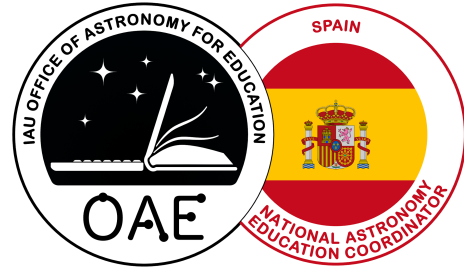


Astronomy Education in Spain



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 Spanish Education System comprises the following studies: pre-Primary Education (kindergarden), Primary Education, Compulsory Secondary Education (ESO), Bachillerato, Vocational Training (FP), Adult Education, and University Education. Also, Language, Artistic and Sports Education are provided, which are considered Specialized Education.

Pre-primary Education (kindergarden) is not compulsory, and it is organized in two cycles: until 3 years old (not funded by the State), and from 3 to 6 years old (free of charge).

Primary Education and Compulsory Secondary Education cover ten years of schooling, and they are compulsory and cost-free for all the students.

Primary Education is the first compulsory level, and it covers six academic years, between 6 and 12 years old. Secondary Education comprises Compulsory Secondary Education (ESO), the second compulsory level, Bachillerato, and Vocational Training (Basic and Intermediate), which are non-compulsory levels. Compulsory Secondary Education (ESO) covers four academic years, between 12 and 16 years old, and it is organized into two cycles. The first one is composed of three years. The second cycle, consisting of a single year, has a preparatory nature for post-compulsory education.

Bachillerato lasts two academic years, from 16 to 18 years old, and provides access to different higher education studies (University). To gain access to University Education, apart from holding the Bachillerato Certificate, students must pass a university entrance examination.

There are three types of non-university educational institutions according to their ownership and source of funding:

- Public Schools: they are owned by the education authority and state-funded
- Private Schools: they are privately owned and privately funded
- Semi-private (or subsidized) Schools: ownership is private, mainly catholic schools, but they can be state-funded through a regime of agreements.

Most schools are Spanish language, but in some Autonomous Communities of Spain will teach in the co-official language of the given region, instead of Spanish. In these regions, most children master both the co-official language and Spanish as part of their general schooling.

Education facilities: Spanish schools have class sizes around 25-30 pupils. Sometimes, Gathered Rural Schools only have a few pupils per school year with teachers teaching groups from multiple years together. All Spanish schools have access to running water and good internet connections. Nowadays, most of the classrooms are furnished with multimedia interactive whiteboards. And some other Autonomous Communities have one desktop computer per student in the classroom. School buildings are generally well-maintained but sometimes students have to use temporary classrooms due to maintenance problems/lack of space.

Governance and organisation: The competences in terms of education are shared between:

- The State General Authority (Ministry of Education and Vocational Training) executes the general guidelines of the Government on education policy and regulates the basic elements or aspects of the system (among them, a common basic curriculum with general guidelines)..
- The Autonomous Communities (Departments for Education) develop the basic regulations (and curriculum) and have executive and administrative competencies for managing the education system in their own territory and for setting the regional curriculum (a developed version of the basic one settled by the Ministry of Education).. In the Cities of Ceuta and Melilla, these competences are assumed by the Ministry of Education and Vocational Training.
- The role of local authorities is focused on educational management through Education Departments or Municipal Education Institutes.
- Individual schools have pedagogical, organisational and managerial autonomy and stakeholders (teachers, parents and students) participate in the schools' organisation, governance, running and evaluation.

Teacher Training: Primary Education teachers mostly study undergraduate degrees in education at a university. Secondary physics teachers usually have a degree in physics, mathematics, engineering, chemistry, biology, geology at a university, and study for a postgraduate education qualification after a physics undergraduate degree. Teacher training for those already working is not compulsory and it is usually done with a few "in-service" training days per year.

Astronomy in the curriculum: The official curriculum, updated in late 2013 for Primary Education and late 2014 for Secondary Education, has little (or none) space for Astronomy.

In Primary Education, only one space is allocated in Social Sciences in the fifth year.

In Compulsory Secondary Education, Astronomy topics are taught in Biology and Geology subject in the 1st and 3rd years. In the 4th year, Astronomy topics are taught in Physics and Chemistry subjects (optional according to educational administrations) and in the optional courses of Scientific Culture and Philosophy.

In the first year of Bachillerato, cosmology topics are taught in Philosophy course. In the 2nd year, the four fundamental interactions are taught in Physics course (optional according to educational administrations).

To summarize, astronomy is practically not present in primary education, and although it is more present in secondary education, in most cases it is inserted into optional subjects.

In recent years is quite common in Primary Education to work in the classroom in a Project Based Learning Framework, and one of the most usual themes for projects is the Solar System and the Universe, so nowadays the study of Astronomy related topics is increasing in early ages.

Astronomy education outside the classroom: There are 41 [Science or astronomy outreach centres, museums and planetaria in Spain](#), mostly in the more populated cities, but also in smaller towns and the Balearic and the Canary Islands. There is a national federation of astronomy amateurs' associations ([FAAE](#)), a national association for astronomy education ([ApEA](#)) and numerous local astronomy clubs all over the country. Finally, the [Spanish Astronomical Society](#) (SEA) gathers professional astronomers and science communicators working in astronomical research centres and observatories, and it has a strong collaboration with FAAE.

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