Astronomy Education in

Finland

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 their comprehensive school at the age of 7 after the pre-primary school that they attend at the age of 6. The primary part of the comprehensive school (hereafter primary school) lasts six years, comprising grades 1-6. At the age of 13, the pupils start the secondary part of the comprehensive school (hereafter secondary school) that they attend for three years, comprising grades 7-9. These nine grades constitute the obligatory school grades that the pupils must attend. At the age of 16, about one half of the pupils move to the course-based upper secondary school (hereafter high school), whereas another half continues on a vocational track. The highschool typically lasts for three to four years and prepares the pupils for university studies. The 9 years of obligatory education are free, whereas, at the high school, books and other materials must be bought by the students. In most schools,teaching is given in Finnish, 6,3 % of the schools being in Swedish. A number of schools in Laplandgive teaching in the Sami language. In addition, there are schools in English, German, French, and Russian languages. All schools offer education in Lutheran religion but pupils have the right to have teaching of their own religion, or to choose attending ethics classes instead.

Education facilities: Finnish school classes have average sizes of about 20 pupils. At primary schools in particular, small schools can have just a few pupils per school year, in which case pupils from several school years can be gathered together in single class rooms. The schools are mostly well-equipped modern buildings, but there is a large variance among different municipalities. In most of the schools,students have easy access to laptops, smartboards,and other modern teaching equipment,and they are used in everyday teaching. At the comprehensive schools and,especially,at the highschools,electronic platforms are being increasingly utilized in teaching. Even the final high school exams have been shifted to electronic platforms.

Governance and organisation: Schools are run by local municipalities and towns. The curriculum is set by the central government and is the responsibility of the Ministry of Education and Culture. The curriculum was last reformed for the comprehensive school in 2014 and for the high school in 2019.

Teacher Training: Primary, secondary, and high school teachers obtain M.Sc. level university education and, largely due to the highly qualified teachers, the Finnish school system is internationally recognized. The primary school teachers learn about astronomy in the context of their physics and chemistry education. The secondary and high school teachers obtain their M.Sc. degrees with majors (120 ECTS) in mathematics, physics, or chemistry, and in education (60 ECTS). Typically, teachers have majors in mathematics and minors (60 ECTS) in physics and/or chemistry. The universities offer and recommend general courses of astronomy for the teachers, and these courses are indeed

popular. The universities further offer special courses for senior teachers in order to complete their training in science.Teachers are encouraged to take part in further training in science.

Astronomy in the curriculum: The official Finnish school curriculum does not include any specialized courses in astronomy. At the primary school (grades 1-6), astronomy is part of environmental studies and affiliated, in particular,with the space theme (grades 1-4). The space theme can include all the topics in astronomy from the Sun, Moon, planets, asteroids,and comets to the black holes, Milky Way and other galaxies, and cosmology. The contents of the astronomy part depend largely on the preferences of individual teachers. Active teachers may organize optional astronomy courses.In recent years, there has been an unfortunate trend of decreasing the amount of physics education in the Finnish high schools.

Astronomy education outside the classroom: There are a significant number of science or astronomy outreach centers in Finland and they are located throughout the country. The largest of these centers are in southern Finland. Ursa, the oldest and largest amateur astronomer association has some 18000 members and there are numerous other amateur associations, testifying to the popularity of astronomy in Finland. Indeed, in the world, Finland has the largest proportion of amateur astronomers per capita.

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