ETHIOPIAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

METHODOLOGY OF INTERESTING STUDENTS IN GENERAL SECONDARY SCHOOLS IN MATHEMATICS

Erkinova Odinahon

Andijan State Pedagogical Institute, Faculty of Exact and Natural Sciences,

student of Mathematics and Informatics

Sulaymonova Rohilahon

Andijan State Pedagogical Institute, Faculty of Exact and Natural Sciences,

student of Mathematics and Informatics

Abstract: The article discusses the importance of organizing extracurricular activities in order to attract primary school students to the subject of mathematics, to better master the teaching materials and to develop their skills.

Keywords: Elementary school, students, math, extracurricular activities, students' knowledge and practical skills, logical.

INTRODUCTION

Extracurricular work in mathematics is defined as voluntary activities of students based on the material related to the program, organized outside of class. The main tasks of extracurricular work are:

- deepening and expanding students' knowledge and practical skills;

- students' logical thinking, ingenuity, mathematics

Develop their intelligence;

- to increase their interest in mathematics, to find gifted and talented children;

- education of demandingness, will, attitude to work, independence, organization and humanity.

The following types of extracurricular activities are found:

1. Mathematical 10 minutes, hours.

2. Mathematics circles.

3. Mathematical competitions and Olympiads.

4. Fun math nights and quizzes.

5. Mathematical press.

eISSN: 2349-5715 pISSN: 2349-5707
Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

6. Mathematical excursion.

LITERATURE ANALYSIS AND METHODOLOGY

Extracurricular activities have some distinctive features compared to classes:

1. It does not apply to the mathematics program by its content. But the imparted knowledge should match the strength of the students.

2. Extracurricular activities should attract all students as much as possible, that is, it should be interesting. Even low-achieving students can become active learners through curiosity.

3. Extracurricular activities are organized based on the principle of discretion, but it is necessary to ensure interest. These classes are not graded, but students who actively participate are encouraged.

4. Depending on the content and form of the training, it can last from 10-12 minutes to 1 hour.

5. Diversity of content and forms of extracurricular activities.

Extracurricular activities include: interesting word problems, brain teasers, humor problems, missing or redundant information problems, logical problems, interesting mathematical events, arithmetic puzzles, games, tricks, puzzles, historical facts includes giving information and others. ;

The method of organizing and conducting extracurricular activities should be based on the following:

1. The lesson is conducted taking into account the knowledge, skills and abilities acquired by students.

2. Extracurricular activities are organized in order to be based on the principles of students' desires, hobbies, and creativity and to satisfy their individual opinions.

3. The forms of conducting extracurricular activities are different from classes, and the interesting side is stronger. A necessary condition for this is the complexity of planning and systematic work.

It should be noted that individual and group trainings should not be conducted systematically, on the contrary, the main work should be done in the classroom. Out-of-class work has a number of specific features compared to the form of a classroom lesson:

1. In terms of its content, it is not limited by the state program, mathematical material should be given in accordance with the knowledge and skills of students.

2. It is not yet possible to talk about the persistent interest of children in mathematics in primary grades.

3. Ingenuity, intelligence, quick calculations, use of effective methods of solving should be encouraged.

eISSN: 2349-5715 pISSN: 2349-5707
Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

4. Lessons are scheduled for 45 minutes, and depending on the content and forms of extracurricular activities, they can be scheduled for 10-12 minutes or an hour.

5. Extracurricular activities are characterized by a variety of content, depending on the form and type (interesting math classes, clubs, quizzes, etc.)

RESULTS

In order to arouse interest and support in mathematics minutes, these tasks should not be similar to ordinary mathematical tasks given in classes.

All kinds of interesting arithmetical and geometrical problems, more difficult problems, funny problems, problem-solving problems, interesting squares, rebuses, riddles, etc. serve as material for training.

Math club is one of the most common types of work outside of the formal classroom in mathematics. Its main task is in-depth work with students who have a special interest in mathematics.

Math circle work differs from fun math classes in the following ways:

When choosing students for the mathematics club, it is necessary to take into account their special interests, inclinations and capabilities in relation to mathematics.

They independently prepare visual aids (abacuses, cards with examples for some games, etc.), thoroughly prepare for conducting math evenings, etc.

In order to hold a math club, you need to make a work plan for it in advance. As an example, here are the approximate plans of some club activities in the 1st grade in the second half of the year:

I. Training. 1. Inventing rebuses. 2. Interesting questions about addition. 3. Exercises for testing knowledge of counting within 100. 4. Issues that require ingenuity. 5. It's a joke. 6. Riddles. 7. Happy counting (out of 20) game.

II. Training. 1. Inventing rebuses. 2. Poetic issues that require ingenuity. 3. Exercises on the analysis of geometric figures. 4. It's a joke. 5.

Game "Fill the number".

III. Training. Class-type group exercise.

The content of the use (possibilities) of historical materials in elementary mathematics lessons.

DISCUSSION

In fact, the great thinkers of the Uzbek people have created new ideas and doctrines in their researches and discoveries in the distant past to educate people to be polite, highly moral, perfect,

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

hardworking, and patriotic. These are. Musa al-Khwarizmi (783-850), Abu Rayhan Beruni (973-1048), Ibn Sina (980-1037); Omar Khayyam (1048-1131); Nasreddin al-Tusi (1201-1274); Mirza Ulug'bek (1394-1449), Ghiyasiddin al-Koshi; The rich scientific and spiritual heritage left to us by Ali Kushchi (1402-1474) and others is the basis of our opinion. In the works of these scholars, great attention is paid to children's study, work, manners, and the duties of teachers in this work.

In particular, according to the opinion of Nasriddin al-Tusi, the teacher should feel the responsibility to win the trust of the students and take a place in their hearts in order to influence the intelligence of the students. Abu Nasr Farabi says that one of the main tasks of a teacher is to focus on the acquisition of moral standards, practical skills and qualifications of young people. According to Ibn Sina, knowledge of historical sources is a noble and useful activity. He emphasizes that the study of science and things with the help of the human mind is considered important in the activity of a person. In the pedagogical work of Abu Rayhan Beruni, his ideas about the purpose, tasks and place of education, the development of a person and the young generation are built on the basis of humanism in the true sense. The most important of the pedagogical ideas of Abu Rayhan Beruni is the need to acquire knowledge carefully and firmly.

It is the sacred duty of every spiritual and creative specialist to deeply study the scientific heritage left by our ancestors and apply it to the process of education and training. Below, we recommend an example of how to conduct a class-type circle activity to improve the effectiveness of mathematics lessons in elementary grades.

Topic: Introduction to time Purpose of the lesson:

1. To introduce students to the history of the creation of the watch.

2. Teaching children to use a watch in everyday life.

3. Improving children's knowledge by solving problems.

4. Solving arithmetic problems.

5. Development of students' interest. Equipment:

1. Various watch designs.

2. Chest.

3. An exhibition with a written issue.

Methods: exposition, story, conversation. I. Organizational part.

II. The course of the training. Teacher's story.

People created clocks to measure time. A sundial appeared before. They were used only during the day.

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

In Egyptian sundials, 2 long boards are fixed in the form of an angle. When the sun rises in the morning, they mark the shadow on a long board. This time was considered to be 6:00 in the morning. Then they divided the length of the morning shadow into 6 parts. As a result, there were 12 hours, 6 hours during the day and 6 hours in the evening. Later, other watches appeared. They also made it possible to determine the evening time. For example: there are water clocks, sand clocks, mechanical and electronic clocks.

The dial of modern watches is divided into 12. 1 to 12 are written in front of each section. The small hand of the clock is arranged so that it goes from 1 hour to 2 numbers in 1 hour. The big hand of the clock passes all numbers in 1 hour.

1. Solve the problems:

1. Determine the time by looking at the clock.

2. How are the hands of the clock positioned at the following times:

a) 4 to 15 minutes later?

b) 48 minutes after 9?

a) After 15 to 55 minutes?

b) 10 minutes after 22?

3. The plane took off at 7:15 a.m. and landed back at 10:20 a.m. How long was the plane in the air?

4. The train left the station at 9:18 a.m. and arrived at the destination at 9:56 p.m. How long did the train run?

5. The theater performance ended at 10:50 in the evening. If it lasted 3 hours and 20 minutes, determine when the show started.

6. Compare.

3 hours and 48 minutes

36 seconds and 48 minutes

5 hours 6 minutes and 56 minutes 20 minutes 40 seconds and 200 seconds 3 minutes 8 seconds and 48 seconds 2. Follow the steps:

A) 9-4:1+(70-8-8)-1-0.-3 5

B) 729- (5 – 5) + (27:3 + 6) – 48 : (2-3)

V) 8000 : 4 : 20 – 1- (20-7 – 50): (705 – 5)

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

G) 90-50 + (80-4 + 0-1): 10 – (9-9 : 3 +1)

D) 19-0+(13- 8): 5-296-86:1

E) (48 + 5 : 5) : 7 – 6 • (29 – 28): 3

3. "Guys, while we were solving arithmetical problems, a magic box appeared. There is an exhibition in front of him, where tasks are given.

The magic chest can be opened by solving this task.

1. We need to solve examples of multiplication and division rules.

4900: 700=

800-4= 360 : 69 =

70-900= 5600:8 = 5000-4= 24000: 30 = homework:

The teacher writes the homework on the board.

Children, in today's lesson, we got acquainted with the history of the creation of the clock, we learned how to use it in everyday life. Check your knowledge at home.

The purpose of the mathematics club is to increase interest in mathematics, to activate thinking, to develop mathematical skills, to develop independent work skills, to teach students to believe in their own strength and to overcome difficulties that may arise in advance.

The content of the circle work includes solving problems and examples, introducing questions that increase students' thinking, forming the ability to move from concrete to abstract, and making the necessary generalizations.

Performing exercises of an interesting nature plays a key role. It includes arithmetic tricks, fun squares, riddles, math games and more.

It is advisable to conduct circle training twice a month and last 25-35 minutes in the 2nd grade, 40-45 minutes in the 3rd-4th grade. The following activities are often carried out in the mathematics circle:

1. Independent example and problem solving.

2. Solving examples and problems with different methods.

For example, starting from the number 1, performing arithmetic operations with the help of numbers, forming the number I.

L+2+3+4+5-6-7+8-9=l 1-2- (3+4)+5+6-7-8-91 (12-3+4-5+6): 7+8-9=l 1 +2+3+4-5+6+7-8-9= 1

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

2. Independent use of visualization.

An example. The weight of the bread is 90 gr. How much does the bread weigh?

During the circle, mathematical focus, games, and riddles will help the participants have an interesting time.

For example, tricks about the ordering property of the set of natural numbers.

Purpose: to strengthen counting skills, develop logical thinking, interesting square (in I-2 class), 9 consecutive numbers are written in 9 cells.

For example, numbers starting from 4 are added to make 20 numbers from 4 to 12. Mathematical Choices:

Competitions are competitions in solving problems of different difficulty, interesting thinking problems and tasks. Students who try their best to solve problems according to the wishes of the students and who have sufficient preparation participate.

Below are examples of conducting contests in 2nd grades. Grade 2 (Quarter 4).

1. You can knit 3 gloves from two balls of woolen yarn. How many balls of yarn are needed to knit 9 such gloves?

2. Vali and Salim had 30 candies. After they ate, Wali had 9 candies and Salim had 5 candies. How many candies did they eat?

3. How many triangles are there in the figure?

3. Numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 are given. How many examples can be given where the number 15 is obtained by adding three of the numbers in this row.

The topic of the contest and the time of its holding are determined in advance:

1. Calculation of complex calculations using the most convenient method of comparison.

2. Logical problems and exercises.

3. Resourcefulness, intelligence exercises.

4. A problem whose calculations are complicated.

5. Statements on the legacy of Eastern thinkers, tasks related to the clarification of the content of algebraic and geometric forms.

Mathematical Olympiads

eISSN: 2349-5715 pISSN: 2349-5707
Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

Olympiads are held on a larger scale than contests and demonstrate the success of students in learning mathematics.

Depending on the composition of the participants of the Olympiad, it can be held in schools, districts and cities. The Olympiad will be held from the 4th grade, and the winners will be encouraged in school wall newspapers and student meetings.

Math papers and quizzes

Riddles, examples and tasks containing various mathematical content are given in pictures in the newspaper, quiz, and are interesting in nature.

In the quiz, students are given a task that is recommended to be solved. Answers will be delivered to students at the appointed time.

Math quizzes - unlike newspapers only

It consists of problems and questions given to students to solve.

Preparation for mathematics lessons in elementary grades. When preparing for a mathematics lesson, the first topic is to show the place of the lessons included in one system. After that, it is necessary to determine how well the students are prepared for work on the new lesson material, what needs to be repeated for this. Analysis of a mathematics lesson. The analysis and evaluation of the mathematics lesson in elementary grades first of all shows its educational importance, therefore, when finishing the lesson, it is necessary to show how well it was structured and passed, how it was fulfilled at the level of modern psychological and pedagogical requirements, and how the main didactic principles were preserved. The analysis of the lesson should show the structure of its content, time allocation, work performance methods, the used exhibition and other didactic tools. When looking at each aspect of the lesson, it is necessary to take into account how the students' activities are directed, where activity and independence are broken, excitement, and whether they have implemented other educational aspects of the individual.

Lesson analysis can be covered in the following directions: 1. Explaining and justifying the main didactic purpose of the lesson. 2. Analysis of lesson content. 3. Assessment of organization and direction of students' activities. It is necessary to say how many students or all students actively participated in the lesson and acquired knowledge through independent activity, and how to achieve it. 4. Show the role of the exhibition and other didactic aids used in the lesson. 5. Assessment of lesson results. One of the important signs of the assessment is that the lesson has achieved its goal, that each student has worked independently to the best of his ability, and that all of them have been carried out under the guidance of the teacher. When analyzing a lesson, it is necessary to understand that the lesson itself is evaluated, if the pedagogical processes of teaching and educating students are aimed at one goal.

REFERENCES

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 01, Jan-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980

1. Jumayev M.E, Jumayev E.E, Adilxanova N. Boshlanĝich sinflarda matematika o`qitish metodikasi / (KHK uchun) Toshkent. -Ilm Ziyo. 2003 yil.

2. Имомова Ш.М., Норова Ф.Ф. РОЛЬ СОЦИАЛЬНЫХ СЕТЕЙ В ОБРАЗОВАНИИ//UNIVERSUM: ТЕХНИЧЕСКИЕ НАУКИ. №10(103), 2022. С. 30-32.

3. Sh.B.Xoliqov “Ustoz-shogird an’anasi milliy qadriyat” Internet maqola 2016.

4. S.Burxonov, O’.Xudoyorov, Q.Norqulova, N.Ruzikulova va L.Goibova 3-sinf “Matematika” darsligi. Toshkent 2012

5. S.Mardonova G’.I. „Matematikadan test topshiriqlari 2-sinf”- Toshkent.: O’qituvchi, 2007.

6. A.B. Obidova, O.O. Hakimova, 2022.