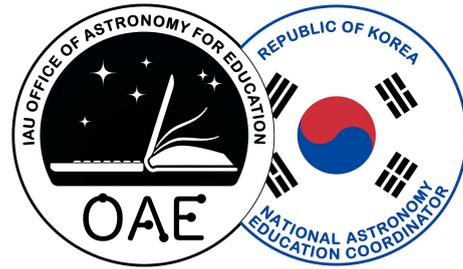


Astronomy Education in Republic of Korea



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: The Korean education structure is composed of three parts and it is a single-track 6-3-3: six years of primary school, followed by three years of middle school and then three years of high school. Children begin formal schooling at aged 6 or 7.

The primary curriculum consists of nine principal subjects: moral education, Korean language, social studies, mathematics, science, physical education, music, fine arts, and practical arts. English-language instruction begins in the third grade, so that children can be exposed to English in a relaxed atmosphere through a conversational exchange,

The curriculum for middle school consists of 12 basic/required subjects, electives, and extracurricular activities. While elementary school instructors teach all subjects in, middle school teachers are content specialists.

High schools in South Korea teach students for three years, from first grade (age 15–17) to third grade (age 17–19), and students commonly graduate at age 18 or 19. A small number attended specialized high schools concentrating in science, the arts, foreign languages, and other specialized fields. There are four types of high schools: general high schools, special-purposed high schools (e.g., science and art), vocational high schools, and autonomous high schools. Student selection procedures differ by school types and/or school location (e.g., metropolitan or provincial areas). Textbooks and teachers' manuals are developed within the framework of the national curriculum through primary school to high school.

Education facilities: Typical class sizes are 25 in average which decrease from around 35 for last 10 years (Seoul statistics). Most schools are located in a few minutes or ten minutes on foot and school buses are running in some cases. Special-Purposed high schools are mostly boarding school and they go home for weekends.

Governance and organisation: National schools and public schools are run by the Ministry of Education and the Education Bureau of Cities and Provinces, respectively. Private schools are run by private institutions. As of spring 2020, there are in total 6120 primary (17 national, 6029 public, and 74 private), 3223 middle (9 national, 2582 public, and 633 private), and 2367 high (19 national, 1402 public, and 946 private) schools. The Ministry of Education oversees the national school curriculum in order to insure equal educational opportunity for all and maintain the quality of education.

Teacher Training: Primary school teachers have to pass the national teacher certification examination after graduating the National/Public "University of Education" (total 10 universities) or completing the course of the "elementary education" from two assigned national universities and one

assigned private university. About the junior and senior high school teachers, they also have to pass the national teacher certification examination after graduating the 46 assigned Normal Universities and 15 assigned “College of Education” in the Universities. Government controls the number of teachers at each province/city. For example, the TO of primary and junior/senior high school teachers for next year, 2021, are total 3553 and 3593 in the whole country, respectively. Although no further compulsory training is required, multiple chances are provided to update and train themselves with new knowledge and skills on astronomy.

Astronomy in the curriculum: The Korea national curriculum revised in 2015 emphasizes student-centered, STEAM, community education, and process-focused assessment. Astronomy is taught as a part of Earth Science Education. All K3-K10 students are guided to looking up the sky by naked eyes, through a telescope, and/or of astronomical data. They learn the Sun-Earth-Moon system, the solar system, our Galaxy, and galaxy systems through science inquiry activities including essential experiments. K11 and K12 students are able to take elective courses to learn more topics (e.g., radio astronomy).

Students' post-learning skills expected in the curriculum are as follows: Problem recognition, Inquiry design and carrying out, Data acquisition and analysis, Mathematical/computational thinking and application, Developing and using models, Debating/demonstration based on evidence, Drawing conclusions, Communication.

Astronomy education outside the classroom: Outside-of-classroom educational activities are largely divided into two categories: for the public and for specific groups. First, five National Science Museums and over 60 science centers are belonging to the Astronomical Space Science Museum Association are implementing astronomical education programs for the public using astronomical observatory, planetarium, and various exhibits. In addition, about 10 private astronomical observatories offer opportunities to become close to the space through various experience programs and astronomy camps.

The Korea Astronomy and Space Science Institute supports activities for artists to have a combined thinking of science, culture and art through various workshops, Sobaek Mountain Writers' Residence programs, and so on. Also, Universe Awareness Korea activities for people who are difficult to access to astronomy like residents in islands or mountain areas, multicultural families, and children suffering domestic violence.

Korean Astronomical Society (KAS) also supports the public educations. The subcommittee of Astronomy Education Curriculum provides professional feedback for the astronomy-related national curricula. The domestic outreach team holds the public lectures during the period of regular society meetings and connects the astronomers to institutions which want to have an astronomy-related public talks. The overseas outreach team supports the astronomical educations of developing countries. In addition, KAS developed an online encyclopedia with about 500 astronomical terms in cooperation with Korean portal site NAVER.

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