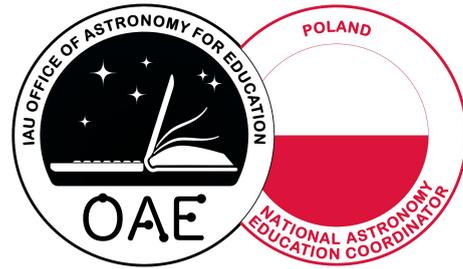


Astronomy Education in Poland



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 in kindergarten, which is followed by eight years of primary education. In the final year of compulsory education children take the eighth-grade exam in 3 subjects. After primary school, education can be continued at trade school (3 or 5 years), secondary school (4 years), or technical school (5 years). In the final year of secondary or technical school, students can take the final exam, 'Matura', in several subjects, some of which are obligatory, and which have both written and oral form. Although not obligatory as an exam, Matura is required to continue further education. Then, follows post-secondary school (1 or 2 years) or high school (university or high trade school, 3 or 5 years). The compulsory education ends after completing primary school while compulsory attendance ends at the age of 18. All years of education at public schools are free of charge. There are also private schools which charge fees and which account for 9% of pupils and 20% schools. Most schools teach in Polish; a very small percentage of pupils attend Kashubian-speaking schools (regional language). Most schools are non-religious; only 1% of pupils attend different Christian schools.

Education facilities: Polish schools have typical class sizes about 25-30 pupils. Subjects like foreign languages, physical education and sex education are usually taught in non-coeducational groups. Some small village schools have few (4-8) pupils per school year, but there are no mixed groups except some schools for children with special needs. All schools have running water, most have internet connections and IT rooms. Many schools have well equipped sports halls but some have very poor sports facilities. Only a few schools have dedicated science laboratories. Schools are often underfunded, overcrowded, and needing renovation. Pupils from distant locations use public transport (usually school buses) to get to school. At some schools, pupils can stay in a dormitory.

Governance and organisation: Schools in Poland are usually run by local governments. The supervising institution is the Education Office in a given province and the whole is managed by the Ministry of National Education. The current curriculum was last reformed in 2017.

Teacher Training: Teachers of physics have to obtain a degree in pedagogical physics. An undergraduate degree allows teaching in primary schools, a master degree, teaching in secondary schools. Teachers of other sciences can raise their qualifications through postgraduate studies, courses and training which are offered by universities and higher-education colleges. These are usually 1 or 1.5-year part-time courses based around weekend classes.

Astronomy in the curriculum: There are no specialised school courses in astronomy. Instead, some astronomy content can be found in the course of integrated education in the first three years of primary school (Earth as a planet) and in the next five years of primary school on physics, geography,

history, and environment (gravitation, the structure of the Solar System, seasons, climate change, work of Nicolaus Copernicus and Galileo Galilei). Further astronomical content can be found in the curriculum of the secondary schools which includes gravitation, kinematics of the satellites, the movement of stars and planets, the weightlessness, the structure of the Galaxy, the sizes of planets, planetary orbits, solar and lunar eclipses, units of distance in astronomy, the Big Bang and the evolution of the Universe, the Kepler laws, escape velocity, properties of planets in the Solar System, constellations of stars, observations of the night sky, analysis of photos of celestial bodies and maps of the Universe.

Astronomy education outside the classroom: There are several science or astronomy outreach centres, mostly in the more populated cities, among them Copernicus Science Centre in Warsaw, EXPERYMENT Science Centre in Gdynia, Hevelianum in Gdańsk, Kepler Science Centre in Zielona Góra, or Centre of Modernity - Mill of Knowledge in Toruń, with more under construction. Many other cities and towns have active local astronomy clubs, which are usually affiliated with the Polish Society of Amateur Astronomers (PTMA). Finally, there are numerous educational astronomical events organized by scientists and educators, aiming to improve students' knowledge and teachers' skills. A small number of schools, mainly in the Kujawsko-Pomorskie region, have dedicated astronomical observatories called "Astrobaza" built between 2012 and 2013 to a common design. The present exploitation of Astrobaza depends on local teachers and their ability to run an after-school astronomy club or other events. The popular astronomy magazine Urania is subsidised for schools by the Ministry of Education, and there is a TV/YouTube series on astronomy made in cooperation with Urania and the Polish Astronomical Society called Astronarium with over 100 episodes on all aspects of astronomy.

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