

# Cool Math Games

"Mathematics is the queen of sciences." "Mathematics is useful because it is difficult." "You need to see the beauty of mathematics!" We have all heard such statements more than once. But did we feel it ourselves? Can ordinary school activities go beyond "two two four"?

In order to explain to children the power, elegance and universality of mathematics, an intensive course "Practical Mathematics" of the Science Festival has been developed. Where they talk not about "familiar" mathematics, but about the one that conquered the whole world. The one that, according to Niels Abel, is "like a scalpel for a surgeon." Mathematics that penetrates the essence of things.

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The program of the course "Practical Mathematics"

Trial lesson. "Secrets of the oral account. Logic games. Math hat. How to multiply in China. "

Lesson 1. "Mathematical logic. How to think and reason. The Dirichlet Principle

The origins of the concept of "logic", the lessons of Socrates. Using simple techniques to solve more advanced logical problems. Causes and effects.

Logical errors and sophisms and paradoxes arising on their basis.

Lesson 2. "Financial Mathematics"

What is inflation? How do banks work? What is the CBRF? Why do I need insurance?

Credit and deposit rate.

Lesson 3. "Geometry. Paper figures and tasks with cuts "

Amazing facts about the ellipse. Acquaintance with various figures such as a tetrahedron, octahedron, hexahedron (cube), icosahedron and dodecahedron. Their duality. Thor. Acquaintance with impossible figures (Penrose Triangle, Blivet, Escher's work). Mobius strip and Klein bottle.

Lesson 4. "Introduction to Combinatorics"

Basic concepts of combinatorics. Combinatorics of automobile and telephone numbers. Hacking passwords.

Lesson 5. "Cryptography and steganography. Mathematical Linguistics

The most famous ciphers of mankind. Linguistic approach to decoding texts.

The decision of linguistic problems. Direct application of combinatorics.

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Lesson 6. "Sequences and patterns"

Interesting logical tasks to continue the sequence. Fibonacci numbers and the golden ratio. The development of savvy + surprise.