

QUALITATIVE PREPARATION OF CHILDREN 6-7 YEARS OLD FOR SCHOOL THROUGH RESEARCH-COGNITIVE AND EXPERIMENTAL RESEARCH ACTIVITIES

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<https://doi.org/10.5281/zenodo.7824322>

Abstract. *In this article represented implementation of safe and interesting experiences in preschool educational organizations by establishing a mini laboratory area for school preparatory group children, awakening of interest of school-preparing group children in science, formation of their ability to think logically and freely, developing, finding simple scientific answers to environmental processes through research and experimental activities, and preparing them for school quality by developing cognitive processes.*

Keywords: *preschool education, laboratory, research, experience, development, logical thinking, school preparation group children, safe, knowledge process, formation, science and nature, environment, ecology, quality education.*

As we all know, children are researchers by nature! Every thing and event quickly attracts their attention. Being very curious about new and unusual things, the process of research and experimentation is their favorite educational activity. As a result of observations and questionnaires in pre-school educational organizations, it became clear that children showed great interest in experimental activities compared to other types of activities. In this regard, pedagogic personnel in the preschool education system should keep pace with the times, constantly improve the skills of creative thinking personnel, analyze advanced methods of the preschool education system at the level of developed countries, put them into practice, interest children and state education. The program focuses on the introduction of experimental activities.

The experience of research-cognition and experiment-research activities with 6-7-year-old children.

"Miracle Water"

The purpose of experiments on the theme of water.

Educational: introducing the whole environment, giving an understanding of the state and properties of water, awakening interest in science through laboratory experiments designed for children.

Developmental: to increase children's speech and vocabulary, to form logical, creative and free thinking, to expand the small world view, to strengthen attention and memory, to develop small fine hand motor skills, to increase positive competences in the mental state of the child.

Educational: To understand the importance of saving water and using it wisely, teaching to use laboratory equipments carefully. Teaching compliance with hygiene rules. Inculcating that we are the children of great ancestors, instilling a sense of national pride and increasing the effectiveness of striving to be like them.

Educator: Hello dear children.

Children: Hello.

Educator: (The teacher enters the group and there are umbrellas.) Guys, how many umbrellas are there?

Children: Mrs Aziza, it is raining today.

Educator: Yes, of course, correct children. So I came with my own umbrella! I did not ask you this question for nothing. Do you know what rain is? How does it appear?

Child 1: Rain is water that falls from the sky.

Child 2: Rain is water that falls from a dark cloud

Child 3: Rain is water that falls in drops

Child 4: Rain is sparkling water.

Educator: Congratulations, children, all your answers are correct. Now listen carefully! Rain is evaporated water. Rivers, seas and oceans are made up of a large amount of water. A certain part of the water in the seas and oceans evaporates and rises to the sky. Clouds are formed from them. The wind drives a certain part of the clouds to land and rain and snow fall. And from the rain and snow, rivers are formed. This is how water circulates in nature. (Children are shown a poster or slide)

Today, let's do some interesting experiments related to "Water" with you!

Children: Yeah! Great!

Educator: First, children, let's talk about water. Who has any thoughts?

Child 5: We drink water. We wash our hands.

Child 6: We pour water on flowers and trees.

Child 7: We wash fruits and vegetables with water!

Educator: Congratulations! Your answers are correct! Now listen carefully. We will get even more accurate information! (water pictures are shown)

Water is the main factor that ensures the existence of life on earth. Water is necessary for a person throughout his life: to satisfy thirst, to prepare food, to wash, and for drinking. Since ancient times, people have chosen places close to water sources to live. Water is the second human need after oxygen. A human can live for six weeks without food, but not more than a week without water. About 70 percent of the Earth's surface is covered by water. But 1% of this water is suitable for drinking. Therefore, we should use this gift of nature wisely! No matter what form water is, we always need it! For example;

Water exists in nature in three different states: That is, in solid aggregate state (ice), liquid and vapor state. During our experiments, you can see these situations with your own eyes.

According to the properties of water: pure water at room temperature is odorless, tasteless and almost colorless.

I want to tell you interesting information! The most common product full of water is watermelon!

Educator: Little explorers, shall we start our interesting experiments?

Children: Yes!

Experiment 1: The state of water.

"The shapelessness of water"

Things and equipment needed for the experiment: 3 glasses of different shapes, water. (The glass must be numbered: 1,2,3)

The course of the experiment:

Educator: Children, we have 3 cups of different shapes. Watch carefully! I pour water into a glass shaped like number 1. Then I pour the water in the glass number 1 into the 2nd glass. I pour the water from the 2nd glass into the 3rd. Did you guys pay attention?

Child 8: Yes! Water looked different in different glasses.

Educator: Congratulations! So, from our experience, we came to the conclusion that water is liquid and does not have its own shape! I have a question for you guys! Why does the water in the oceans not freeze?

Child 9: Because there is a lot of water in the oceans.

Child 10: Because the oceans are warm!

Educator: Children, let's start our next interesting experiment and we will find out after the experiment why water does not freeze in the oceans. So, let's start!

"Solid (ice) state of water"

"Why doesn't the water in the ocean freeze?"

Things and equipment needed for the experiment:

Two plastic glasses, a teaspoon of salt, cold water, a marker, a thermometer for measuring the temperature of water, a refrigerator.

Duration of the experiment: (2.5-3 hours of time allocated for the experimental process)

1. Pour the same amount of cold water into two glasses of the same size.
2. Add a teaspoon of salt to one of the glasses and mix well. Do not add anything to the water in the second glass.
3. Mark the glass with the salty liquid mixture using a marker. Because you need to know exactly which glass of water is salty.
4. Put the water in both glasses in the freezer of the refrigerator for at least 2.5-3 hours.
5. After 2.5-3 hours, we take the glasses out of the refrigerator. What do you see? Pay attention, what kind of liquid is frozen in them?

Educator: What happened?

Children's answers...

Educator: The liquid with a salty mixture in the glass is not frozen, we can see only ice crystals in it! You will know this by the marked marker. In the second glass, unsalted water is frozen.

To measure the temperature of ice cubes, put them in a glass and place a thermometer. The thermometer shows 0 degrees.

Why does this happen? (answer of the experiment)

Education: Salt makes it difficult for water to freeze. Because the freezing temperature of salty water is much lower than the temperature of unsalted water. It is known that ordinary drinking water without salt freezes at 0 degrees. Ocean and sea water contain salt. Therefore, it prevents the complete freezing of oceans and seas in winter.

"Vapor state of water"

Things and equipment needed for the experiment:

Water, a special container for boiling water, a special gas stove, a thermometer for measuring water temperature.

The course of the experiment:

1. Pour a certain amount of cold water into the container (flask).
2. Place the container with the liquid on the gas stove and insert the thermometer into it.

3. Turn on the stove and raise the heat level.
4. We monitor the process. Let's pay attention to the thermometer.
5. Pour boiled water into the flask. Cover the upper part with the help of the second transparent tube. The flask at the top fills with steam and water bubbles form on the walls.

Educator: What happened?

Children's answers...

Why does this happen? (answer of the experiment)

Educator: When a liquid is heated, bubbles filled with steam and air begins to form on the bottom and walls of the container. Cold water begins to heat up and make a sound. Water boils at 100 degrees. During the boiling process, we witness the evaporation of water into a vapor state.

Educator: Let's have a little rest, children! "Eye exercise". (Magnetic exercises are not recommended in the laboratory area.)

Experiment 2. "Properties of water"

"Water is colorless"

Things and equipment needed for the experiment: 3 glasses, milk, raspberry juice, water
(The glasses should be numbered: 1,2,3)

The course of the experiment:

Educator: Children, we have liquids in 3 identical glasses. Look carefully, what color are they?

Child 11: The liquid in glass 1 is white

Child 12: The liquid in glass 2 is red

Child 13: The water in the 3rd glass... Mrs Aziza, this liquid is colorless.

Educator: Congratulations, all your answers are correct!

"Water is odorless"

Now try to smell these liquids.

Child 14: (smells the liquid in the 1st glass; smells the liquids in the 2nd-3rd glasses)

The smell of 1st is milk's! the 2nd - the smell of raspberry is coming from the liquid! And
3... 3- Mrs Aziza, it is odorless!

Educator: Congratulations, children!

"Water is tasteless"

Educator: Children, please taste these liquids and can you tell me how it is.

Child 15: This is milk.

Child 16: Mrs Aziza, but this liquid is tasteless.

Child 17: This is raspberry juice.

Educator: Congratulations! So, the water is colorless, odorless and tasteless! Guys, it's raining outside, right? We know that raindrops are transparent. But have you ever thought? What if the drops are colored? Let's make it rain with you in our group.

Children: Is that possible? How?

Educator: Of course! After all, we are in a magical laboratory!

Things and equipment needed for the experiment:

Special foam (foam for shaving), transparent container, cold water, pipette, food coloring.

The course of the experiment:

1. We put cold water in the container more than half of it.

2. Fill the rest of the container with special foam.

3. Then we slowly drip food coloring onto the special foam using a pipette.

4. Turn to watch carefully!

Educator: What happened?

Children's answers...

Educator: Colored drops pass through the foam layer and fall to the bottom of the container.

Why does this happen? (answer of the experiment)

Education: Colored drops begin to fall to the bottom of the container, because the weight of the colored drops is much higher than the foam. Due to the weight of the foam, the colored drops, even at the top of the foam, are able to penetrate its thick layer after a certain time. The same process happens with rain clouds!

Educator:

Here, children, today we did interesting experiments with you on the topic of "Miracle Water". We got acquainted with the condition and properties of water...

Children: We also rained colorful raindrops!

Educator: Of course! We got a lot of information about water. But scientists have not yet revealed its secrets in detail. They are conducting research in this regard. And I want to reward you with a wonderful, tasty and healthy drink for your active participation in laboratory experiments! The name of this liquid is "Kisel"! Thank you!

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