

Astronomy Education in Lithuania



This overview is part of the project "Astronomy Education Worldwide" of the International Astronomical Union's Office of Astronomy for Education.

More information: <https://astro4edu.org/worldwide>

Structure of education: Children begin formal schooling at the age of 6 or 7. Before starting their primary education, children could be educated at home or by pre-school education institutions. There are two distinct stages of formal pre-school education: pre-school education for children aged six and younger; or pre-primary education for children from 6 to 7 years.

Primary education is compulsory. It lasts for four years, children age from 7 to 11 years old (in exceptional cases from 6 to 10).

Basic (Lower secondary) education is compulsory and lasts for six years (age from 10/11 to 16/17). The purpose of the basic education program is to provide an individual with the basics of moral, socio-cultural and civic maturity, general literacy and the basics of technological literacy, to cultivate national consciousness, to foster an intent and ability to make decisions and choices and to continue learning. The programme consists of two stages: the first stage takes four years (5th – 8th grades) and the second stage is two years long (9th – 10th grades, 1st-11nd grades in the gymnasium). The purpose of the first stage is to integrate the basics of knowledge, abilities, and skills. The second stage focused on the education of abstract thinking. Since the 9th grade (1st grade in the gymnasium), the student can choose modules depending on abilities and interests. The second foreign language is compulsory since 6th grade but can start in the 5th grade too.

The program has the following subjects: moral education (religion or ethics), languages (mother tongue, first and second foreign languages), mathematics, natural sciences (chemistry, physics, biology), social education (history, geography, civil education, economics and enterprise, etc.), arts (drawing, music, dance, theatre, and modern arts), information technologies, technologies, physical education. Some subjects could be studied at an intensified level.

Secondary education is made available to everybody who has completed basic (lower secondary) education. It lasts for two years (age from 17/18 to 18/19). The core of the secondary program consists of the following subjects: moral education (religion or ethics), languages (mother tongue and foreign languages), mathematics, social education (history, geography, or an integrated social sciences course), natural sciences (biology, physics, chemistry, or an integrated natural sciences course), arts (drawing, music, dance, theatre, or modern arts), information technologies, technologies, and physical education. The choice of subjects for each pupil is based on individuality and differentiation.

All twelve years of education at public (state) schools are free of charge. There are also private (independent) schools which charge tuition fees, which account for 5.5% of pupils. Most schools are Lithuanian language, however, 7.5% of pupils attend Russian, Polish and other national minorities schools. Now are an increasing number of schools (private) teaching in English (Mostly based around International Baccalaureate program). Most schools are non-religious but pupils from the Roman Catholic community attend Catholic schools representing 2% of all school pupils.

Education facilities: Lithuanian schools have a typical class size under 30 students. For the more practical subjects like ethics, foreign languages, physical education, technologies classes are usually smaller. Some small schools only have about several dozen pupils per school year with teachers teaching groups from multiple years together. All Lithuanian schools have access to running water and good internet connections. Students from the countryside are taken to the closest town school by bus.

Governance and organisation: Public (state) schools are run by the local municipality. The Curriculum is set by the Lithuanian Ministry of Education, Science and Sport. The curriculum was last reformed in 2008-2011, however, new reforms are being carried out. Astronomy content and topics layout in the education context are fundamentally changing.

Teacher Training: Primary school teachers mostly take an undergraduate course in Education. Secondary physics teachers either study for a joint degree in physics and education at a university or study for a postgraduate education qualification after a physics undergraduate degree. Teacher training for those already working is typically done with a few “in-service” trainings days per year.

Astronomy in the curriculum (R. Skorulskienė works in the reform group): There are no specialized school courses for astronomy, instead astronomy content will be found in Environmental Studies (a general term for science and social sciences in primary school); General Science (Year 1-2(4) of secondary school) and in Physics (Year 3(5)-6) of secondary school. Year 7-8 astronomy course will be only for the students who choose to learn Physics.

In the primary education (1st-4th grade) children will be taught to recognize the Sun, Moon, planets, day and season changes, Earth satellites and their purposes. Finally, they will be explained how scientists study space. In the 5th grade, there will be bigger focus on Solar system (asteroids, comets, small solar system bodies). Students will be taught differences between meteoroids, meteors and meteorites, the cosmic distances will be discussed and their unit of measurements. In the 6th grade, Students will be taught live and virtual stargazing, space objects and occurrences. The meaning of constellations and space research will be discussed as well. In the 7th grade, Solar and Moon eclipses, devices to study the sky, and safe use of telescopes will be taught. Different telescope types, as well as the history of stargazing and space science, will be discussed. In the 8th grade, nuclear synthesis, as the energy of the star will be explained. Composition/structure of the Sun, history of space and its expansion, stellar evolution will be analysed. Finally, star and planets exploration (transit method), and types of planets harboured by different types of stars. In the 9th grade, the Kepler's laws of planetary motion will be analysed. Acceleration of free-fall due to gravity will be compared in Earth and other planets. In the 10th grade, Earth magnetic poles, magnetic field, and its importance for life in Earth will be analysed, as well as astronomical studies using electromagnetic waves.

Astronomy education outside the classroom: In Lithuania, we have an increasing focus on science popularization. In the bigger cities, we have planetariums and other entities engaged in science popularization. A lot of events are being organized through the year focused on science, such as “Starry nights”, “Night of Science”, “Science Festival”. Moletai Astronomical Observatory and Ethnocosmology Museum are often visited by schools. In many schools Astronomy extracurricular activity is being organized. Every year National Astronomy Olympiad and Astronomy Summer camp are being organized for students.

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