Latvia

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Introduction

Overview of Education System

The Latvian education system is administered at three levels: national, municipal, and institutional. The Parliament (*Saeima*), the Cabinet of Ministers, and the Ministry of Education and Science are the main decision making bodies serving at a national level. The Ministry of Education and Science is the leading state administrative institution in the fields of education and science, as well as in the fields of sports and official language policy. It is responsible for developing draft legislative acts regulating the relevant fields; developing draft policy planning documents; and supervising policy implementation in state administrative institutions, agencies subordinate to the Ministry, and capital companies in which the Ministry is a shareholder.

Municipalities are obligated to provide children residing in their territories access to preschool education and basic education (integrated primary and lower secondary education) at the education institution closest to each child's place of residence. Municipalities are also obligated to provide youth with an opportunity to acquire upper secondary education, as well as to provide opportunities to implement informal education and support extracurricular activities and camps for children. Schools independently develop and implement education programs, hire staff, and manage schools. In particular, the school head (who is employed by the founder) hires the teaching and nonteaching staff, manages the financial resources, and ensures the implementation of regulatory enactments concerning education. The school head may hire deputy directors, who ensure qualitative organization of the education process. Higher education institutions are autonomous in regard to organizational procedure, implementation of study processes, internal rules and regulations, hiring and discharge of academic and technical personnel, and distribution of funding.[1]

The provision of education for children from the age of 5 for the acquisition of basic education and for the acquisition of basic education or the continuation of acquisition of basic education until reaching the age of 18, is mandatory.[2] Formal education includes preschool, basic (integrated primary and lower secondary), upper secondary, and higher education levels. Completion of these programs is confirmed by a state-recognized document on education and professional qualification.[3] It is also possible to obtain compulsory education in vocational schools, in schools

providing education for children with special needs, in evening or boarding schools, in social or pedagogical correction schools or classes, or in other establishments providing compulsory education programs.[4]

The following types of education are available in Latvia:

- General education
- Vocational education
- Academic education

The levels of education are:

- Preschool education
- Basic education (integrated primary and lower secondary education)
- Upper secondary education
- Higher education[5]

A student has the right to acquire education at each level, successively proceeding from one education level to the next.[6] Regulations govern curricula for schools providing integrated primary and lower secondary (i.e., compulsory) education and upper secondary education. At the central level, the curriculum is defined through the general National Standard for Basic Education, Standards for Basic Education for Subjects, and Basic Education Sample Plans. These regulations determine the general aims of schooling and the aims within each subject; they also describe content and time allocation.[7]

The Mathematics Curriculum in Primary and Lower Secondary Grades

According to the current National Core Curriculum for Basic Education, the purpose of mathematics instruction is to develop students' understanding of mathematical methods and to develop skills to use them in exploring the world, in other subjects, and in various activities. The goal of instruction is to offer students the following opportunities:

- To acquire skills to perform operations with real numbers, to use correlation and analytical methods, to study plane geometric shapes and their properties, and to develop spatial understanding
- To acquire skills to study and solve practical problems using mathematical models; obtaining, organizing, and analyzing data; and forecasting expected results
- To develop mathematical thinking by developing skills to make mathematically justified judgments and acquire problem solving experience[8]

Regulations on the general National Standard for Basic Education, Standards for Basic Education for Subjects, and Basic Education Sample Plans enacted by the Cabinet of Ministers, define the key requirements for subject acquisition upon completion of Grades 3, 6, and 9. Thus, basic education in Latvia is divided into three stages: Grades 1 to 3, Grades 4 to 6, and Grades 7 to 9. This structure gives schools and teachers freedom in planning the sequence and duration of content as well as in

choosing what they believe are the most appropriate teaching and learning methods. A useful tool for mathematics teachers is the sample subject program in mathematics for Grades 1 to 9 that was issued in 2005 and amended in 2010 by the National Centre for Education of the Republic of Latvia (*VISC*). It explicitly indicates content to be mastered in each grade to achieve the objectives defined in the standard. Exhibit 1 summarizes the mathematics content defined in the standard based on the sample program in each stage of basic education.

Exhibit 1: Teaching and Learning Content in Mathematics[9]

Development of Mathematical Tools (Instruments)		
Numbers and operations		
Grades 1–3	**Grades 4–6**	**Grades 7–9**
- Four arithmetic operations with natural numbers from 1 to 100 - Numbers up to one thousand - Comparing numbers - Sequence of numbers	- Four arithmetic operations in the range of 1,000 - Operations in writing - Prime numbers - Features of division - Regular parts - Percentage - Natural numbers - The sequence of numbers - Mean arithmetic - Decimal parts - Exponentiation - Proportion - Rational numbers - A module - Cartesian coordinate system - Relationships between whole numbers, percentages, and the value of a percentage - Scale	- Proportion - Percentage tasks - The power of a number by a real exponent, features of exponents - Square roots - Arranging numbers according to the sequence of inclusion $N \subset Z \subset Q \subset R$ - Transformation of numbers in a given set of numbers - Arithmetic operations with numerical expressions, - approximation - Understanding the numerical values of a variable in researching different processes
Algebraic expressions and operations		
Grades 1–3	**Grades 4–6**	**Grades 7–9**
	- Use of letters instead of numbers - Calculating the value of *x* - Recording of calculation algorithms with numbers and letters	- Operations with monomials and polynomials - Shortened multiplication formulas - Identities and equations (linear and quadratic) - Inequalities and double inequalities (linear and quadratic)

Development of Mathematical Tools (Instruments)

		- Functions, their graphs, research of functions (linear, quadratic, and algebraic) - Algebraic parts - Quadratic equations - Finite, infinite, periodic, and nonperiodic sequences - Systems of equations - Systems of two linear inequalities - Arithmetic and geometric progression

Geometric figures

Grades 1–3	Grades 4–6	Grades 7–9
- Points, lines, line segments - Polygons: triangles, quadrangles, pentagons, squares, rectangles - Perimeter - Right angles - Circumference - Rectangular parallelepipeds, cubes	- Circles, circumference, circular sectors - Square of the rectangle - Angles - Rectangular parallelepipeds, surface area, volume - Perpendicular and parallel lines	- Median perpendicular of a line segment - Angle bisectors - Angles formed by two lines crossing a third - Identical, equivalent, and similar figures - Characteristics and area of triangles, convex and nonconvex polygons, parallelograms, rhombi, rectangles, squares, and trapeziums - Circumference, related angles, and area of a circle and a sector - Pythagorean theorem - Trigonometric functions in a right angle triangle - Construction tasks - Perimeter in regular polygons - Perimeter and area of combined figures - Central and axial symmetry - Surface area and volume of right prisms, rectangular prisms, pyramids, regular pyramids, cylinders, cones, and spheres

Application of Mathematics in the Analysis of Natural and Societal Processes

Sizes and measurements, relationships between them

Grades 1–3	Grades 4–6	Grades 7–9
- Length (km, m, dm, cm, mm); mass (kg, g); time (h, min, s); volume (l); money - Relationships between different units of measurement of the same quantity	- Square (ha, a, m^2); mass (t, c); speed (km/h, m/s) - Calculation of distance, knowing the scale	- Expressing quantities applying the formula - Moving from bigger units of measurement to smaller and vice versa

Application of Mathematics in the Analysis of Natural and Societal Processes

Elements of information processing, statistics, and probability theory

Grades 1–3	Grades 4–6	Grades 7–9
- Comparing numbers and measures by their difference or relationship - Reading bar charts - Comparison of objects, sorting by features	- Use of information from different sources (bus, train timetables; TV, radio programs; telephone directory) - Preparing bar charts - Collecting and comparing information - Pie charts - Comparing numerical values of rational numbers or other measures	- Presenting information and getting information from charts - Calculation of percentage in information processing or analysis - Arranging numerical values (real numbers) in increasing or decreasing sequence - Elements of statistics - Grouping elements according to given conditions - Probability of an event in case of equal number of possible outcomes

Development and Study of Mathematical Models with Methods Characteristic to Mathematics

Mathematical language

Grades 1–3	Grades 4–6	Grades 7–9
- Concepts of sum, addend, minuend, subtrahend, difference, multiplier, product, dividend, divisor, division - Mathematical expressions, equality, inequality - Expressing one's view and listening to other views - Sequence of operations in mathematical expressions with and without brackets	- Properties of addition and multiplication operations (commutative, associative, and distributive) - Writing a numeral expression - Precise use of concepts and descriptive explanation - Understanding the necessity of substantiation	- Characteristics of an axiom, definition, and theorem - Writing an expression according to a verbal description - Identifying an axiom, definition, or theorem - Distinguishing substantiations from a descriptive example - Formulating math concepts and statements - Correct use of "if, then," "thus," "all," "at least," "just one," etc.

Development and analysis of mathematical models

Grades 1–3	Grades 4–6	Grades 7–9
- Involvement, participation, presentation of group work, putting forward assumptions in projects connected with everyday situations - Text tasks with several operations	- Solving real life problems; logical sequence operations (algorithm) - Problem solving with numerical models - Noticing regularities applying the information - Use of tables, schemes, bar charts when making a presentation - Use of symbols and descriptions - Presentation of group work in mathematical and projects connected with everyday situations	- Formulating real life problems applying knowledge about equations, inequalities, percentage, proportions, sequences, elements of statistics, and geometry relationships - Individual and group presenting - Use of symbols and descriptions - Researching mathematical relations - Arguing an explicit opinion

As mentioned before, the sample program of mathematics indicates requirements in the frame of each grade. Thus, Exhibit 2 lists content to be mastered according to this program at the end of Grades 4 and 8.

Exhibit 2: Mathematics Content to be Mastered by Grades 4 and 8

Development of Mathematical Tools (Instruments)		
Subtopics	**Completing Grade 4**	**Completing Grade 8**
Numbers and operations	- Four arithmetic operations in the range of 1,000 - Operations in writing - Multiplication and division with a one-digit number	- Proportion - Percentage tasks - Exponentiation with positive integer exponents, features of powers - Square roots - Arranging numbers according to the sequence of inclusion $N \subset Z \subset Q \subset R$ - Transformation of numbers in a given set of numbers - Arithmetic operations with numerical expressions, approximation
Algebraic expressions and operation with them	Use of letters instead of numbers	- Monomials and polynomials, operations with them - Division of polynomials in multipliers, formulas $a^2 - b^2$ and $(a \pm b)^2$ - Identity and equations, linear equations - Linear inequalities, double linear inequalities - Linear function, graph of the function, researching the function - Definition range of algebraic part, algebraic parts and operations with them, key properties of an algebraic part - Quadratic equations, fractional rational equations - Functions $y = \frac{k}{x}$; $y = \sqrt{x}$, their graphs - Finite, infinite, periodic, and nonperiodic sequences
Geometric figures	- Perimeter of triangles, polygons - Circles, circumference	- Midpoint of a line segment, angle bisectors, median perpendicular of a line segment - Angles formed by two lines crossing the third; adjacent and complementary angles

Development of Mathematical Tools (Instruments)		
Subtopics	**Completing Grade 4**	**Completing Grade 8**
		▪ Use of properties and features in task solving
		▪ Identical figures
		▪ Reciprocal placement of figures
		▪ Triangles, medians, bisectors, vertices, and central lines
		▪ Properties of similar triangles
		▪ The sum of the interior angles of a triangle
		▪ Circumference, tangent, reciprocal placement of two circumferences
		▪ Concave and convex polygons
		▪ Area, units of measurement, equivalent figures
		▪ Properties and features of the central line of a triangle; the Pythagorean theorem
		▪ Area formula of a triangle $S_\Delta = \dfrac{(ah)}{2}$
		▪ Concave and convex quadrangles, parallelograms, rhombi, rectangles, squares, trapeziums, and their elements; properties and features of quadrangles; area of parallelogram, rhombi, trapeziums (not applying trigonometry)
		▪ Bow of the circumference, central angle, indented angle, circular sector, circular segment, indented and encircled circle
		▪ Tangent line segments drawn from a point outside the circumference
		▪ The sum of a polygon's angles, size of the angles of a regular polygon

Application of Mathematics in the Analysis of Natural and Societal Processes		
Subtopics	**Completing Grade 4**	**Completing Grade 8**
Sizes and measurements, relations between them	▪ Units of measurements and their abbreviations ▪ Relations between different units of measurement of the same quantity	▪ Expressing quantities applying the formula

Application of Mathematics in the Analysis of Natural and Societal Processes		
Subtopics	**Completing Grade 4**	**Completing Grade 8**
Elements of information processing, statistics and probability theory	▪ Use of information from different sources (bus and train timetables; TV and radio programs; telephone directories)	▪ Presenting information and getting information from charts ▪ Calculating percentage in information processing or analysis ▪ Arranging numerical values (real numbers) in increasing or decreasing sequence ▪ Elements of statistics

Development and Study of Mathematical Models with Methods Characteristic to Mathematics		
Subtopics	**Completing Grade 4**	**Completing Grade 8**
Mathematical language	▪ Properties of addition and multiplication operations (commutative, associative, and distributive)	▪ Properties of an axiom, definition, and theorem ▪ Writing an expression according to a verbal description ▪ Identifying an axiom, definition, or theorem
Development and analysis of mathematical models	▪ Solving real life problems; logical sequence of operations (algorithm)	▪ Formulating real world problems using a linear equation, linear inequality, percent, or proportion ▪ Individual and group presentations ▪ Formulating a real world problem using a fraction equation, elements of statistics, geometry relationships

The Science Curriculum in Primary and Lower Secondary Grades

The content of the subject standards and the programs of their implementation in general comprehensive schools in Latvia are regulated by Regulation No. 468[10] of the Cabinet of Ministers. These regulations were effective during the implementation of TIMSS 2019, and they will be valid until 2020, when the new education standards take effect.

The aim of the subject Natural Sciences is to create and improve students' interest in exploring nature and its processes and develop their understanding about the diversity and unity of the nature to facilitate a positive attitude toward the preservation and improvement of the environment and promote healthy behaviors.

In the Science domain, students recognize, offer, and evaluate explanations of natural phenomena and processes; apply inquiry skills in problem solving, carrying out exploration, evaluating risk, and adhering to safety measures; analyze and evaluate data; express opinions, formulate arguments in multiple ways and draw conclusions from data; and act in a personally responsible manner to promote their health and the health of others and to preserve the environment and promote sustainable use of natural resources.

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Natural Sciences is implemented in general comprehensive basic schools (Grades 1 to 9) as a common subject of the science domain in Grades 1 to 6, but starting in Grade 7, it is differentiated into separate subjects—physics, chemistry, biology, and geography (see Exhibit 3). Grade 8 students are taught all four subjects; each subject has two lessons per week.[11,12]

Exhibit 3: Instructional Time Across Three-Year Grade Span by Science Subject in Grades 1 to 9 in General Comprehensive Schools*

No.	Domain	Grades 1–3	Grades 4–6	Grades 7–9
1	Natural Sciences	208 (6)	210 (6)	
2	Chemistry			140 (4)
3	Physics			140 (4)
4	Biology			210 (6)
5	Geography			210 (6)

*Recommended number of lessons per week across three-year grade span is indicated in parentheses.

Basic Education Grade 4

According to the Standards of Basic Education for Grades 1 to 6, the learning outcomes for Grade 4 Nature Systems and Processes are the following:

- Organisms and life processes—Knows the following concepts: cell, tissues, parts of plants, hygiene, microorganisms.
  - Signs of life—Experimentally substantiates the functioning of plant roots.
  - Plants and mushrooms—Knows the structure, reproduction, and growth of plants and mushrooms. Shows the parts of plants in pictures and nature, experimentally substantiates their importance. Knows the protected plants in Latvia. Identifies plants using the determinants of plants. Groups plants according to forms of life. Understands the adaptability of plants to various conditions of growing; experimentally substantiates the functioning of parts of plants. Compares different parts of plants and forms of life based on observations.
  - Animals—Identifies protected animals in pictures and nature. Groups animals according to their habitat. Notices the similarities and differences in animal behavior (in nature, at home, at the zoo, etc.) Understands the adaptability of different groups of animals to a concrete habitat.
  - Humans—Knows human development stages.
- Earth and its place in the Universe—Applies the following concepts: the atmospheric cover of the Earth (atmosphere), mountains, rocks, and soil.
- Earth in the Solar System—Knows separate constellations, recognizes them in the sky or in models. Understands the representation of the Earth on a globe and a map.
- Earth's lithosphere—Knows the structural parts of the terrestrial globe. Describes the relief of Latvia using a map. Differentiates and compares rocks (gypsite, limestone, dolomite, sandstone, chalk) by particular properties (color, hardness, plasticity). Understands the peculiarities of soil formation. Shows the highest mountain ranges of the

Earth in a map.
- Earth's hydrosphere—Explains how water springs originate.
- Earth's atmosphere—Knows what atmosphere is. Assesses the importance of the atmosphere (the atmospheric cover of the Earth).
- Natural landscapes of the Earth—Knows the geographical arrangement of the natural landscapes.
- Substances and materials
  - Knows the concepts: mass, physical transformation.
  - Qualities of substances and materials—Compares substances by their temperature of melting and boiling using literature data and the results of experiments. Compares materials (rubber, caoutchouc, polyethylene, aluminum, steel, copper, etc.) by their features based on personal observations and data from information sources. Groups natural materials and industrially produced materials.
  - The use of substances and materials—Assesses the possibilities of using materials (glass, wood, steel, aluminum, paper, polyethylene, rubber, wool, etc.).
- Physical processes
  - Light —Understands the spreading of light from different sources. Observes the spreading of light and the emergence of shadows.
  - Sound—Knows that sound is the result of vibrations (e.g., the strings of musical instruments). Performs experiments with sound, changing its volume and pitch.
  - Heat—Knows about the dangers of heat, hot liquids, and other things.
- Interaction of Man and Environment
  - Safety—Knows and observes safety precautions in nature (in water, on ice, in a forest, in a swamp, in the sun, etc.).
  - Environment—Can identify protected natural objects in the nearest vicinity. Has acquired experience to care for living beings and is aware of the necessity of taking care of living beings. Observes the norms of behavior in nature (e.g., protected areas). Can safely collect mushrooms and herbs.
  - Health—Understands the necessity of personal hygiene and maintains appropriate personal hygiene. Understands the importance of a healthy lifestyle and tries to observe a healthy lifestyle. Has a considerate attitude toward one's own health and the health of others.

Basic Education Grade 8

Science in Grade 8 of basic education is taught in separate subjects as follows: two lessons per week in chemistry, two lessons per week in physics, two lessons per week in biology, and two lessons per week in geography. Taking into account that the large number of standards or these separate subjects, we include in the following descriptions only the main themes of these subjects that need to be covered in Grade 8.

- Physics
  - Structure of substances
  - Measurement
  - Mass and density
  - Spreading of light
  - Reflections in mirrors and lenses
  - Light and the light spectrum
  - Sound
  - Thermal phenomena
  - Thermal quantities
  - Thermal processes, thermal engines

The acquisition of all themes connected with physics in Grade 8 is implemented paying attention to understanding physical phenomena and processes; the basics of research activities in physics; and physics and sustainable development.

- Biology
  - Key principles of animals' structure
  - Classification of animals; description, diversity, and importance of protists (mono-cellular organisms)
  - Multicellular, dual-layer animals; adjustments to their habitat; their diversity and importance
  - Invertebrates; adjustments to their habitats, their diversity and importance
  - Structure, diversity, and importance of chordates
  - Diversity of domestic animals
  - Interaction of organisms and the environment
  - Biological diversity and its preservation

The acquisition of all themes connected with biology in Grade 8 is implemented paying special attention to knowledge and understanding of biological systems and processes, the basics of research activities in biology, and biology and sustainable development.

- Chemistry
  - Chemistry as a subject
  - History of the development of chemistry
  - Basics of research activities in chemistry
  - Physical properties and physical transformations of substances
  - Chemical transformations of substances
  - The structure of atoms
  - The structure of a substance
  - Chemical formulas

- Chemical compounds
- Calculations using chemical formulas
- Equations of chemical reactions
- Types of chemical reactions
- Oxidation and combustion of substances
- Pure substances and mixtures
- Solutions; calculations about solutions

The acquisition of all themes connected with chemistry in Grade 8 is implemented paying special attention to knowledge and understanding of substances and their transformations, the basics of research activities in chemistry, and chemistry and sustainable development.

- Geography
  - Knowledge and understanding about the nature systems, nature processes, and phenomena of the Earth
  - Understanding the formation of social and economic processes in Asian countries
  - Understanding the formation of social and economic processes in Europe
  - Population and economic activities in Europe

The acquisition of all themes connected with geography in Grade 8 is implemented paying special attention to knowledge and understanding, skills of practical and research activities, and attitudes.

Professional Development Requirements and Programs

Teachers of general, vocational, and interest education are responsible for the development of their professional competencies. Each teacher develops professional skills by participating in a 36-hour professional development program over three years, planned in cooperation with the head of the educational institution at which the teacher works.

The professional development program includes one of the following themes:

- General teaching competencies
- Education content and didactics
- Education management

Teachers improve their professional competencies in one of the programs described in the Regulations of the Cabinet of Ministers on Necessary Education and Professional Qualifications of Teachers and Teachers' Professional Competence Development Procedures. When designing the professional competence development program, the developer indicates the aim, objectives, and learning outcomes of the program; the planned implementation for the program; its target audience; the length of the program in hours; the planned topics; and the forms and methods of their acquisition.[13]

Monitoring Student Progress in Mathematics and Science

The basic assessment principles of the academic achievement in the general comprehensive schools of Latvia are the following:

- Systematism—The basis of assessing academic performance is a system of regular, well-grounded actions arranged in a concrete sequence.

- Openness and transparency—Learning outcomes and criteria of assessing academic performance are known to and understood by students.

- Methodological diversity—Different methodological assessment approaches and strategies are used for assessing academic performance.

- Inclusivity—The assessment of academic performance is adjusted to each student's learning needs (e.g., allocation of time, environment, means of demonstrating student performance, access to work).

- Development—The development dynamics of each student's academic performance are taken into account in assessing academic achievement, especially in the final stage of schooling.

Academic achievement is assessed using several types of assessment:

- Formative assessment is part of the continuous, everyday learning process and ensures feedback both for student and teacher about the student's current achievement against planned learning outcomes.

- Diagnostic assessment evaluates the strengths and weaknesses of a student's learning, to identify appropriate supports.

- Summative assessment is organized at the end of the learning stage (e.g., at the end of the theme, academic year, or education stage) to assess and document a student's learning outcome.

Student academic achievement in each subject is expressed on a 10-point scale:

- 10—Outstanding
- 9—Excellent
- 8—Very good
- 7—Good
- 6—Almost good
- 5—Satisfactory
- 4—Almost satisfactory
- 3—Poor
- 2—Very poor
- 1—Very, very poor

When administering an assessment on this 10-point scale, the criteria are evaluated in total. Subject teachers themselves prepare the everyday tests. *VISC* develops and offers schools the diagnostic tests, examinations, and centralized examinations. Diagnostic tests in Latvian and mathematics are written for Grade 3 and for Grade 6, which also includes a test in sciences. From 2015 to 2017, a diagnostic test was offered to Grade 8 students with an aim to evaluate students' mathematical and general skills. The test comprised three dimensions: mathematical content, general skills, and cognitive action.

Special Initiatives in Mathematics and Science Education

From 2008 to 2011, *VISC*, under the Ministry of Education and Science, implemented a European Social Fund project for sciences and mathematics. The project improved science and mathematics content in basic schools, and schools received electronic and printed material in biology, physics, chemistry, and mathematics for Grades 7 to 9. The project also facilitated teachers' professional development. Diverse activities were launched to promote children's and young adults' interest in science and mathematics, and other activities were implemented to change the approach to science and mathematics education.

The project resulted in the establishment of a science and mathematics education center (now the Innovation Center of Interdisciplinary Education) at the Faculty of Physics, Mathematics, and Optometry at the University of Latvia. The center aims to form a bridge between the university and schools, working with talented students and science and mathematics teachers, as well as finding new talented individuals. The objectives of this center are to promote young people's interest in sciences and mathematics; facilitate innovation in the general education system; promote succession and cooperation between the general education and higher education; popularize science among students and the society at large; and strengthen research activity and inquiry in general education.[14] The center organizes classes, courses, and conferences for teachers emphasizing the importance of science, technology, engineering, and mathematics (STEM) in education.

There are several organizations in Latvia that, according to legislation, organize school subject Olympiads and competitions at various levels—for instance, the national Olympiad; competitions in mathematics (even for primary students, especially Grade 4); and Aivars Liepa's Correspondence School of Mathematics, which performs academic and research work and is the structural unit of the mathematics department of the Faculty of Physics, Mathematics, and Optometry at the University of Latvia. Various associations and organizations also promote the popularization of mathematics and sciences among Latvian students (e.g., *Lielvārdis, Zinoo, Zili Brīnumi*); they aim to facilitate students' natural inquisitiveness about themselves, the surrounding world, and technology.

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