

● AN AFTER-SCHOOL CLUB BY ASTRIS SPACE

Astris Astronomy Club

A year under the sky, one week at a time.

A weekly astronomy club for Grades 4–12, run end to end by Astris educators. Every session is taught at each student's grade level, through their own syllabus. A three-year cycle means no student repeats a session from Grade 4 to Grade 12.

**32**

weekly sessions

7

sky observations

3

grade bands, one club

Rs 0

cost to the school

01 — WHY A CLUB

Start with the students who already look up

Delhi schools already add interests through clubs, from debating to F1 in Schools. An astronomy club lets keen students go deeper every week, with no new infrastructure.

01

No budget decision

Parents enrol directly with Astris. The school's only commitment is a room once a week.

02

Built on real interest

Students sign up because they want to, so every session runs with a curious, committed group.

03

A low-risk first step

The school sees astronomy working for a full year before considering a permanent Space Lab.

02 — THE MODEL

How the club runs



ASTRIS RUNS

- One Astris educator for each grade band, every session
- All telescopes, solar filters, kits and materials
- Enrolment, fee collection and parent updates
- Session plans, logbooks, quizzes and certificates

THE SCHOOL PROVIDES

- A classroom for one 60-minute slot a week
- Rooftop or ground access for 3 evening sky-watches
- One coordinator teacher as point of contact
- Sharing the club note with parents

STUDENTS AND PARENTS

- Enrol and pay Astris directly
- Attend weekly and keep an observation logbook
- Join family sky-watch evenings

25

students minimum to start a club

40

students maximum per batch; a second batch opens beyond that

3

grade bands in one club: Explorers, Navigators, Astronomers

60

minutes a week, in a slot the school chooses

03 — THE GRADE-BAND MODEL

One sky, three lenses

The whole club explores the same theme each week, but a Grade 4 student and a Grade 12 student never get the same lesson. Each grade band learns the theme through the chapters it is studying in class. The club applies the syllabus a student already has. It is never an extra subject to learn.

GRADES 4–6

Explorers

Notice and describe. Stories, models and play, linked to EVS and early Science and Geography.

GRADES 7–9

Navigators

Explain and measure. Cause and effect with simple numbers, linked to middle-school Science and Maths.

GRADES 10–12

Astronomers

Calculate and analyse. Equations and real data, linked to board-exam Physics and Maths.

Inside a 60-minute session

10 min • together	Explorers pod	Navigators pod	Astronomers pod	10 min • together
Shared sky hook The whole club meets the week's theme together through a demo, an image or a live view of the Sun.		40 minutes in band pods Each band works with its own Astris educator, worksheet and activity, built from its own textbook chapters.		Share-back Each pod presents one finding. Seniors explain to juniors, and juniors ask the questions seniors had not thought of.

One theme, three lessons: Week 7, "The Moon and its phases"

BAND	WHAT THEY DO	CLASSROOM LINK (NCERT)
Explorers	Act out the phases with a lamp and a ball, then start a month-long Moon diary	EVS / Science: the Moon and the sky; light and shadows
Navigators	Model the Sun–Earth–Moon geometry and predict when the next eclipse is possible	Science: light and shadows; motions of the Earth and Moon
Astronomers	Use Kepler's third law to find the Moon's distance from its orbital period, then check the answer against real data	Physics Class 11: Gravitation

Staffing. One Astris educator for each band pod, so a club runs with 2 or 3 educators.

Small bands. A band with fewer than 8 students joins the next band but keeps its own worksheet tier.

No extra load. No exams and no homework beyond a short observation logbook.

04 — THE THREE-YEAR CYCLE

Grade 4 to Grade 12, never the same session twice

The club's astronomy is split into three year-long programmes that rotate. The whole club follows the same cycle year, and each year stands on its own, so a student can join in any grade.

A CLUB YEAR 1

Earth, Moon and Sun

Seasons, Moon phases, eclipses, telescopes, the Sun up close, Chandrayaan and Aditya-L1

Signature: a year-long sunspot log

B CLUB YEAR 2

Planets and spaceflight

The planets, gravity and orbits, rockets, satellites, comets and asteroids, Mangalyaan and India's launch vehicles

Signature: a water-rocket launch day

C CLUB YEAR 3

Stars and the Universe

Constellations, starlight and spectra, the life of stars, galaxies, exoplanets, black holes and the Big Bang

Signature: a deep-sky night on the Orion Nebula

One student's journey, Grade 4 to Grade 12

Gr 4	Gr 5	Gr 6	Gr 7	Gr 8	Gr 9	Gr 10	Gr 11	Gr 12
A	B	C	A	B	C	A	B	C
Explorers • notice and describe			Navigators • explain and measure			Astronomers • calculate and analyse		

No repeats within a band

Each band spans three grades and the cycle spans three years, so a student meets each programme once per band.

A deeper return

When Year A comes round again in Grade 7, it is taught through Grade 7 chapters. The Moon a student first sketched is now a geometry problem.

Join in any year

Every programme stands alone. A student who joins in Year B simply carries on through C and A.

9 years

GRADE 4 TO GRADE 12

Every year of the club is new. A member who stays from Grade 4 to Grade 12 goes through the cycle three times, each time at a deeper level.

05 — LEVELS

A level that rises with every year

Alongside their grade band, every member earns a personal astronomy level that carries over from year to year. Levels are awarded for skills shown under the sky, checked by Astris educators each October and February.

1	Sky Cadet Finds 10 constellations, the bright planets and the Moon's main features by eye, and reads a planisphere.	EARNs Cadet badge and certificate
2	Telescope Operator Sets up, aligns and focuses a telescope alone, and runs safe solar viewing for others.	EARNs Operator badge; can join sky-watch crew
3	Astro-imager Captures and processes their own images of the Moon and planets, and explains what they show.	EARNs Work shown at the showcase; eligible for Astris expeditions
4	Mission Specialist Completes an independent observation project and mentors younger members through a full year.	EARNs Letter of recommendation from Astris Space

Bigger roles for returning members

Sky-watch crew Set up telescopes and guide families at evening sky-watches	Pod mentors Support the Explorers pod alongside the educator	Research track Real asteroid-search campaigns with the International Astronomical Search Collaboration	Olympiad track Preparation for the National Standard Examination in Astronomy (NSEA)
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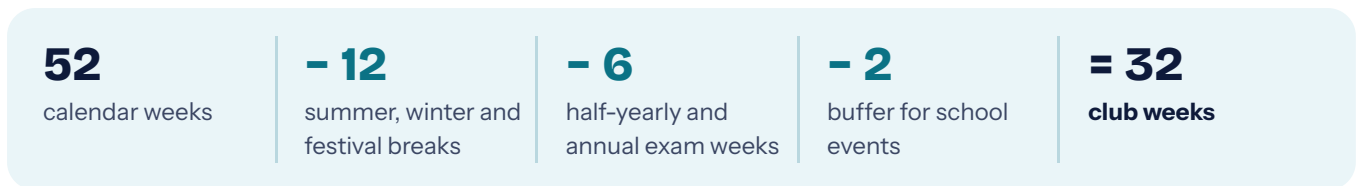
WHY FAMILIES COME BACK EVERY YEAR

- 1** A new year of the cycle to explore
- 2** The next level and its certificate
- 3** A bigger role in the club

06 — **THE YEAR**

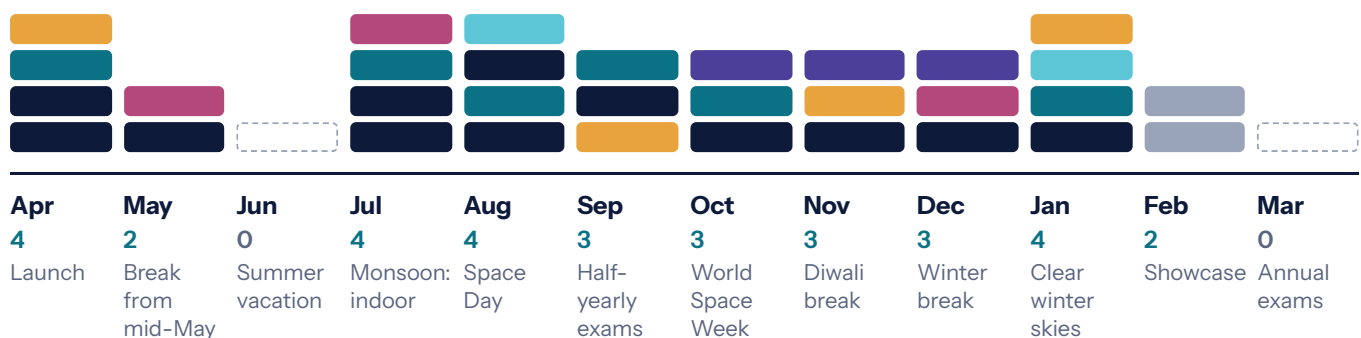
32 club weeks, April to February

The club follows the school's own calendar. It pauses for summer vacation, festival breaks and both exam seasons, and runs in the 32 weeks that are left. Each year, only the themes change.



Month by month

Each block is one weekly session, coloured by type



The session mix

About 37 contact hours across the year



SESSION TYPE	SESSIONS	LENGTH	WHAT HAPPENS
 Concept sessions	12	60 min	One theme, taught three ways: one lesson per grade band
 Hands-on builds	6	60 min	Planisphere, telescope, water rocket, spectroscope and more
 Solar observations	4	60 min, daytime	Sunspots tracked through certified solar filters, in school hours
 Night sky-watches	3	2 hrs, evening	Moon, planets and constellations through telescopes, with families
 Space film sessions	3	90 min	A space film or documentary, then a "science or fiction?" discussion
 Scientist interactions	2	60 min	Live talk and Q&A with a working scientist, online or on campus
 Quiz and showcase	2	60–90 min	Space quiz, then a final showcase for parents with certificates
Total	32	≈ 37 hours	7 observation sessions in all: 4 solar, 3 night

07 — SESSION PLAN · YEAR A

Year A, week by week: Earth, Moon and Sun

■ Concept
■ Build
■ Solar observation
■ Night sky-watch
■ Film
■ Scientist
■ Quiz and showcase

APRIL

- 1 Welcome to the cosmos**
Club launch, sky quiz, level check-in, logbooks
- 2 Our place in space**
Earth, Moon and Sun to scale in the classroom
- 3 Build: planisphere**
Make and use a rotating star finder
- 4 Solar observation 1**
Safe-viewing drill and a first sunspot sketch

MAY

- 5 Day, night and seasons**
Earth's tilt with tabletop models
- 6 Film session 1**
A Moon film, then "science or fiction?"

JULY

- 7 The Moon and its phases**
Why the Moon changes shape each night
- 8 Eclipses**
Why they happen, and why they are rare
- 9 Build: Moon-phase and eclipse model**
A working Sun–Earth–Moon model
- 10 Film session 2**
A monsoon-day screening and discussion

AUGUST

- 11 How telescopes work**
Lenses, mirrors and magnification
- 12 Build: DIY telescope**
A simple telescope each student takes home
- 13 India to the Moon**
National Space Day: Chandrayaan-1 to 3
- 14 Scientist talk 1**
Live Q&A with a lunar or planetary scientist

SEPTEMBER

- 15 Solar observation 2**
Sunspot count, compared with April
- 16 Inside the Sun**
Its layers, its energy and the solar wind

- 17 Build: pinhole solar projector**
A safe way to watch the Sun at home

OCTOBER

- 18 Aditya-L1: watching the Sun**
World Space Week: India's solar observatory
- 19 Build: sundial**
Telling time by the Sun's shadow
- 20 Sky-watch 1**
Moon craters and mountains, with families

NOVEMBER

- 21 Gravity, tides and the Moon**
How the Moon moves our oceans
- 22 Solar observation 3**
Tracking sunspots as the Sun rotates
- 23 Sky-watch 2**
The Moon and the season's bright planets

DECEMBER

- 24 Sun, Moon and our calendars**
Solstices, months and India's calendars
- 25 Film session 3**
Year-end screening and discussion
- 26 Sky-watch 3**
The winter Moon through the telescope

JANUARY

- 27 Auroras and space weather**
When the Sun reaches Earth
- 28 Build: crater experiment**
Recreating the Moon's impact craters
- 29 Scientist talk 2**
A solar physicist or astrophotographer
- 30 Solar observation 4**
Final sunspot log: the year's results

FEBRUARY

- 31 Space quiz and level checks**
Inter-house quiz; skills checks for levels
- 32 Showcase and certificates**
Logbooks, builds and new levels shown to parents

Years B and C keep this same rhythm of sessions with new themes (page 4). Every theme is taught three ways, one per grade band (page 3).

08 — SYLLABUS LINKS · CBSE / NCERT

Every theme meets their own textbook

The ten club themes are spread across cycle years A, B and C. Each band learns them through NCERT chapters from its own classes.

CLUB THEME	EXPLORERS · 4–6	NAVIGATORS · 7–9	ASTRONOMERS · 10–12
Scale and measurement B	Maths: large numbers; Science: measuring length and distance	Maths: exponents and powers; Science: motion, speed and time	Physics XI: Units and Measurement (parallax, the light-year)
Day, night and seasons A	EVS: the Sun, shadows, day and night; Geography: the Earth's rotation	Geography: motions of the Earth, latitudes and longitudes	Geography XI: solar radiation, heat balance and temperature
The Moon and eclipses A	EVS: phases of the Moon; Science: light and shadows	Science: light and shadows; eclipses and the Earth–Moon–Sun system	Physics XI: Gravitation (orbits, Kepler's laws)
Constellations and star maps C	EVS: our sky, the Pole Star and directions	Geography: the globe; Maths IX: Coordinate Geometry	Maths X: Some Applications of Trigonometry; Maths XI: angles and coordinates
Telescopes and light A	Science: light, shadows and reflection	Science: light, mirrors and lenses	Science X: Light – Reflection and Refraction; Physics XII: Ray Optics and Optical Instruments
Rockets and India in space B	Science: force, push and pull	Science VIII: force and pressure; Science IX: Force and Laws of Motion	Physics XI: Laws of Motion (momentum); Work, Energy and Power
The Solar System and gravity B	Geography: the Earth in the Solar System	Science IX: Gravitation	Physics XI: Gravitation (satellites, escape velocity)
The Sun and its energy A	EVS / Science: sunlight, heat and energy	Science: heat and its transfer; sources of energy	Physics XI: Thermal Properties of Matter; Physics XII: Nuclei
The life of a star C	Science: materials and states of matter (gases)	Science IX: Matter in Our Surroundings; Atoms and Molecules	Physics XII: Nuclei (fusion); Atoms
Starlight, galaxies and exoplanets C	Science: light and colours (the rainbow)	Science IX: Structure of the Atom; light and colour	Science X: The Human Eye and the Colourful World; Physics XII: Electromagnetic Waves, Atoms

Timed and matched. Themes run close to the weeks their chapters are taught. Astronomers practise CBSE competency-based questions with real data. Chapter titles are matched to your school's NCERT editions at onboarding, and ICSE mapping is available on request.

08 — SYLLABUS LINKS · IB

Built for inquiry, as the IB intends

IB programmes reward students who question, investigate and reflect. Each band's club work feeds directly into its IB programme, so time spent in the club counts towards the work students already have to do.

EXPLORERS

PYP

Primary Years Programme

- Fits the transdisciplinary themes **How the world works** and **Where we are in place and time**
- Moon diaries and sky journals are ready-made evidence for units of inquiry on Earth and space
- Builds the approaches to learning (ATL) skills of research, thinking and communication

NAVIGATORS

MYP

Middle Years Programme

Club activities practise all four MYP Sciences assessment criteria:

A · Knowing and understanding

Gravity, light and energy concepts

B · Inquiring and designing

Planning a sunspot or Moon-phase study

C · Processing and evaluating

Graphing water-rocket and sunspot data

D · Reflecting on the impacts of science

Satellites, space debris, India's missions

ASTRONOMERS

MYP 5 · DP

Diploma Programme Physics

A. Space, time and motion

Rocket flight, momentum and orbital speed

C. Wave behaviour

Telescope optics, diffraction, the Doppler effect

D.1 Gravitational fields

Kepler's laws, satellites, escape speed

E.5 Fusion and stars

How stars shine, their life cycle and the HR diagram

Club observations can grow into a Physics **Internal Assessment** or an **Extended Essay**, such as measuring the Sun's rotation from sunspots. Running sky-watches for younger students can count towards **CAS**.

OUR PROMISE TO SCHOOLS AND PARENTS

The club adds no subject, no syllabus and no exam. It gives students a reason to understand the ones they already have.

09 — INCLUDED

What every student gets

32

sessions, each taught at their grade band's level

7

observation sessions on Astris's own Nakshatra telescopes

4

take-home build kits, matched to their band

1

printed observation logbook and star chart

1 yr

AstroEd LMS access for their own grade's modules

2

family seats at each evening sky-watch

Kit

Astris Astronomy Club T-shirt and badge

Cert

certificate from Astris Space, an ISRO-registered Space Tutor

Progress parents can see

EVERY WEEK

A short WhatsApp note on what the club explored and the chapter it connects to.

TWICE A YEAR

A progress card in October and February covering observation skills, concepts and participation.

YEAR END

A completed logbook, a showcase presentation, a certificate and their new level.



Safety first. The Sun is only ever viewed through certified solar filters under educator supervision. Evening sky-watches run with school staff present and written parent consent.

09 — **SAMPLE · TEXTBOOK**

A page from the club textbook

Each grade band gets its own short textbook for each cycle year: one picture-led page per session, never more. This is the Navigators page for Session 7.

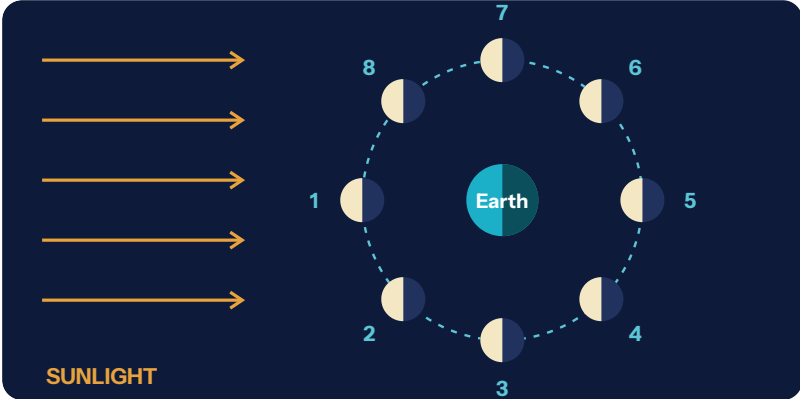
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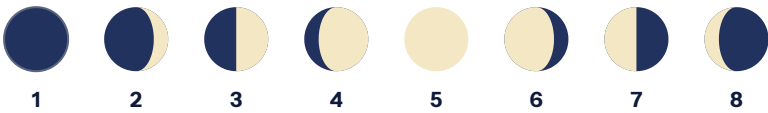
NAVIGATORS · YEAR A
Session 7


Why does the Moon change shape?

2

Big idea: The Moon is always half lit by the Sun. What changes is how much of that lit half faces us.

3




1
2
3
4
5
6
7
8

As the Moon travels round Earth every 29.5 days, we see more of its sunlit side, then less. At position 1 it sits between us and the Sun, so its dark side faces us. At position 5 it is opposite the Sun, and we see the whole lit face.

4

TRY THIS TONIGHT

Sketch the Moon at the same time for 5 nights in your logbook. Is the lit side growing or shrinking?

WORDS TO KNOW

Waxing: growing
Gibbous: more than half lit

5

In your class textbook: Science, light and shadows

14

- Band and session tag**
Every page shows who it is for and when it is used.
- One big idea**
The whole page builds to a single sentence the student can repeat.
- Picture first**
A diagram does the explaining; text only supports it.
- Something to do**
Each page ends with a short activity that leads into the logbook.
- Linked to class**
The footer names the school textbook chapter it supports.

EXPLORERS EDITION

"The Moon's changing faces": a story and a lamp-and-ball game

NAVIGATORS EDITION

The page shown here: geometry of light and orbit

ASTRONOMERS EDITION

Using Kepler's third law to find the Moon's distance

09 — SAMPLE · LOGBOOK

A page from the observation logbook

The logbook is where members record what they see, build and discover. It goes home after every sky-watch and comes back for the showcase. This is a filled-in Moon diary page.

OBSERVATION LOG · NO. 3
Year A · Navigators

My Moon diary

1

OBSERVER
Aarav S.

START DATE
18 July

TIME
8:30 pm

PLACE
Home terrace, Dwarka

LOOKING
South-west

2

SKY TONIGHT
☒ Clear ☐ Hazy ☐ Some clouds ☒ City lights

3

SKETCH THE MOON, SAME TIME EACH NIGHT







Night 1 Night 2 Night 3 Night 4 Night 5

4

WHAT I NOTICED
A thin crescent, lit on the right, low over the trees.

5

MY PREDICTION FOR NIGHT 5

LEVEL SKILL PRACTISED
Sky Cadet: identifies Moon phases by eye

EDUCATOR
STAMP

- Real observing habits**
Date, time, place and direction, just as working astronomers log them.
- Sky conditions**
Members learn how haze and city lights change what they can see.
- Draw, don't just write**
Sketching trains the eye before any camera is used.
- Notice, then predict**
Every sheet asks for a prediction they can test next time.
- Counts towards levels**
Each sheet maps to a level skill and is stamped by the educator.

4

solar observation
sheets

3

sky-watch sheets

6

build records

1

level checklist

10 — FEES

One simple fee, paid by parents

PER STUDENT, FULL ACADEMIC YEAR

Rs 11,000

All inclusive
Full academic year

Covers all 32 sessions, every observation, build kits, the logbook, LMS access and the certificate. It is paid once at enrolment, directly to Astris Space. Returning members re-enrol each year and keep their level.

Rs 0

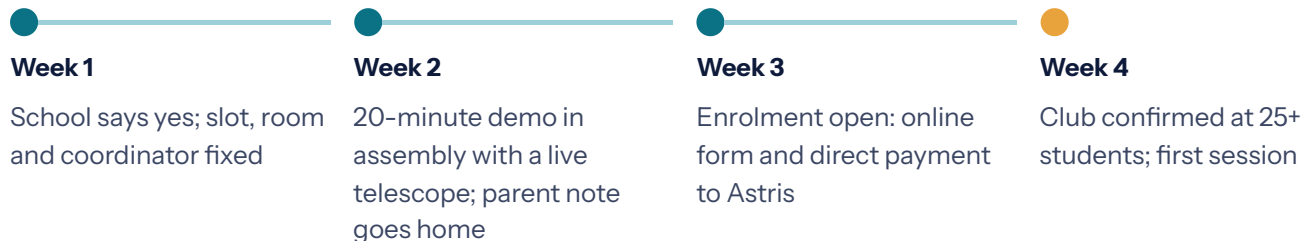
cost to the school. Astris collects fees directly from parents and issues receipts.

100%

refund to every family if the club does not reach 25 students and start.

11 — ENROLMENT

From yes to first session in 4 weeks



Each batch closes at 40 students. If more sign up, a waitlist opens a second batch on another day.

12 — WHY ASTRIS

The people who take India under the stars



Astris Space is a registered Space Tutor under the Indian Space Research Organisation's Space Tutor programme for space education and outreach.

This recognition shapes how we teach: our content is accurate, safe and connected to India's own space programme.

50,000+

students taught
astronomy

500+

astronomy camps
conducted

ISRO

registered Space Tutor

Nakshatra

our own telescopes,
built by Nakshatra
Scopes

The founders

Rohit Agrawal

FOUNDER

Rohit founded Astris Space to make astronomy something students do, not just read about. He has taught astronomy to more than 50,000 students and has led Astris astronomy tours and camps for years, from dark-sky nights near Delhi to astrophotography expeditions in Ladakh.

Harshavardhan Patil

CO-FOUNDER · IIT ROORKEE ALUMNUS

Harshavardhan leads marketing and growth at Astris Space and has been at the frontier of how the brand reaches schools and families. He brought IIT Roorkee into the programme's development, including its quality checks.



Quality-checked with IIT Roorkee

IIT Roorkee was involved in creating the programme and carried out quality checks on its curriculum and activities.

13 — OUTCOMES

What a year in the club changes

For students

Find their way around the night sky, use a telescope with confidence, and keep a real observation log for a full year.

For parents

See their child's curiosity first-hand at three family sky-watches and the end-of-year showcase.

For the school

A visible, NEP-aligned STEM activity at no cost, with events that bring families onto campus.

14 — THE PATH AHEAD

Where the club can lead

YEAR 1

Astronomy Club

One batch of 25–40 students proves the interest.



YEARS 2–3

The full cycle

Years B and C. Members level up and mentor juniors.



WHEN READY

AstroEd Space Lab

A permanent lab and curriculum for the whole school.

Schools that move to an AstroEd Space Lab within two years of starting the club receive **Rs 1,00,000 off** the lab package, and club members become the lab's first student ambassadors.

Start an Astronomy Club at your school

Share your school name, city and the grades you would like to start with. We will set up a demo assembly and send the parent note within one week.