

**SENSORY EDUCATION AS A BASIS FOR
THE FORMATION OF ELEMENTARY
MATHEMATICAL REPRESENTATIONS
IN CHILDREN OF PRESCHOOL AGE
WITH SEVERE VIOLATIONS OF
SPEECH**

Content:

1. The essence, tasks and content of sensory education of children with severe violations of speech.
2. Conditions and means of sensory education.
3. Formation of sensory standards of color, shape, size.
4. Development of various forms of perception in the classroom, in the process of learning game activity, self-service and domestic work.
6. Creating conditions for sensory education in the process of holding regime moments.

1. The essence, tasks and content of sensory education of children with severe violations of speech.

The goal is to teach the child to perceive the surrounding world in all the richness of its colors, smells, sounds, help him to master a variety of practical actions that will be useful in everyday life. This direction includes stimulation of the activity of the visual, auditory, tactile, taste and olfactory analyzers.

Sensory development is the development of perception and the formation of ideas about the external properties of an object.

Sensory education is a consistent systematic familiarization of the child with the sensory culture of mankind. Sensory culture is based on the assimilation of sensory standards, which are allocated for all five sense organs (spectrum colors, geometric figures, phonemes of the native language, scale of musical sounds, etc.).

Assimilation of the sensory standard is not only the proper naming of it, but also the use as a yardstick for evaluating the properties of other objects, that is, its knowledge in a passive vocabulary is allowed and active use in object-practical actions.

The tasks of sensory education:

- 1) the formation in children of systems of perceptual actions;
- 2) the formation in children of systems of sensory standards - generalized ideas about the properties, qualities and relationships of objects;
- 3) the formation in children of the skills to apply independently the systems of perceptual actions and the system of standards in practical and cognitive activity.

Sensory actions: viewing, feeling, tapping, sniffing, licking, rolling, etc.

Simultaneously with the development of perceptual actions, the main mental operations are formed:

- 1) the analysis of objects; comparison (in form, size, size, color) detection of
- 2) the same properties for different objects and finding different qualities in related objects;
- 3) the formation of generalized methods of examination through perceptive actions (saw, heard, touched, tried - learned).

Examination of objects is one of the main methods of sensory education.

Features of sensory development of preschool children with severe violations of speech:

Children with the first level of speech development:

- 1) are not oriented in space and time;
- 2) can not name colors, do not manipulate quantities, forms.

Children with a second level of speech development:

- 1) is limited to enumeration of directly perceived objects and actions, ignoring their properties - size, shape, color;
- 2) Do not orient in space and time;
- 3) the same word can be used to refer to many items that have similarities in form, purpose, or other characteristics.

Children with a third level of speech development:

- 1) usually no longer have difficulty in naming objects, actions, signs, qualities and states that they are familiar with from life experience, but do not use difficult words and expressions for them;
- 2) there are difficulties in determining space and time.

2. Conditions and means of sensory education

The conditions for sensory education are:

1. meaningful, productive activity of children: productive activity (drawing, modeling, applique, design) not only creates favorable conditions for the development of sensations and perceptions, but also causes the need for mastering form, color, spatial orientations;
2. use of various means and forms of organization of training: classes, didactic games, didactic exercises.

For classes with children of preschool age with severe violations of speech it is advisable to use several types of didactic toys, different in nature of the game actions with them, programmed in their constructions:

- 1) **toys for stringing** (rings, bushings, balls, cubes, hemispheres having holes for stringing and intended for collection of pyramids);
- 2) **geometric bodies** (balls, cubes, prisms, parallelepipeds, etc., intended for rolling, pushing into holes, for performing actions on grouping and correlating them by color, shape and size);

3) **didactic toys, consisting of geometric figures-liners** (cubes, cones, cylinders, hemispheres intended for embedding and overlapping, selection by color and shape);

4) **popular collapsible didactic toys** (nesting dolls, barrels, eggs, etc., which are used for embedding, familiarizing children with the size of objects, and when selecting them according to color and size - to consolidate the skill of grouping);

5) **small story toys** (typewriters, fir-trees, mushrooms, animal figurines) and items selected according to certain characteristics (boxes, cups, etc.).

Stages of formation of various sensory representations:

- attraction of attention to the feature of the object (color, shape, size).
- correlation of the characteristic with the sensory standard.
- connection of the resulting view with the word.
- the formation of the image of perception of the feature, its isolation in the surrounding environment.
- inclusion of the formed image in children's activity (drawing, designing).

3. Formation of sensory standards of color, shape, magnitude

The formation can be carried out **in three main strategies:**

1. organization of the search of the standard, identical to the given sample.

The child searches for a given element in the system of standards according to a pattern that is in sight (or within reach). The teacher teaches the child to move through a system of sensory standards, presented in a series or matrix.

2. organization of the search for the standard by presentation (mnemonic image).

The teacher shows the child a sample, asks him to remember, and then takes the sample out of sight. From the child it is required to find the given standard, relying on the mnemonic image.

3. the formation of a stable relationship between the standard and the word.

The preparatory stage is the naming of objects and their properties. Then the search for a standard is organized according to its name, according to a verbal description.

Stages of familiarization with the individual properties of objects

The value

1. The choice of two things is more or less.
2. Laying out homogeneous objects of different sizes into two groups according to the principle "such is not the same".
3. The choice of objects of one size from a group of homogeneous multi-items.
4. The choice of two things is equal to the third.
5. Sorting of dissimilar items by size.
6. Estimation of the ratio of the parts of the object to the size.
7. Selection of different dimensions of the object (length, width, height, etc.).
8. Fixing the standard - the alignment of objects in decreasing (increasing) series.
9. Performing tasks on verbal instructions.

The form

1. Pushing objects of different shapes into the corresponding holes (form accounting when performing elementary actions).
2. The choice of objects in the form of the principle "this is not the same."
3. Unfolding items that differ sharply in form.
4. Laying out items that are close in shape.
5. Selection of two predefined forms when choosing from four.
6. Tasks for analytical perception of form.

Analytical perception of form implies the ability to break an object into elements that correspond to one or another of the samples, and determine their relationship among themselves.

The standard forms are geometric forms. Flat figures are more generalized than volumetric ones, they reflect the side of the shape of the object that is most essential for perception - its outline. When examining the form, a **tactile analyzer** is additionally used.

In the classroom you can use the games "Geometric lotto", dominoes "Subject - form", "Pick up a figure to the contour", "Pick up different objects on the form".

Colour

1. Choice of objects of the same color; consecutive acquaintance of the child with various colors.
2. Grouping of objects, different in form, size, purpose, having the same color.
3. Sorting items of two or more colors:
 - a) contrasting;
 - b) close in color.
4. Connection of word-names with specific colors, while children of an early age do not need to memorize the names of colors.
5. Grouping and sorting by color, represented by different shades.
6. Division and recognition of shades.
7. Performing exercises on the analytical perception of color.

4. Development of various forms of perception in the classroom, in the process of learning game activity, self-service and domestic work

Visual perception

The main tasks of development and correction of visual perception:

- 1) formation of ability to peer;
- 2) recognition and naming of color, shape, etc .;
- 3) comparison and grouping by external characteristics; the development of visual selective perception (the interpretation of what we see, including through the understanding of such elements as similarity - difference, image - background, ability to visually complement the part to the whole).

Auditory perception.

The main tasks of development and correction of auditory perception:

- 1) to form an ability to listen, to recognize familiar voices, to distinguish noise, to relate an object to sound, to determine the remoteness of an object;
- 2) develop a phonemic hearing.

For correction and development, games such as "Minute of Silence", "Sea Shell", "Hidden Sound", onomatopoeia for birds, animals, imitation and differentiation of voices, voice modulation are used.

Tactile perception

The main tasks of development and correction of auditory perception:

- 1) discrimination of the structure and quality of the surface;
- 2) assimilation characteristics of shape, size, texture, quality surface, temperature, weight.

Tactile stimulation, except for a variety of massage movements of hands (stroking, rubbing, tapping, tingling, patting), is carried out with the help of a fur, a brush, a brush, a feather, a sponge, flecks, etc. You can use a hairdryer, causing a cold, warm, air, rub the cream, comb, tickle, tingle.

As the equipment used: "keyboards" M. Montessori, pieces of various types of fabric, samples of various wood, plastic; volumetric, relief images of objects, figures, letters; weight sets.

Typical tasks for children with severe violations of speech: find the same surface, pick up a pair, pick up the structure, count the number of objects to the fingers.

5. Creating conditions for sensory education in the process of diverse types of activities

An essential factor is the relationship of learning in the classroom with the reinforcement of knowledge and skills in everyday life: on a walk, during self-employment, etc.

So, in games, children are constantly familiarized with the qualities of objects. When washing, children learn the temperature properties of water, while walking - the properties of snow, in the process of games, when sledding, take into account the gravity of objects.

Collecting a matryoshka, placing liners, dressing small and large dolls, they get acquainted with the size. Children take the form of objects in games with building material, by pushing objects into the holes of the "entertaining box", etc.

The assimilation of sensory standards occurs through a variety of activities:

- observations in nature and experimentation with natural materials (cones, chestnuts, walnuts, pebbles, cereals)
"Compare the leaves", "Whose traces are more?", "Feed the little animals," "What is above the bush or tree?"
- games - experiments with water (pouring, pouring, throwing everything into the water, catching from the water, tinting, changing the temperature ...)
- games with sand, earth and clay: "Sensitive palms" ...
- developing games with objects (collapsible toys, dolls, pyramids, volumetric inserts, frames-liners, boxes with holes for pushing, cubes, balls ...) "Toy-matryoshka"; "We will collect a pyramid", "Show me what I will say"; "Toy store", "Mailbox".

- didactic games for the formation of ideas about the color: "Pick up the color", "Find the pair", "Plant the doll in the train", "Dress beautiful dolls", "Colored glades", "Lay down the boxes," "Hide the mouse," "Find wand," " Balloons, "" Collect the beads in color "
- didactic games for forming ideas about the form: "Pass the ball", "Mailbox", various "Frames-liners", Montessori frames, "Magic bag", "Circle all (silhouettes)", "Find an object of a similar shape", "Pick up cover to the bank »...
- didactic games to form ideas about the magnitude: "What's more?", "Big-small", "Matryoshka built", "Shred the bumps (snowflakes, carrots, rabbits, leaves ...)," "Close the window "...

- didactic games for the formation of ideas about orientation in space: "What has changed?", "Up-down", "Where is the ball?", "Assignments", "Let's collect squares", "Split pictures", "Where are our pens?", "Find half", "Toys play hide and seek", "What the bears, rabbits, chanterelles lack ..." ...
- didactic games for the formation of ideas about taste, smell, texture, sounding: "Know by touch," "Wonderful bag", "What and where is heard?", "Music hide-and-seek," "Who woke the puppy?", "Who lives in the house ? ", "Vegetables and fruit ", "Food "...
- didactic games for the formation of ideas about time: "When it happens?", "We will collect dolls for a walk" ...
- design: games in a large and small builder (plastic, wooden, soft ...), games with the designer-lego (large and small), games with developing cubes "Fold the pattern", games with a mosaic of several types (in shape and size) , "Beads for stringing", games with different laces ...

- drawing: games with paints of 8 colors (on a white background, color, on a wet, inside a contour, fingers ...)
- molding, applique: games with foil, color. paper, cardboard, cotton, napkins, glue, plasticine, dough ...
- games with dolls, bears, dogs: "Katya treats friends." "We'll put the doll to sleep," "Bathing dolls," "Dolls going for a walk," "I'll comb the hair."
- games with cars: "Ride along the path," "Put in the garage," "Move the balls," "Oh, I'll pour!" ...
- games with large-sized toys-engines (wheelchairs, rockers, bicycles, strollers ...)
- motor tasks using physical culture equipment

- moving games, imitation exercises, ball games
- walking on the "Paths of Health" ...
- ball games in a circle
- games with hands with a small object (a massage ball, walnut, hexahedral pencil, "catalogue" of cork ...)
- "A wonderful little bag" (one for everyone, one for everyone).
- games with various musical instruments (tambourine, drum, rattle, ratchet, pipe ...)
- games with self-made sounding objects
- theatrical games (planar, finger theaters, bibabo dolls ...)
- a folk toy (nevalyashki, whistles ...)

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