

**ISSUES OF FAMILIARIZING PRESCHOOL CHILDREN WITH QUANTITIES IN THE  
FORMATION OF MATHEMATICAL IDEAS****Omonova Gulomdon Davlatovna**Teacher of the Department of "Pedagogy and Psychology" of Angren University,  
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**Annotatsiya.** Maktabgacha yoshdagi bolalarda matematik tasavvurlarni shakllantirishda buyumlarning, predmetlarning o'lchami va ularni o'lchash haqidagi tasavvurlarni shakllantirish. O'lchash haqida tushuncha, o'lchamning asosiy xususiyatlari, ilk va maktabgacha yoshda predmetlarning o'lchamini idrok qilishning o'ziga xos xususiyatlari. Hissiy bilish-ko'lam haqidagi tasavvurlarni shakllantirishning asosidir. Mazkur maqolada predmetlar o'lchamini idrok qilish va taqqoslashda so'zning roli, maktabgacha yoshdagi bolalarni kattaliklar, o'lchash faoliyati, narsalarning shakli bilan tanishtirish uslubiyatini yoritiladi hamda kattaliklarning asosiy xossalari ochib beriladi.

**Kalit so'zlar.** Kattalik, miqdor, o'lcham, kata, kichik, baland, past, qalin, ingichka, predmet.

**Аннотация.** Развитие представлений о величине предметов и их измерении в процессе формирования математических представлений у детей дошкольного возраста. Понятие о величине у детей раннего и дошкольного возраста, основные свойства величины и особенности восприятия величины предметов. Основой развития представлений о величине является чувственное восприятие. В данной статье рассматривается роль слов в восприятии и сравнении размеров предметов, методика ознакомления детей дошкольного возраста с величиной, измерительная деятельность и форма предметов, раскрываются основные свойства величины.

**Ключевые слова.** Размер, количество, измерение, большой, маленький, высокий, низкий, толстый, тонкий, объект.

**Annotation.** Developing concepts of the size of objects and their measurement in the process of developing mathematical concepts in preschool children. The concept of size in young and preschool children, the basic properties of size, and the characteristics of perceiving the size of objects. Sensory perception is the foundation for developing concepts of size. This article examines the role of words in perceiving and comparing the sizes of objects, methods for introducing preschool children to size, measurement activities, and the shape of objects, and reveals the basic properties of size.

**Keywords.** Size, quantity, measurement, big, small, tall, short, thick, thin, object.

**Introduction.** In the formation of elementary mathematical representations in preschool children in the MTT, great importance is attached to the skills of comparing objects by size, carrying out measuring activities, determining the shapes of objects and other skills in the program-size section.

This article covers the methodology for introducing preschool children to sizes, measuring

activities, the shape of objects, and reveals the main properties of sizes.

Sizes. The process of forming mathematical representations in preschool children is one of the important stages aimed at developing the child's thinking, observation, comparative and analytical abilities. In this process, familiarization with the sizes of objects plays an important role. In the formation of mathematical representations, issues that familiarize children with the sizes of objects play a certain role.

In giving a correct and complete description of any object, the importance of the size of the object is no less important than the importance of its other main properties. The size of the object can be described only on the basis of comparison.

The essence of the concept of size

Size is a mathematical category that expresses the measurable properties of objects, such as length, width, height, volume, mass, and quantity. Preschool children initially acquire this concept through their senses, that is, through seeing, touching, and comparing.

Italian scientist Maria Montessori explains the perception of size in children in relation to sensory development. With the help of the educational materials she developed ("length rods", "weight bricks", "volume cylinders"), children understand size through their own sensory experience.

According to Montessori, the child "first feels, then thinks", therefore, independent activities and practical exercises are the most effective methods for imparting knowledge about size.

The Montessori concept of size is formed in the following three stages:

1. Sensory stage - the child observes, touches, and feels the differences between objects.
2. Comparison stage - the child compares two or more objects (for example, "which one is longer?", "which one is heavier?").
3. Naming stage - the child expresses the learned differences in words ("this is a long stick", "this is the largest cube").

According to Montessori, the child's intellectual development occurs primarily through the senses, therefore, she put forward the idea that "the child learns through his hands." The main ideas in the formation of the concept of size:

1. The priority of sensory activity.

According to Montessori, concepts such as size, shape, weight, and volume are initially formed on the basis of the child's sensory experience. The child feels their differences by touching, comparing, and sorting objects and draws conclusions based on his own experience.

### Learning through special didactic materials.

She created a system of “sensory materials” — with the help of these tools (for example, length sticks, colored towers, weight bricks, cylinders), the child learns to measure, compare, and sort quantities. Montessori noted that in this process, the senses of sight, hearing, touch, and movement work together.

#### 1. Teaching based on practical experience.

Montessori said: “Give the child the opportunity to observe and try with his own hands, not to think.” Therefore, in studying quantities, she prioritized practical activities over theoretical concepts. By measuring length, weight, or volume, the child connects the concept of quantity with real life.

#### 2. Developing logical thinking through observation and sorting.

In the process of working with quantities, the child arranges and compares objects in a row, and through this begins to understand the concepts of order, balance, and proportion. According to Montessori, this process develops the child's ability to think logically and analyze.

#### 3. The principle of freedom and independence.

The child independently chooses his activities and corrects his own mistakes. This is very important for Montessori: through experience, the child gains a deeper understanding of the great, which leads to the formation of a true understanding.

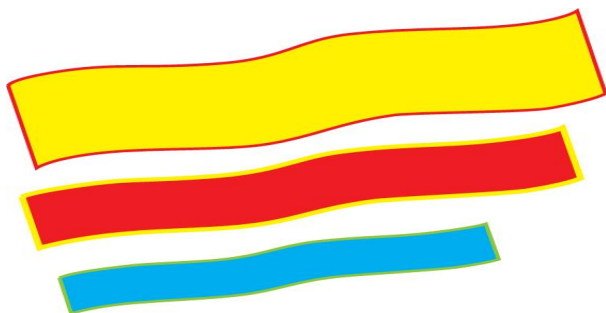


There are a number of objects for which the terms "big-small" cannot be used. For example, a ribbon can be long, short, wide or thin (narrow); a skipping rope can be long or short, etc.

At the same time, observations and special studies show that preschool children prefer to use the words big-small, more-less when determining the sizes of objects. This is due, firstly, to the fact that children cannot differentiate the individual lengths of objects (length, width, height), establish dimensional relationships between them and cannot define each of them in words, and secondly, adults themselves often use very general definitions of size instead of a precise definition of size. use the terms big and small. So, in order to accurately determine the sizes of objects, children need to be taught to distinguish the length parameters of objects and establish appropriate relationships between them. Only numbers can give clarity to these relationships. In this regard, it may be more effective to simultaneously develop children's concepts of size, while developing their ideas about numbers and calculation skills. Therefore, the following system of

developing knowledge about size in children can be considered appropriate: from differentiating distance parameters and establishing measurement relationships between them (using measurements) it is necessary to bring the sizes of objects to the assessment and determination of their sizes as a whole, because E.G. Vasuro shows: True generalization occurs only after the differentiation of objects according to their important properties. An important feature of determining the size of objects as a whole is the size relationships of distance parameters.

Preschool children are constantly faced with the need to know the quantitative assessment of sizes in their daily lives, in various activities, work activities, and games. However, this knowledge is scattered and unclear until it is specifically taught. For example, when imagining the concept of "big", children add any characteristic of a large quantity (high, tall, wide, deep), for example, instead of saying "longer", children say "big", and children imagine "small" as "low, narrow". The concept of "equal" has been displaced from children's speech by the concept of "the same", and the word "the same" has acquired an extremely broad meaning: children use this word to determine the results of comparing objects by color, shape, material of manufacture, and sometimes size and quantity.



### **Introducing children to the quantity and size of objects in the middle group**

Quantity, size. To teach children to compare objects (up to 3, 4, 5) by placing them on top of each other according to their length and width.

To teach them to compare the thickness and thinness of objects, to correctly use the words thick, thin, the same in speech.

To teach them to compare several objects (up to 5) of different lengths and widths by placing them on top of each other in increasing and decreasing order of length and width (the widest, narrowest, narrowest, narrowest strip).




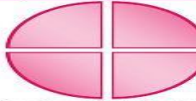


Size. In the younger group, children were taught to find a sign (length, width) from different strips. At this stage, preschool children should simultaneously master the skills of finding length, width and comparing them. For example, the teacher distributes ribbons of 2 different colors and different lengths, but the same width, to all children and asks the children The teacher gives the task of finding which ribbon is long and which is short (short) using a familiar method (for example, placing it side by side). Then he offers to choose a long strip and run his finger along its length. The teacher asks how wide the strip is? and runs his hand along the width of the strip,

and then runs his hand along its length. The children should be asked whether the length (height) of the strip is large or the width (width) is large, and then it should be explained that the length is large and the width is small. Even by looking at the shortest strip, the teacher leads the children to a similar conclusion as above. At the end of the lesson, the children can be offered to compare the widths of the strips. Children put one strip on top of another and make sure that, although they are different in length, they are equal in width (width).

In the middle group, children should be taught to notice small differences in length, width, and height between objects, and to compare more than two objects of different sizes



BALAND – PAST

 Butun doira ikkiga bo'linsa yarimta hosil bo'ladi.	 Doiraning 2 dan bir bo'lagi yarimta deyiladi.
 Doira to'rtga bo'linsa chorakta hosil bo'ladi	 Doiraning 4 dan bir bo'lagi chorakta deyiladi.
 Doira sakkizga bo'linsa nimchorakta hosil bo'ladi.	 Doiraning 8 dan bir bo'lagi nimchorakta deyiladi.

Qaysi daraxt baland?  
Qaysi daraxt past?



### To introduce children to quantity, sizes in the preparatory group.

Quantity, size. To introduce conditional measurement. To teach to measure and compare the width, length of objects using conditional measurement.

To teach to measure liquid and pouring objects using conditional units of measurement and to express the measurement result numerically.

To teach to divide various objects (fruits, vegetables, etc.) into two equal parts, to teach to call the resulting parts half, one-half.

To continue teaching children to measure the width, length of objects using conditional measurement and to express the measurement result numerically and to teach to designate with numbers.

To teach to divide various objects (geometric shapes, fruits, etc.) into ten equal parts.

To continue to develop the ability to measure by eye, to teach to check their own measurements by measuring with a unit of measurement.

Size. In the preparatory group for school, at the beginning of the school year, children strengthen their ability to determine the length, width, and height of objects. Then they are taught to measure and compare the lengths, widths, and heights of objects using conditional measurements. First of all, children need to be explained the meaning and importance of measurement, show measurement methods, and tell the rules that must be followed when measuring. After that, the child will master the methods of measuring various objects in practice.

It is advisable to start classes with measuring the volumes of scattered objects. This is because measuring solid objects is more interesting than measuring distances. In addition, measuring the volume of solid objects is less laborious than measuring the volume of liquids. In the second part of the first lesson, children can be introduced to measuring the lengths of objects.

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