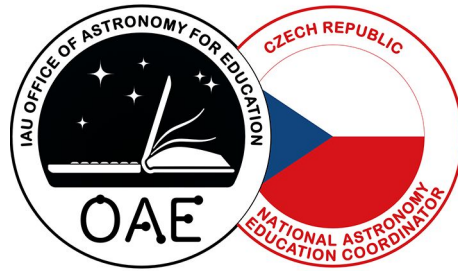


# Astronomy Education in Czech Republic



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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>

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**Structure of education:** Education in the Czech Republic includes primary school (ISCED 2011, level 1), secondary school (ISCED 2011, levels 2 and 3), and post-secondary school (ISCED 2011, levels from 4 to 8). For children ages two to five, there are preschools, both state-funded and private. One year just before the entrance to the elementary school the full-time preschool education is mandatory (ISCED 2011, level 0). Elementary school is mandatory for children from ages six to fifteen, in total nine grades. There are several cases for secondary schools: gymnasium, professional or vocational school. Most of these types of schools are usually compulsory for four years; in the fourth year of study pupils take National Level qualifications at least in 4 subjects, Czech language and one foreign language are mandatory subjects.

Education at public (state) schools is free of charge. There are also private (independent) schools, which charge fees. Most schools are Czech language. Post-secondary schools include Higher professional schools (specialist with diploma, ISCED 2011, level 5) and Universities (bachelor's degree program, master's degree program, doctor study program, ISCED 2011, levels 6, 7, and 8).

**Education facilities:** Czech schools have typical class sizes around 30 pupils with some subjects like physics, chemistry, mathematics, foreign language, and biology having smaller groups (called practicum). All schools have access to running water and sufficient internet connections. School buildings are generally well-maintained. Some schools usually in villages in the countryside aggregate pupils from different years together. The pupils in most cases visit the closest (district) schools, however the pupils and the parents have a freedom of choice. The pupils usually stay in school building even after formal education has ended and are offered an after-school programme before the working parents take them home again. Boarding schools are very rare.

**Governance and organisation:** Public (state) primary schools are run by local district and city councils. Secondary schools are run by regional districts. Universities are established by state or are private. The Curriculum is set by the central government in Prague. The curriculum was last reformed between 2016 and 2019, depending on type of school.

**Teacher Training:** Primary and secondary school teachers mostly study pre-graduate degrees in education at a university. For the secondary school teachers it is possible to obtain the minimal pedagogical education while studying a research subject (e.g. physics, chemistry, or so) that formally certifies them to teach on the ISCED 2011 level 2 and 3 the subject in which the teacher has passed the university state exam. Post-graduate degree in education is voluntary, usually done by some paid courses or attending conferences. In-service teacher training is offered by both public and private subjects and usually takes a form of accredited few-day or weekend courses.

**Astronomy in the curriculum:** There are no specialized school courses in astronomy except for some universities, where a professional astronomy education is accredited. On the lower than university levels of education, astronomy content can be found in subject Science (first grade of primary school), Physics and Geography (both in second grade of primary school and secondary school). In first grade of primary school children know about alternating day and night, seasons and gain basic knowledge about Sun, Moon and planets. In the 6<sup>th</sup> to 9<sup>th</sup> grade of primary school children learn about the solar system, solar and lunar eclipses, lunar phases. In secondary school incl. gymnasium children usually learn about gravity including Kepler's laws, astrophysics characteristics of stars and galaxies, cosmology (last two topics are not officially included in the national curriculum). On the university level (where accredited) the students may choose to study astronomy and astrophysics as subjects and after passing the state exam and the defence of the thesis obtain a formal degree.

**Astronomy education outside the classroom:** There are many small observatories, planetariums in all regions across the country, and several large science centers in five regions (Brno, Liberec, Plzen, Olomouc, and Ostrava). Cities and some larger towns have active local astronomy clubs. Volunteers interested in astronomy outreach (these include not only persons organised around local observatories and science centers but also professional astronomers, teachers at various levels of education, and amateur astronomers) give public lectures on various astronomy topics, perform stargazing for the public and offer topics for project education for schools. These activities are supported by the Czech Astronomical Society, which aims to serve as a bounding non-profit organisation for both amateur and professional astronomers.

Some clubs and societies organise astronomical summer camps and summer schools intended to supply the astronomical education for attendees and in fact replace non-existent formal education on the subject.

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