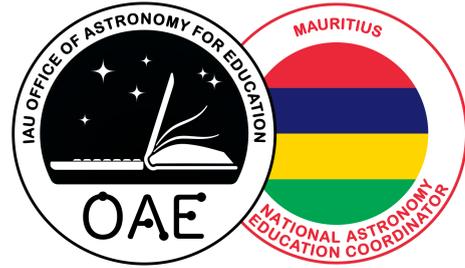


# Astronomy Education in Mauritius



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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:** Schooling in Mauritius is compulsory until the age of 16. The government of Mauritius provides free education to its citizens from pre-primary to tertiary levels. The official language of instruction is English from the primary level onwards, and both French and English can be used as the language of instruction in pre-primary. The following explains the ages breakdown as a function of the level of education:

- Pre-primary education (Ages: 3-5)
- Primary education - Grades 1-6 (Ages: 6-11)
- Secondary education - Grades 7-13 (Ages: 12-18)
- Higher/tertiary education (Ages: 19 and above)

Private schooling is also present in Mauritius, which provides education from pre-primary to tertiary level.

**Education facilities:** The approximate surface area of a high school compound is around 5000 m<sup>2</sup> and the recreational area is around 2670m<sup>2</sup>. School buildings in Mauritius are built of concrete and have approximate 30 classrooms, 3 offices, 1 art room, 1 music room, 1 Audio Visual Room, 1 Computer Lab, 1 Biology, Chemistry and Physics Lab, 1 Design and Technology Rooms, 1 Staff Room, 1 Hall/Gymnasium, 1 Store, 1 canteen 1 Integrated Science Lab and a library containing about 10,000 books. The schoolyard is tarred and planted with grass and parking space is available.

School Equipment is blackboard and chalk, whiteboard and marker, fan, light and curtains. The specialist equipment that the school has are; radio/cassette, television set, videotape player, computer/printer/scanner, projector, CD/DVD player, science equipment, first aid equipment, learning aids, photocopy machine, design equipment, physical education, kitchen and garden equipment and grass cutter. Taps, washbasins and water tanks are also available at the school. Football, volleyball, basketball, playground and equipment like badminton and physical fitness are also available.

Internet facilities are available in specialised rooms (laboratories, Computer labs) and in offices. Transport facilities are provided for most schools to students.

**Governance and organisation:** The Mauritius Institute of Education trains teachers (pre-primary, primary, and secondary levels). There are possibilities for teachers to benefit from continuous professional development after they start teaching.

**Teacher Training:** The Ministry of Education is responsible for the curriculum, and the Mauritius Institute of Education develops the curriculum. The Ministry of Education and Human Resources runs all the education facilities in Mauritius, with the exception of the University.

**Astronomy in the curriculum:** Astronomy does not appear as a stand-alone subject, and however, astronomy is covered at various levels in the education curricula. For the public schools, the breakdown is as follows:

### **PRIMARY LEVEL**

- **Grade 6 Science**

Expected Learning Outcomes

At the end of Grade 6, pupils are expected to

- show simple understanding of the Sun, Earth and Moon;
- recognise the regular movements of Earth (rotating and spinning) and Moon;
- explain how Earth's movement causes day and night.

### **SECONDARY LEVEL**

- **Grade 7 Science**

Specific Learning Outcome

- Demonstrate understanding of light-years for expressing distance between stars and the Earth;
- Solar system
  - Demonstrate understanding of our solar system, with reference to the Sun, the planets, planetary satellites, comets and asteroids;
  - Discuss a simple model of the solar system (2D and 3D);
  - Draw a labelled diagram of our solar system (Sun and the planets);
  - State basic characteristics of planets in terms of their relative size, their period of orbit around the Sun and any other specific characteristics;
  - Recognise planets in our solar system from their appearance, relative position and size;
  - Recognise the Earth as the only known planet supporting life

- **Grade 9 Science (Physics)**

Specific Learning Outcomes (Light)

- Recognise that stars produce their own light;
- Recognise that planets and moons reflect light received from the Sun.

- **Grades 10-11**

**(Cambridge Assessment O level Physics - 5054 syllabus, 2022)**

**3. Dynamics**

- Candidates should be able to discuss how ideas of circular motion are related to the motion of planets in the solar system

**8. Energy Sources and Transfer of Energy**

- Candidates should be able to (e) describe the processes by which energy is converted from one form to another, including reference to (3) solar energy (nuclei of atoms in the Sun).

**26. Radioactivity**

- Candidates should be able to (h) discuss theories of star formation and their energy production by fusion.

- **Grades 12-13**

(Cambridge Assessment AS & A level Physics - 9702 syllabus, 2022-2024)

**Chapter 25: Astronomy and cosmology**

**25.1 Standard candles**

Candidates should be able to:

1. understand the term luminosity as the total power of radiation emitted by a star
2. recall and use the inverse square law for radiant flux intensity  $F$  in terms of the luminosity  $L$  of the source
3. understand that an object of known luminosity is called a standard candle
4. understand the use of standard candles to determine distances to galaxies

**25.2 Stellar radii**

Candidates should be able to:

1. recall and use Wien's displacement law to estimate the peak surface temperature of a star
2. use the Stefan-Boltzmann law
3. use Wien's displacement law and the Stefan-Boltzmann law to estimate the radius of a star

**25.3 Hubble's law and the Big Bang theory**

Candidates should be able to:

1. understand that the lines in the emission spectra from distant objects show an increase in wavelength from their known values
2. use  $\frac{\Delta\lambda}{\lambda} = \frac{\Delta f}{f} = v/c$  for the redshift of electromagnetic radiation from a source moving relative to an observer
3. explain why redshift leads to the idea that the Universe is expanding
4. recall and use Hubble's law  $v$  and explain how this leads to the Big Bang theory (candidates will only be required to use SI units)

The private schools cover similar topics in their curriculum. The private schools that provide the International Baccalaureate (IB) Diploma Programme (DP) Physics course have an Astronomy option. This option covers many astronomy concepts, from objects in the Universe to distance measurements, stars' evolution, and cosmology.

**Astronomy education outside the classroom:** Outside the classrooms, learners have access to the Rajiv Gandhi Science Centre, which promotes Science and Technology. They carry out a series of astronomy awareness campaigns throughout the year. The IAU NOC is very active online, promoting astronomy outreach to the local community. The Mauritius Astronomical Society, which was created and registered in 1991, is an amateur astronomy group that provides regular astronomy activities to its members and the general public.

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**The International Astronomical Union's National Astronomy Education Coordinator (NAEC) Team for Mauritius:** Nadeem Oozeer (Chair and Contact Person).

For specific information about astronomy education in Mauritius or on this document please contact the Office of Astronomy for Education ([oea@astro4edu.org](mailto:oea@astro4edu.org)).