knowledge, skills, competencies, in which the goals, content, methods and organizational forms of learning will be mobile and accessible for change within the framework of the preschool organization. The innovative processes provided for in the content of preschool education are primarily aimed at creating a comfortable educational environment that allows children to be healthy, acquire psychological, personal confidence and successfully socialize in the world around them.

II. Methodological foundations and principles

In learning mathematics, the student:

Must be able to imagine:

- about natural numbers, that they are the result of counting and measuring;

- structural features of the series of numbers within 100;

- properties of operations on numbers (substitution property of addition; relationship between addition and subtraction);

Must know:

- terms: addition, addition, subtraction, subtraction, less, more, ... less, ... more;

- sign (symbol) and designations: +, - , >, <, =, l, kg, l, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 ni;

- the table of addition of one-digit numbers (within 10) and the corresponding cases of subtraction (skills brought to the level of automaticity).

Must have the skills to:

- reading and writing numbers from 0 to 100;

- to be able to analyze the series of natural numbers (to say the number that comes before and after the number, to count the numbers omitted in the count, etc.);

- comparison of natural numbers using symbols «>», «<», «=»;

- being able to correctly connect "... more, "... less" relationships with mathematical operations;

- to know the main property of addition and use it in calculations;

- use learned properties of addition and subtraction of numbers within 100 without exceeding ten;

- solving simple arithmetical problems of addition and subtraction.III. Goal and tasks updating the content of preschool education and training.

Must be qualified to:

- placing the specified number of items on the table (on the ground, etc.) (within 10);

- solving calculation issues related to the purchase of items worth up to 10 soums.

Geometric shapes, when measuring them, the student:

They should be able to imagine:

- point, straight line, section, circle, triangle, square, polygon;

- length, length measurement units: centimeter, decimeter, meter.

Must know:

- terms: point, section, circle, square, triangle, angle, length, centimeter, decimeter, meter;

- symbol: cm (centimeter), dm (decimeter), m (meter).

Must have the skills to:

- measure the length of the section using a ruler, write the length of the section in centimeters, decimeters, decimeters and centimeters;

- draw a cross-section at given lengths using a ruler;

- drawing based on the simplest geometric shapes, objects (pictures, models) around;

- to narrow triangle, circle, square, triangle, sections, distinguish these shapes from each other.

Must be qualified to:

- being able to find direction in the environment (walking straight, turning left, right, being able to determine what is in front of, behind, etc.);

- determining the size of a pencil and pen "by eye";

- change the appearance of a geometric shape by removing an element (sticks) of the shape.

Class II

Numbers and calculations

- adding and subtracting numbers within 100 without going through the room (repetition);

- adding and subtracting one-digit numbers within 18 through decimals;

- Oral and written ways of adding and subtracting numbers within 100 across the room.

Interrelation between the components and results of addition and subtraction operations (subtraction of the unknown component).

Solving simple problems related to adding (decrementing) a number by several units, comparing the difference, adding and subtracting unknowns, subtracting unknowns, and subtracting unknowns.

Adding and subtracting numbers, adding (subtracting) and subtracting numbers, adding and subtracting, subtracting and summing (using arithmetic operations and creating expressions) with) to solve content issues related to tension.

Solving simple problems related to (counting) time (within one hour).

Showing and dividing with numbers 0,1,10.

Show and split within a table.

Counting a larger or smaller number than the given number several times; comparing numbers using division.

Simple problems on comparing numbers separately and multiples, on increasing (decrementing) numbers by several units and several times, on weighing price, quantity and how much it costs, on weighing the mass of one object, the number of objects and the mass of an object. Content issues related to integration.

Two-action content problems where one of the actions is the action of showing or dividing.

Key areas for updating content   pre-school education and training

Geometric shapes, their measurement

- To systematize the life experiences they have and to understand that geometric shapes are the image of objects in the environment.

- Getting acquainted with various geometric shapes (angle, rectangle, circle, circle), knowing and using appropriate terms, being able to identify these shapes, getting to know some of their properties;

- To learn how to tighten the remeters of various eyepieces;

- The unit of face measurement is sq. to get acquainted with cm (square centimeter), to learn to narrow the face of the pupil.

In learning mathematics, the student:

Must be able to imagine:

- display grouping and distribution properties;

- interdependence of arithmetic operations;

- numerical and letter expressions and the differences between them.

They should know:

- terms: addition, additions and sum; subtraction, decrement, divisor and difference; expression and the value of expression; multiplication, seer, seer and seer; division, divisor, divisor and division; ...times less and ...times more; right angle and rectangle; circle, circle center and circle radius;

- signs (signs) and designations; " □ " (display sign) and " : " (division sign); x (iks);

- table of addition of one-digit numbers and corresponding cases of subtraction (skills brought to an automated level);

- display table and corresponding cases of division;

- 2□3 operations in expressions, such as expressions with parentheses.

Must have the skills to:

- perform oral addition and subtraction of numbers within 100 based on learned methods;

- to be able to calculate addition and subtraction of numbers up to 100 by writing them in columns;

- to be able to express the main property of display and use it in calculations;

- calculate the value of the one-variable expression in the given values of this variable; choosing simple problems and solving them on the basis of connections between action components;

- solving the learned 1□2 practical text problems.

Must be qualified to:

- solving calculation issues related to the purchase of items worth up to 20 soums.

Geometric shapes, when measuring them, the student:

Must be able to imagine:

- the face of the form;

Must know:

- terms: right angle, rectangle; circle, circle center, circle radius;

- designations: mm (millimeter), sq.cm (square centimeter).

Must have the skills to:

- draw circles and circles using a circle;

- tighten the pupil remeter.

Must be qualified to:

- being able to find direction in the environment (change direction on the go);

- arrangement of items according to their different signs, length (width, height);

- change the appearance of geometric shapes by changing the positions of elements (sticks).

Class III

Numbers and calculations

- to have an idea about the natural numbers within 1000, to understand the specific features of the structure of the natural series of numbers;

- mastering the decimal notation of numbers;

- to have an idea about Roman numerals and their use;

- mastering the methods of adding and subtracting numbers within 1000 (written and spoken);

- mastering the methods of showing and dividing numbers within 100 outside the table;

- mastering the methods of showing and dividing numbers ending in zeros into one-digit numbers, whole tens and whole hundreds;

- to teach how to divide a number with a remainder;

- mastering the written methods of showing and dividing a three-digit number into a one-digit number;

- to have an idea about the order of actions in bracketed and unbracketed expressions containing 2□3 actions;

- correct equations of the form $x + 123 = 140$, $x – 436 = 152$, $x □ 4 = 160$, $810 : x = 135$ (based on the selection method and the relationship between the given and the sought number) and learning to solve quickly;

- gaining experience in solving various textual problems with 1□2 actions;

- to have an idea about the units of mass measurement: ton, centner, kilogram, gram, and their compatibility.

- to have ideas about units of measurement of time: hour, minute, day, year, month, week, second, century and their compatibility.

Geometric shapes, their measurement

- to continue to systematize their life experiences and to understand that geometric shapes are the image of objects in the environment;

- introduction to the unit of measurement of length - kilometer and its definition: km (kilometer);

- to have an understanding of the relationship between length measurement units: kilometers, meters, decimeters, centimeters and millimeters;

- face measurement unit - square decimeter and its definition: familiarization with kv.dm (square decimeter);

- to learn how to draw dimensions and surfaces of shapes by different methods (measurements, counting cells);

- narrowing familiar forms from complex forms;

- ability to change the appearance of geometric shapes.

In learning mathematics, the student:

Must be able to imagine:

- a series of natural numbers within 1000;

- numbering with Roman numerals;

- right angles; wrong angles.

They should know:

- the sequence of numbers from 0 to 1000, the specific features of the structure of this sequence of numbers;

- to know the table of units of measurement of magnitude (length, mass, time) and to apply this knowledge in the practice of measurement and solving problems;

- to know the interrelationships between quantities such as price, quantity, value, rate, total mass, and to apply such knowledge in solving textual problems.

Must have the skills to:

- read, write and compare numbers within 1000;

- perform four arithmetic operations correctly orally in cases where actions are performed within 100 and within 1000; checking the correctness of calculations;

- Add and subtract numbers within 1000 in writing; showing and dividing a three-digit number into a one-digit number; checking the correctness of calculations;

- correctly apply the rules for performing actions in expressions with 2□3 actions (with and without parentheses);

- Solving problems with 1□2 actions (with forming an expression based on actions).

Must be qualified to:

- solving calculation problems related to everyday household situations (buying, collecting, weighing, etc.);

- determining the time according to the clock (in hours and minutes).

Geometric shapes, when measuring them, the student:

Must be able to imagine:

- length measurement unit - kilometer and its designation: km (kilometer);

- surface measurement unit - square decimeter and its definition is sq. dm (square decimeter).

Must know:

- relationships between length units;

- methods of changing the appearance of geometric shapes.

Must have the skills to:

- to be able to narrow down learned geometric shapes not only separately, but also from objects, models, pictures, drawings in the environment, which appear in various combinations with other shapes;

- measure the length of the cross-section (the sum of the lengths of the sides of a rectangle) using a ruler and draw a cross-section of the given length.

Must be qualified to:

- being able to find a direction to the environment (choosing a direction during movement, etc.);

- comparison and arrangement of objects by face and mass;

- counting the sizes of different things by eye.

Class IV

Numbers and calculations

Familiarity with numbers in a million.

Get an idea of the units and thousands classes and the relationships between them.

To have an idea about rational and non-rational number systems.

Learn to perform four arithmetic operations within a million (addition and subtraction of any blind-digit numbers; representation and division of any blind-digit numbers by two- and three-digit numbers) correctly and quickly .

Strengthening of survival skills.

Learning to correctly and quickly perform the values of simple numerical expressions involving 1-3 operations.

Learning to quickly solve not so complicated equations.

Strengthening connections between quantities used in solving problems of different nature.

Having experience in solving various text problems with 1-2 actions.

Geometric shapes, their measurement.

Familiarity with geometric objects: sphere, cube.

Generalization of knowledge about geometric bodies and flat shapes.

In learning mathematics, the student:

Must be able to imagine:

- numbers in millions;

- the infinity of the series of natural numbers;

- in the example of the decimal number system, numbers are written in different number systems;

- positive and negative counting systems.

They should know:

- reading numbers within 1000000; writing the number in the form of the sum of the room additions;

- counting techniques (counting in the right and reverse order, counting in pairs and tens, telling the number that comes before and after the number);

- mutual comparison of natural numbers: correct use of «>», «<», and «=» signs;

- remember the results of tabular cases of addition, subtraction, multiplication and division, perform oral calculations within 100 in simple cases.

Must have the skills to:

- reading and writing numbers within 1000000;

- on the basis of understanding the relationships between written addition of numbers, subtraction of three-digit and four-digit numbers, multiplication and division by one-digit and two-digit numbers, addition and subtraction, multiplication and division checking the soundness;

- written addition and subtraction of numbers with blind digits and checking the correctness of calculation results;

- showing and dividing blind numbers into one-digit and two-digit numbers in writing and checking the correctness of the calculation results;

- compressing the value of a numerical expression with 2-3 operations (including parentheses);

- to understand the meaning of the relations "... more", "... less", "... times more", "... times less", "all", "remained", "equal" and to be able to correctly connect them with arithmetic operations, to be able to solve problems based on these concepts;

- solving problems of practical content using connections between quantities (product price, quantity and value, path, speed and time in a straight line).

Must be qualified to:

- to be able to compare and organize according to different symptoms: length, face, mass, capacity;

- to be able to determine the time according to the clock (in hours and minutes);

- to be able to perform household-life (trade, measuring, weighing, etc.) work.

Geometric shapes, when measuring them, the student:

1. Must be able to imagine:

- various geometric objects (sphere, cube) and some of their properties.

2. Must know:

- recognize cross sections, triangles, rectangles, rectangles, squares, polygons and circles in pictures;

- getting to know and understand the environment, geometric shapes;

- to know the length measurement units (mm, cm, dm, m, km), the basic ratios among them, which of them is suitable for the purpose of use in necessary cases, surface measurement units (sq.cm, sq.dm, to understand sq.m).

Must have the skills to:

- measure the length of the section, make a section of a given length, measure the length of the section by eye;

- making rectangles, squares, triangles and circles using a ruler, ruler, circle;

- angle remeter, calculation of the surface of a rectangle and the surface of shapes made of square units;

- calculation of the size of the studied geometric bodies when solving problems.

Must be qualified to:

- being able to find a destination in the environment (planning a route, being able to choose a way of movement, etc.);

- to be able to visually estimate the sizes;

- to be able to perform independent construction work (taking into account the possibilities of using various geometric shapes).

2. Extracurricular organization of education forms

"Extracurricular work" in mathematics refers to voluntary training of students based on the material related to the program, organized outside of class.

1. The nature and types of extracurricular activities in mathematics

Extracurricular activities are aimed at deepening and expanding students' mathematical knowledge, practicing solving complex examples and problems, and introducing them to some questions that reveal aspects of mathematics related to life and are not included in the program.

The following types of extracurricular activities are found: Mathematical clubs, Olympiads, interesting mathematical evenings, mathematical excursions. Also publishing a math newspaper, organizing math quizzes and corners. Extracurricular activities in mathematics are

activities based on the principle of voluntariness, based on the material related to the program organized by students outside of class.

The following are implemented through extracurricular activities: deepening and expanding knowledge and practical skills; development of students' logical thinking, resourcefulness, and mathematical intelligence; to increase interest in mathematics, to find gifted and talented children, to educate demandingness, will, love of work, independence, organization and humanity.

The main goals of the teacher in working on this topic are:

1) introduce students to the meaning of addition and subtraction, multiplication and division operations;

2) To ensure students' conscious use of calculation methods:

a) The method of adding and subtracting numbers by parts (individually or in groups).

b) The method of addition using the permutation property of the sum;

d) The method of subtraction based on knowing the connections between the sum and the addends, using the knowledge of the appropriate case of addition when subtracting numbers or the skill of finding the second addendum for one of the sum and addends

3) Formation of the skills of addition and subtraction, multiplication and division (learning) In 10, the work of learning addition and subtraction can be divided into several interconnected stages. Developing students' oral and written calculation skills is one of the main directions of the mathematics program. Before learning arithmetic operations, it is necessary to convey its meaning and content to children's minds. This task is carried out on the basis of performing various practical tasks. For example, the meaning of adding and subtracting the topic "ten" is carried out using operations such as combining the elements of 2 sets and separating its parts from the set. Studying the relationships between the components of multiplication and its result serves as a basis for studying the operation of division.

REFERENCES

1. 1.Djumayev M.I The transformation of те english language's variants in contemporary great Britain. Educational process science and innovation international scientific journal volume 2 Issue 4 April 2023 Uif-2022: 8.2 | Issn: 2181-3337 | Scientists.Uz   19-27 *https://doi.org/10.5281/zenodo.7818607*

2. Djumaev M.I. Some Considerations of Teaching Mathematics Inuzbek Primary School. Journal of Mathematical & Computer Applications. SRC/JMCA-123. *J Mathe & Comp Appli, 2023 Volume 2(2): 1-5* ISSN: 2754-6705

3. Джумаев М.И. Перспективы совершенствования преподавания математики в школе, колледже и вузе Республики Узбекистан. Ямало.Нанецк Россия «Профессиональное образование арктических регионов» № 1, март, 2023. № 6(147) 3-6 ст https://arctic-journal.ru/index.php/prof

4. Djumaev M.I. Some Considerations of Teaching Mathematics Inuzbek Primary School.Journal of Mathematical & Computer Applications. Received: March 28, 2023; Accepted: April 03, 2023, Published: April 22, 2023 ISSN: 2754-6705 1-5

5. 5.Djumaev M.I. Формирование элементарных математических представлений у детей в дошкольном возрасте с использованием и без наглядных материалов. Глобальный научный потенциал» , ИД ТМБ принт, СПб.№ 6 (147) 2023 г. http://globaljournals.ru/

6. 6.Djumaev M.I. Methodological principles of the student's independent work form under the supervising of the teacher in process of modern education https://doi.org/10.5281/zenodo.7772930

7. 7.Dzhumaev Zh.M Scientific and practical foundations of studying the subject "Technology" in primary school. Professional education and society. — 2021. — No. 2(38). — 300 s. ISSN 2227-9652. 166-174

8. 8.Dzhumaev Zh.M. As an integral part of the educational activities of junior schoolchildren in the system of developmental education. Materials of the international scientific and practical online conference on the topic: "Prospects for the development of science and education in modern society: problems and solutions" October 19, 2021 Termiz . 912-915

9. 9.Dzhumaev Zh.M Random events. Lesson-lecture. Modern problems of mathematical physics and mathematical modeling. Program of the international scientific and practical conference. December 3-4, 2021. Karshi. 240-244

10. 10.Dzhumaev Zh.M Activation of forms and methods of teaching students in educational activities. Quarterly Scientific, theoretical and practical journal Professional education and society. Moskaa. - 2022. - No. 1 (41). — 300 s. ISSN 2227-9652 171-179

11. 11.Driga , V.I. Development of the professional career of a modern teacher in conditions of creative education / V.I. Driga // Standards and monitoring in education.— 2012.— No. 4.— P. 48–51

12. 12.Loktionova TE, Sergeev MG . A comfortable educational environment in an educational organization: a modern approach to design. Vocational education and society . - 2018. - No. 3 (27). - 43-106 s.

13. 13.Peterson L.G. Modeling as a means of formation before the representations of the concept of function in 4-6 classes of high school. Dis. for a job . student step. Cand. ped . sciences. -M., 1984. -201s.

14. 14.The National School Cirriculum, Cirriculum and Assesment Guide. CDC-HKEAA Committee. Hong Kong. http://www.emb.gov.hk/cr

15. 15.Ginsburg A., Leinwand S., and Decker K., "Informing Grades 1-6 Standards Development: What Can Be Learned from High-Performing Hong Kong, Korea, and Singapore?" American Institutes for Research, 2009.

16. 16.California Common Core State Standards. Mathematics. Electronic Edition. Adopted by the California State Board of Education August 2010 and modified January 2013. ISBN 978-0-8011-1748-8.

17. Zhumaev M.E. Methods of teaching mathematics for elementary grades: a Textbook. Bayyoz. Tashkent, 2023 .-- 296 p.

18. Davydov V.V. The psychological theory of educational activities and methods of elementary education, based on a meaningful generalization. - Tomsk, 1992 .-- 112 p.

19. Peterson L.G. Modeling as a means of forming ideas about the concept of function in grades 4–6 of high school. Dis. for a job. student step. Cand. ped sciences. - M., 1984. - 201 p.