

MATH FOR 21ST CENTURY SCHOOL. THE RUSSIAN EXPERIENCE AND INTERNATIONAL PROSPECTS

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Short description of the Discussion Group: aims and underlying ideas

The origins of Russian mathematical education can be traced back to renowned Leonhard Euler (1707 – 1783). During the last hundred years much has happened to make mathematics and math education in Russia a remarkable part of national culture. First, we should mention: top rank Russian mathematicians A. Kolmogorov, I. Gelfand and others, actively and deeply participated in mathematical education, including this for secondary school, Russian system of mathematical Olympiads, System of high-schools for students gifted in math, Kvant (Russian: for "quantum") magazine in mathematics and physics for school students and teachers. In mid 1980-s Russian mathematical education was extended with the area of "informatica", including fundamentals of mathematical logic and theory of algorithms. ICT tools for mathematical activities are used nowadays for development of algorithmic thinking starting in pre-school and primary school. Such toolkits and environments as dynamic geometry are used to promote experimental and open-ended learning. An inauguration decree (2012) of President Putin started development of the Conceptual Framework for Development of Mathematical Education in Russian Federation. It was approved by the Russian Government in December 2013. We propose to share Russian experience and ideas for further development to be used for the world math education community.

Planned structure:

We assume that Russian participants (more, than 20) will take part in the DG, among them Prof. Sergey L. Atanasyan (MSPU), Prof. Mark I. Bashmakov (Russian Academy of Education, St. Petersburg, RF), Prof. Alexandre V. Borovik (Manchester University, UK), Prof. Ludmila L. Bosova (MSPU), Prof. Alexander P. Karp (Columbia University, USA), Dr. Daud K. Mamiy (Adyghe State University, RF), Prof. Ildar S. Safuanov (Moscow City Pedagogical University) et al. We also collect in advance and will share at the DG some mentions from our colleagues in Russia. Samples of educational materials will be distributed among participants. Russian educational experience will be a starting point and will provide real-life examples for the proposed discussion of international relevance and interest.

Tuesday, 16.30-18.00: Planned timeline	Topic	Material / Working format / presenter
16.30-16.50	Presentation of experiences and achievements of Russian mathematical education.	Presentation with reference to internet and printed material / Prof. Alexei L. SEMENOV
16.50-17.00	Presentation of issues and questions for discussion.	Illustrations and references / Dr. Sergey A. POLIKARPOV
17.00-17.20	A personal Experience in International Employment of Russian Pre-university Math	Invited Lecture / Prof. Mark I. BASHMAKOV
17.20-17.30	Session of short questions and answers.	
17.30-17.45	Discussion with the participants to narrow focus and to choose topics of major importance and interest for the audience for further discussion.	
17.45-17.55	Documentaries on Mathematics and Mathematicians.	Trailers of the movies / Dr. Ekaterina V. EREMENKO
17.55-18.00	Concluding remarks.	

Friday, 16.30-18.00: Planned timeline	Topic	Material / Working format / presenter
16.30-16.45	Short summary of the 1 st day.	Dr. Sergey A. POLIKARPOV
16.45-16.55	Q&A	
16.55-17.20	Planned (at the first meeting or before) presentations and discussions.	Presentations, Videos
17.20-17.35	Emerged presentations and discussions.	
17.35-17.50	Drafting formulation of the DG participants position(s).	Prof. Alexei L. SEMENOV
17.50-18.00	Conclusion.	