



Announcement

about the Competition for a Mathematical Experiment

Primary School No. 11 with Integration Branches in Białystok, Poland, and the Centre for Creative Learning of Mathematics at the Faculty of Mathematics of the University of Białystok, Poland announce the fourth edition of

Competition for a Mathematical Experiment

Aims of the competition:

- popularization of mathematics, forming and strengthening an interest in mathematics,
- raising interest of students in the research method and self-discovery of the laws that govern the world,
- showing maths from the creative and searching side, not only awaiting its passive absorption by students.

The competition is international. Participants of the competition may be students of primary schools, grades VI-VIII, and secondary schools who want to learn mathematics by doing research.

The competition task consists in planning and carrying out an experiment leading to conclusions with a mathematical content, as well as documenting this activity in the form of a presentation (containing photos showing the experiment) or a film and sending this documentation to both of the following addresses: konkursmatematycznosp11@gmail.com and eksperyment@math.uwb.edu.pl (because there are two institutions organizing the competition). If the file containing e.g. a movie is large, attach a link to the place where it is placed in the cloud.

The deadline for submitting works is April 30, 2024.

Works will be assessed in two age groups:

- pupils of grades VI - VIII of the primary schools,
- students of secondary schools.

We understand that for many students, experimenting in mathematics and working with the research method are new things, so we have provided some explanations below.

What is a math experiment?

To put it simply, a mathematical experiment is a concrete, experimental action, which aims to test our assumption regarding the solution of a problem, finding an answer to a question that arose in us as a result of our interest in a given topic. In the beginning there is experience, that is, the observation of events occurring spontaneously or caused by ourselves. For example: we were

interested in whether, knowing the capacity of a cube-shaped vessel, it is possible to calculate the capacity of a vase with the same base, but in the shape of a pyramid (of course, set on a "tip" attached to a decorative base). We carry out the experience of directly checking it by pouring water or other similar activities. A single experience, however, is not an experiment. We enter the experimental phase only when we consciously and in accordance with a certain procedure plan research aimed at enriching our knowledge, i.e. in our example, for example, to discover the relationship between the volumes of the two solids.

The mentioned research procedure includes the following elements (stages of the experiment): observing a phenomenon that interested us,

- formulation of the research problem,
- collecting information from various sources on the topic of interest to us (maybe someone has already dealt with a similar topic?),
- making a hypothesis (i.e. a guess about solving the problem),
- planning activities leading to the verification of the hypothesis, i.e. checking whether our assumptions are correct,
- carrying out these activities,
- collecting the results, development of the results,
- drawing a conclusion.

Your research problems and experiments don't have to be complicated. It is important that the test method is used.

Award-winning and featured works from one of the previous editions are available on the website <https://math.uwb.edu.pl/ckumgal/KonkGaleria/>

Good luck!

On behalf of the organizers of the competition Mathematics
teachers from Primary School No. 11 in Białystok

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