

The 34th INTERNATIONAL SCIENCE OLYMPIAD

for Young Mathematicians, Physicists and Chemists

RIGA • VILNIUS • TALLINN • HELSINKI • VÄSTERÅS • ST PETERSBURG



TOPICS

MATHEMATICS

Grade 10	Grade 11	Grade 12
<ol style="list-style-type: none"> 1. Divisibility, prime factorization 2. Rational and irrational numbers 3. Roots 4. Polynomial equations 5. Triangle geometry 	<ol style="list-style-type: none"> 1. Divisibility, prime factorization 2. Nim games 3. Integer solutions of equations 4. Triangle and circle geometry 5. Polynomial functions 	<ol style="list-style-type: none"> 1. Divisibility, prime factorization 2. Probabilities 3. Integer solutions of equations 4. Triangle and circle geometry 5. Number sequences

PHYSICS

Grade 10	Grade 11	Grade 12
<ol style="list-style-type: none"> 1. Calorimetry, heat 2. Electricity (direct current, resistance) 3. Kinematics 4. Archimedes' principle 5. Pressure, density 	<ol style="list-style-type: none"> 1. 10th grade + 2. Mechanisms (forces, equilibrium) 3. Newton's laws 4. Momentum, collisions 5. Work and energy 	<ol style="list-style-type: none"> 1. 11th grade + 2. Electric fields and Coulomb's law 3. Molecular kinetic theory and thermodynamics 4. Mechanical oscillations (harmonic oscillations, pulses and wave motion) 5. Electric and Magnetic fields (incl. induction, charged particles motion through electromagnetic field, forces on charges and conductors)

CHEMISTRY

Grade 10	Grade 11	Grade 12
<ol style="list-style-type: none"> 1. Oxidation reactions – burning materials 2. Formation of acid rain and greenhouse effect 3. Quantitative relations in chemistry 4. Bonding and structure 5. Bonding and structure 	<ol style="list-style-type: none"> 1. Oxidation reactions – burning materials 2. Formation of acid rain and greenhouse effect 3. Quantitative relations in chemistry 4. Acids and bases 5. Oxidation and reduction 	<ol style="list-style-type: none"> 1. Oxidation reactions – burning materials 2. Acids and bases 3. Oxidation and reduction 4. Organic chemistry – structural formula and isomerism 5. Organic chemistry – reaction equations

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Gustav Adolf Grammar School

Tallinn, Estonia