NEXORA Labs
ORBIT OF INNOVATION

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CURRICULUM FRAMEWORK

**CLASSES 1–12**

PROGRESSIVE LEARNING PATHWAY
FOR FUTURE-READY SCHOOLS

NEP 2020 ALIGNED • NCF 2023 • CBSE ALIGNED • EXPERIENTIAL LEARNING




DURATION
**36**
MONTHS
PROGRESSIVE CURRICULUM

## FOUR PROGRESSIVE LEARNING PLANS

| NEXORA LAUNCH | NEXORA ORBIT | NEXORA UNIVERSE | AERONOVA |
|---|---|---|---|
| Foundation STEM Lab | Advanced Innovation Lab | Future Technology Lab | Aerospace Innovation Centre |
| ₹150 Per Student / Month | ₹250 Per Student / Month | ₹350 Per Student / Month | ₹450 Per Student / Month |

## CURRICULUM INCLUDES

ROBOTICS | CODING & AI | ELECTRONICS | IOT | 3D DESIGN & PRINTING | DESIGN THINKING | INNOVATION & ENTREPRENEURSHIP | DRONE TECHNOLOGY | AEROSPACE ENGINEERING | ASTRONOMY & SPACE SCIENCE | PROJECT BASED LEARNING

HANDS-ON EXPERIMENTS | 100+ PROJECTS | SKILL BASED LEARNING | COMPETITIONS & CERTIFICATIONS | 21ST CENTURY SKILLS | CAREER READINESS | NATIONAL & GLOBAL EXPOSURE

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# NEXORA STEM & AERONOVA
INNOVATION ECOSYSTEM

**CURRICULUM FRAMEWORK**
CLASSES 1–12

**DURATION**
36 MONTHS

# ABOUT NEXORA

Nexora STEM & AERONOVA is a future-ready innovation ecosystem empowering schools to transform classrooms into world-class STEM, AI, Robotics, and Aerospace learning hubs.

Our progressive curriculum, hands-on projects, and industry-grade tools prepare students with the skills, mindset, and confidence to solve real-world problems and lead the innovations of tomorrow.




## OUR PURPOSE

**INSPIRE**
Inspire curiosity and creativity in young minds.

**EQUIP**
Equip students with future-ready skills and technologies.

**EMPOWER**
Empower schools with a scalable innovation model.

**TRANSFORM**
Transform ideas into impactful real-world solutions.

## WHY NEXORA?

- Hands-on & Experiential Learning
- Industry-aligned Curriculum
- Progressive Learning Pathway (1–12)
- Integrated Technology Ecosystem
- Project-Based Assessment
- Teacher Training & Continuous Support
- Safe, Scalable & Sustainable Model

> “Building today’s **innovators** for **tomorrow’s world.**

## OUR CORE VALUES

INTEGRITY | COLLABORATION | INNOVATION | EXCELLENCE | INCLUSION

## OUR COMMITMENT

We are committed to delivering world-class STEM & Aerospace education that nurtures curiosity, builds competence, and creates confident, compassionate, and capable global citizens.

TRANSFORMING SCHOOLS | IMPACTING THOUSANDS OF STUDENTS | 100+ HANDS-ON PROJECTS | GLOBAL STANDARD TOOLS & LAB SETUPS | TRAINED & CERTIFIED EDUCATORS | NATIONAL & GLOBAL COMPETITIONS | CAREER FOCUSSED LEARNING

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36 MONTHS

# CURRICULUM PHILOSOPHY

**Learning Today | Innovating Tomorrow | Leading the Future**

At Nexora STEM & AERONOVA, our curriculum is designed to nurture curiosity, creativity, and confidence through experiential learning, real-world projects, and innovation challenges.

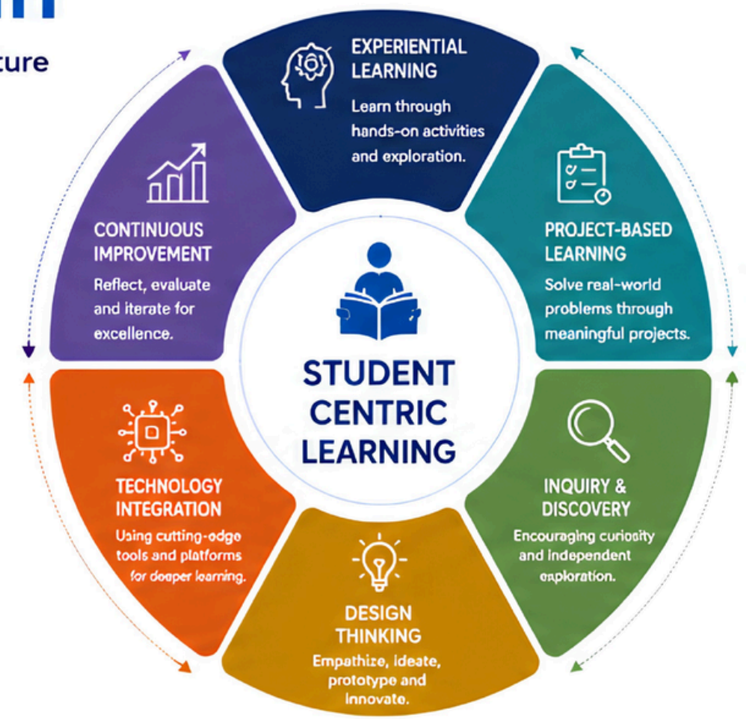
### LEARN BY DOING
Hands-on, experiential learning that transforms concepts into real-world understanding.

### THINK. CREATE. INNOVATE.
Encouraging critical thinking, creativity, and problem-solving through design thinking.

### COLLABORATE & COMMUNICATE
Team-based projects that build collaboration, communication, and leadership skills.

### CONNECT TO THE REAL WORLD
Industry-aligned tools, technologies, and projects that solve real-life challenges.

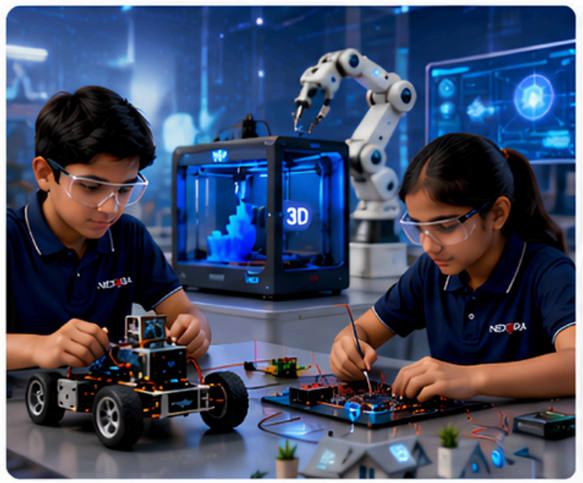
## OUR PEDAGOGICAL APPROACH




"We don't just teach subjects, we build innovators."

## OUR LEARNING PILLARS

- CRITICAL THINKING
- CREATIVITY & INNOVATION
- COLLABORATION
- COMMUNICATION
- LIFELONG LEARNING








Our philosophy is to empower every learner with the **knowledge, skills, mindset,** and **values** to become confident problem-solvers and **future-ready global citizens.**

## OUR CORE PRINCIPLES

- NEP 2020 & NCF 2023 ALIGNED
- NCERT & CBSE INTEGRATED
- PROGRESSIVE GRADE-WISE LEARNING
- HANDS-ON, MINDS-ON, HEARTS-ON
- INNOVATION, ENTREPRENEURSHIP & LEADERSHIP
- SUSTAINABILITY & SOCIAL RESPONSIBILITY
- ASSESS, REFLECT & CELEBRATE GROWTH

## OUR PROMISE TO SCHOOLS

- WORLD-CLASS CURRICULUM
- TRAINED & CERTIFIED EDUCATORS
- STATE-OF-THE-ART LAB SETUP
- CONTINUOUS SUPPORT & CAPACITY BUILDING
- MEASURABLE LEARNING OUTCOMES
- STUDENT SUCCESS IS OUR SUCCESS

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

CURRICULUM FRAMEWORK
CLASSES 1–12

DURATION
36 MONTHS

# PLAN PROGRESSION

ONE JOURNEY. ENDLESS POSSIBILITIES.

Nexora's four-tier progressive curriculum takes students from strong foundations to advanced innovation and leadership across 11 future-ready domains. Each plan builds on the previous one, ensuring a seamless and continuous learning experience.

### STUDENT LEARNING JOURNEY

**EXPLORE**
Discover interests and build curiosity through exploration.

**BUILD**
Apply knowledge to create models, systems and solutions.

**INNOVATE**
Think critically, innovate and develop real-world solutions.

**LEAD**
Engineer advanced systems and lead innovations for a better tomorrow.

## PLAN 1
### NEXORA LAUNCH
Foundation STEM Lab
**₹150**
Per Student / Month

**DOMAINS COVERED (4)**
- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Projects: 20 – 25
Hardware Kits: Beginner
Software Platforms: 3
Learning Level: Foundation
Focus: Explore • Learn • Create

## PLAN 2
### NEXORA ORBIT
Advanced Innovation Lab
**₹250**
Per Student / Month

**DOMAINS COVERED (6)**
- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing

Projects: 35 – 40
Hardware Kits: Advanced
Software Platforms: 6
Learning Level: Builder
Focus: Build • Prototype • Experiment

## PLAN 3
### NEXORA UNIVERSE
Future Technology Lab
**₹350**
Per Student / Month

**DOMAINS COVERED (8)**
- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship

Projects: 50 – 60
Hardware Kits: Professional
Software Platforms: 9
Learning Level: Innovator
Focus: Innovate • Solve • Create Impact

## PLAN 4
### AERONOVA
Aerospace Innovation Centre
**₹450**
Per Student / Month

**DOMAINS COVERED (11)**
- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

Projects: 75 – 100
Hardware Kits: Aerospace
Software Platforms: 12
Learning Level: Specialist
Focus: Engineer • Explore • Lead

### DOMAINS COVERED (11 TOTAL)
- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

### PROGRESSION AT A GLANCE

**LAUNCH → FOUNDATION**
4 Domains | 20–25 Projects
Build Strong STEM Fundamentals

**ORBIT → BUILDER**
6 Domains | 35–40 Projects
Build Smart Systems & Prototypes

**UNIVERSE → INNOVATOR**
8 Domains | 50–60 Projects
Create Intelligent Solutions

**AERONOVA → SPECIALIST**
11 Domains | 75–100 Projects
Lead Aerospace & Space Innovations

### WHAT STUDENTS GAIN
- HANDS-ON LEARNING
- 100+ REAL-WORLD PROJECTS
- INDUSTRY-ALIGNED SKILLS
- CERTIFICATIONS & RECOGNITION
- INNOVATION PORTFOLIO
- CAREER READINESS
- NATIONAL & GLOBAL EXPOSURE

EXPLORE TODAY • BUILD SKILLS • INNOVATE SOLUTIONS • LEAD TOMORROW

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

**CURRICULUM FRAMEWORK**
**CLASSES 1–12**

**PROGRESSIVE LEARNING JOURNEY**
**EXPLORE → BUILD → INNOVATE → LEAD**

# PLAN PROGRESSION

Four Progressive Plans | 11 Future-Ready Domains

A structured progression of domains and projects from foundational exploration to specialized innovation leadership.

### DOMAINS COVERED (11 TOTAL)

1. Robotics Fundementals
2. Coding & Computational Thinking
3. Electronics Basics
4. Design Thinking & Maker Education
5. Internet of Things (IoT)
6. 3D Design & Printing
7. Artificial Intelligence (AI)
8. Innovation & Entrepreneurship
9. Drone Technology
10. Aerospace Engineering
11. Astronomy & Space Science

### LEARNING JOURNEY

**EXPLORE** — Discover & Build Curiosity
→ **BUILD** — Apply Knowledge & Create
— **INNOVATE** — Solve Real-world Problems
→ **LEAD** — Engineer the Future & Inspire Others

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**PLAN 1**

### NEXORA LAUNCH
FOUNDATION STEM LAB

₹150 / Student / Month

DOMAINS COVERED (4)

1 2 3 4

Explore • Learn • Create

**PLAN 2**

### NEXORA ORBIT
ADVANCED INNOVATION LAB

₹250 / Student / Month

DOMAINS COVERED (6)

1 2 3 4 5 6

Build • Prototype • Experiment

**PLAN 3**

### NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

₹350 / Student / Month

DOMAINS COVERED (8)

1 2 3 4 5 6 7 8

Innovate • Solve • Create Impact

**PLAN 4**

### AERONOVA
AEROSPACE INNOVATION CENTRE

₹450 / Student / Month

DOMAINS COVERED (11)

1 2 3 4 5 6 7 8 10 11

Engineer • Explore • Lead

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### SAMPLE PROJECTS BY PLAN (PROGRESSIVE COMPLEXITY)

| CLASS LEVEL | PLAN 1 | PLAN 2 | PLAN 3 | PLAN 4 |
|---|---|---|---|---|
| 1 | My Robot Friend, LED Flash Card, Paper Windmill | Smart Lamp, 3D Printed Name Tag, Motion Toy | AI Image Classifier (Basic), Smart Helper Bot, AI Story Generator | Rocket Model, Paper Satellite, Star Viewer |
| 2 | Simple Circuit, Moving Car, Color Sorter | Smart House Model, Fan with Switch, 3D Puzzle | AI Voice Assistant, Object Detector (Basic), Chatbot | Water Rocket, Solar System Model, Wind Rocket |
| 3 | Hand Fan, Traffic Light Model, Safe Box | IoT Plant Monitor, Smart Car, 3D Keychain | AI Face Detection, Gesture Music Player, AI Drawing Bot | Drone Model, Moon Rover (Model), Telescope Viewer |
| 4 | Line Follower (Basic), Mini Elevator, Rain Alarm | Temperature Monitor, 3D Pen Stand, Robotic Hand | AI Traffic Management, Waste Classifier, AI Game | RC Plane (Basic), Orbit Model, Rocket Launcher |
| 5 | Smart Dustbin, Automatic Street Light, Gear Car | IoT Weather Station, 3D Printed Spinning Top, Door Lock | AI Plant Disease Detector, Smart Security Camera, Chatbot | Quadcopter Assembly, Mars Rover (Basic), Star Tracker |
| 6 | Obstacle Avoider, Robotic Arm (Basic), Door Alarm | Smart Irrigation System, Bluetooth Controlled Car, 3D Gear System | AI Based Attendance, Computer Vision Model, AI Tutor Bot | GPS Drone, Rocket with Parachute, Planetarium Model |
| 7 | Bluetooth Robot, Soil Moisture Alert, Clap Switch | Home Automation (IoT), IoT Based Water Level Indicator | AI Chatbot Web App, AI Based Emotion Detector | Autonomous Drone (Basic), Satellite Communication (Model) |
| 8 | Maze Solver, Fire Alarm System, Burglar Alarm | Smart Parking System, IoT Air Quality Monitor, 3D Robot | AI Object Detection Drone (Simulation), AI Voice Bot | Drone Mapping (Simulation), CanSat (Model) |
| 9 | Pick & Place Robot, Line Follower (Advanced), Smart Home Model | IoT Attendance System, Bluetooth Home Automation | AI Medical Image Classifier, AI Resume Screener | FPV Drone, Rocket Altitude Tracker, CubeSat Model |
| 10 | Voice Controlled Car, Gesture Robot, Smart Energy Meter | IoT Based Health Monitor, 3D Printed Drone Frame (Model) | AI Stock Predictor (Basic), AI Robotics Integration | Autonomous Drone with Payload, High Altitude Rocket |
| 11 | Robotic Arm (Advanced), Home Automation, Robo Soccer | Smart City Model, IoT Controlled Greenhouse | AI Recommendation System, Entrepreneurship Project | CanSat Mission, Drone Swarm (Simulation) |
| 12 | Autonomous Robot, Industrial Robot Simulation, Final Year Project | Industrial Automation Model, IoT Based Security System | AI Capstone Project, Innovation & Startup Prototype | Aerospace Capstone Project, Satellite Mission Design |

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**PROGRESSION AT A GLANCE**

- 4 Plans
- 11 Domains
- 20–25 Projects/Plan (Avg)
- 100+ Projects Overall
- Hands-on Learning
- Industry-Aligned Skills
- Future-Ready Innovators

**OUTCOME**

From exploring curiosity in early grades to leading innovation in advanced technologies, Nexora's curriculum builds confident problem-solvers, creators and future leaders.

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

**CURRICULUM FRAMEWORK**
**CLASSES 1–12**

**DURATION**
**36 MONTHS**

# TEACHER'S GUIDE

**Empower Teachers. Inspire Innovators.**

Our curriculum is designed to support and empower educators as facilitators of learning. This guide provides the strategies, tools, and best practices to deliver engaging, inclusive and impactful STEM experiences.

## OUR TEACHING PRINCIPLES

**STUDENT CENTRIC**
Focus on individual potential and learning styles.

**EXPERIENTIAL LEARNING**
Learn by doing through hands-on activities and projects.

**INQUIRY DRIVEN**
Encourage questions, curiosity and independent discovery.

**REAL WORLD CONNECTION**
Relate concepts to daily life, industries and future careers.

**INCLUSIVE ENVIRONMENT**
Create a safe, respectful and supportive classroom for all learners.

**CONTINUOUS IMPROVEMENT**
Reflect, adapt and innovate to enhance teaching and learning.

## TEACHING STRATEGIES

**Project-Based Learning (PBL)**
Learn through meaningful projects.

**Collaborative Learning**
Work in teams to share ideas and solve problems.

**Inquiry & Discovery**
Let students explore, question and find solutions.

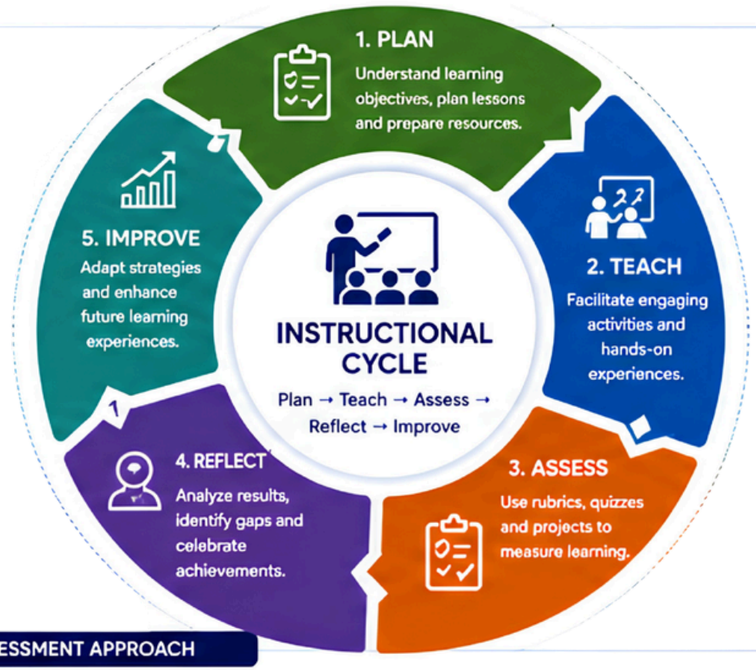
**Differentiated Instruction**
Adapt content and activities to meet diverse needs.

**Flipped Classroom**
Use videos and resources for self-paced learning.

**Gamification**
Use challenges, badges and rewards to motivate learners.

## TEACHER AS A FACILITATOR

- Guide curiosity and inquiry
- Encourage exploration and experimentation
- Support collaboration and teamwork
- Foster creativity and critical thinking
- Provide feedback and celebrate progress
- Connect learning to real-world applications




## CLASSROOM BEST PRACTICES

**Start with a Hook**
Spark curiosity with an engaging question, demo or story.

**Promote Safety First**
Follow lab safety rules and guide responsible use of tools.

**Set Clear Expectations**
Share learning goals, success criteria and classroom norms.

**Connect & Extend**
Relate concepts to previous learning and real-world applications.

**Encourage Questions**
Create a culture where all questions are welcome.

**Celebrate & Share**
Showcase student projects and recognize achievements.

## TEACHER SUPPORT & RESOURCES

- Detailed lesson plans & activity sheets
- Project guides & step-by-step instructions
- Assessment rubrics & checklists
- Video tutorials & demonstration guides
- Printable templates & worksheets
- Live training & continuous professional support

## ASSESSMENT APPROACH

**FORMATIVE ASSESSMENT**
Ongoing checks for understanding through observations, quizzes, class discussions and quick feedback.

**SUMMATIVE ASSESSMENT**
Evaluate learning at the end of a unit/term using projects, tests, presentations and practical tasks.

**PERFORMANCE ASSESSMENT**
Assess application of skills through real-world projects, models, prototypes and presentations.

**SELF & PEER ASSESSMENT**
Encourage reflection, self-evaluation and peer feedback to build ownership and critical thinking.

## TEACHER MINDSET

**PASSION**
Love what you teach.

**PATIENCE**
Every learner has a unique pace.

**POSITIVITY**
Inspire confidence and a growth mindset.

**FLEXIBILITY**
Adapt, innovate and stay open-minded.

**LIFELONG LEARNER**
Keep learning, exploring and growing.

"Great teachers don't just teach, they ignite curiosity and build futures."

TRAINED & CERTIFIED EDUCATORS

CONTINUOUS PROFESSIONAL DEVELOPMENT

DEDICATED TEACHER SUPPORT PORTAL

COMMUNITY OF INNOVATORS

RECOGNITION & REWARDS

**TOGETHER, WE EMPOWER TEACHERS TO SHAPE TOMORROW.**

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 1 – SHORT SYLLABUS
DISCOVER • EXPLORE • CREATE

CURRICULUM FRAMEWORK CLASS 1 | DURATION 36 MONTHS

## PLAN PROGRESSION

A joyful learning journey that grows with each plan and adds new domains for deeper exploration.

### PLAN 1 – NEXORA LAUNCH
FOUNDATION STEM LAB

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

### PLAN 2 – NEXORA ORBIT
ADVANCED INNOVATION LAB

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing

### PLAN 3 – NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

DOMAINS COVERED (8)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship

### PLAN 4 – AERONOVA
AEROSPACE INNOVATION CENTRE

DOMAINS COVERED (11)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

## CLASS 1 LEARNING OUTCOMES

- Build curiosity and love for exploration and discovery.
- Develop basic understanding of technology and how things work.
- Enhance creativity, imagination and problem solving.
- Learn to work in teams and communicate ideas.
- Develop hands-on skills through play-based learning.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

**TERM 1** (Months 1–3)
Theme: Me & My World

- Getting to know technology
- Parts of a robot
- Basic shapes & patterns in coding
- On/Off – Lights & Switches
- Simple craft & maker activities

**TERM 2** (Months 4–6)
Theme: My Home

- Simple machines around us
- Sequence & directions (coding)
- Basic circuits – LED & Battery
- My home model
- Team play & sharing ideas

**TERM 3** (Months 7–9)
Theme: My Community

- Helping hands – Robots in real life
- Block coding basics
- Sensors – Light & Sound
- Community helpers project
- Sharing & presenting ideas

**TERM 4** (Months 10–12)
Theme: My Planet

- Caring for earth & environment
- Smart devices around us (IoT intro)
- Creative design with 3D shapes
- Space & stars (intro)
- Build, show & celebrate

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 1 (BY PLAN)

| TEAN 1 LAUNCH | PLAN 2 ORBIT | PLAN 3 UNIVERSE | PLAN 4 AERONOVA |
|---|---|---|---|
|  My Robot Friend |  Smart Lamp |  AI Story Generator |  Paper Rocket |
|  LED Greeting Card |   3D Printed Name Tag |  AI Drawing |  Solar System Model |
|  Paper Windmill |  Smart House Model |  Smart Helper Bot |  Star Viewer |

### SKILLS DEVELOPED

- Observation
- Creativity
- Logical Thinking
- Problem Solving
- Fine Motor Skills
- Communication
- Teamwork
- Confidence

### ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Projects & Presentations
- Quizzes & Games
- Reflection & Sharing
- Portfolio (Work Display)

### TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Electronic Exploration Kit
- Creative Maker Kit
- 3D Shapes & Blocks
- Art & Craft Essentials




### 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

### TEACHING APPROACH

Play Based Learning | Activity Driven | Hands-on Exploration | Safe & Inclusive Environment →

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Future Ready Innovators

> "Planting the seeds of curiosity today, building the innovators of tomorrow."

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 2 – SHORT SYLLABUS
DISCOVER • EXPLORE • CREATE

CURRICULUM FRAMEWORK CLASS 2 | DURATION 36 MONTHS

## PLAN PROGRESSION

A structured 4-plan learning journey that builds concepts step-by-step and adds new domains at every level.

## PLAN 1 – NEXORA LAUNCH
FOUNDATION STEM LAB

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

## PLAN 2 – NEXORA ORBIT
ADVANCED INNOVATION LAB

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing

Build • Prototype • Experiment

## PLAN 3 – NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

DOMAINS COVERED (8)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

## PLAN 4 – AERONOVA
AEROSPACE INNOVATION CENTRE

DOMAINS COVERED (11)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

Engineer • Explore • Lead

## CLASS 2 LEARNING OUTCOMES

- Understand basic STEM concepts through fun and hands-on activities.
- Apply simple logic in coding and daily life situations.
- Build and test simple models using electronics and craft.
- Develop teamwork, creativity and communication.
- Explore technology with curiosity and responsibility.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

**TERM 1** (Months 1–3) Theme: My World
- Technology in my life
- Simple machines
- Patterns & sequences (coding)
- LED – On/Off
- Craft & maker activities
- Team games & sharing

**TERM 2** (Months 4–6) Theme: My Home
- Home appliances & safety
- ScratchJr basics
- Switches & circuits
- My alarm system model
- Paper craft – useful things
- Show & tell activities

**TERM 3** (Months 7–9) Theme: My Community
- People who help us
- Coding – events & actions
- Sensors – light & touch
- Smart dustbin model
- Community helpers project
- Group presentation

**TERM 4** (Months 10–12) Theme: My Planet
- Care for nature
- IoT – smart plant (intro)
- Energy sources
- Windmill / Solar car
- Recycling & upcycling craft
- Exhibition & reflection

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Fun Fact / Wrap-up 5 min

## SAMPLE PROJECTS FOR CLASS 2 (BY PLAN)

| PLAN 1 LAUNCH | PLAN 2 ORBIT | PLAN 3 UNIVERSE | PLAN 4 AERONOVA |
|---|---|---|---|
| My Helping Robot | Smart Lamp | AI Story Generator | Paper Rocket |
| LED Blinking Card | 3D Printed Keychain | AI Drawing App | Solar System Model |
| Paper Windmill | Smart House Model | AI Helper Bot | Star Viewer |

## SKILLS DEVELOPED

- Observation
- Creativity
- Logical Thinking
- Problem Solving
- Fine Motor Skills
- Communication
- Teamwork
- Confidence

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Games
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer Appreciation

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Electronic Exploration Kit
- Creative Maker Kit
- Art & Craft Essentials
- 3D Shapes & Blocks




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Play Based Learning | Activity Driven Lessons | Hands-on Exploration | Real World Connection | Safe & Inclusive Environment

→ Happy Learners, Confident Explorers, Creative Thinkers

- Future Ready
- Problem Solvers
- Responsible Innovators

> "Today's curiosity, tomorrow's innovation."

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 3 – SHORT SYLLABUS
DISCOVER • EXPLORE • CREATE

CURRICULUM FRAMEWORK CLASS 3 | DURATION 36 MONTHS

## PLAN PROGRESSION

A progressive 4-plan learning path that strengthens concepts and introduces new domains at every level.

## PLAN 1 – NEXORA LAUNCH
FOUNDATION STEM LAB

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

## PLAN 2 – NEXORA ORBIT
ADVANCED INNOVATION LAB

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing

Build • Prototype • Experiment

## PLAN 3 – NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

DOMAINS COVERED (8)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

## PLAN 4 – AERONOVA
AEROSPACE INNOVATION CENTRE

DOMAINS COVERED (11)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education
- Internet of Things (IoT)
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

Engineer • Explore • Lead

## CLASS 3 LEARNING OUTCOMES

- Apply basic STEM concepts in real-life projects.
- Write simple code and debug basic programs.
- Build working models using electronics and circuits.
- Understand the basics of IoT and 3D design.
- Explore AI concepts through fun and interactive activities.
- Develop creativity, teamwork and problem-solving skills.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

**TERM 1** (Months 1–3) Theme: My World
- Simple machines
- Basic coding – sequences
- LEDs & circuits
- On/Off devices
- Shapes in 3D
- Craft & maker activities
- Team games & sharing

**TERM 2** (Months 4–6) Theme: My Community
- Sensors – light & motion
- Loops in coding (repeat)
- Buzzer & sound circuits
- Smart street light (intro IoT)
- 3D models with shapes
- Paper engineering
- Group activities

**TERM 3** (Months 7–9) Theme: Our Planet
- IoT – monitoring & control
- Events in coding (if/else)
- Simple robots
- Environmental projects
- Design thinking steps
- Recycle & reuse projects
- Show & tell

**TERM 4** (Months 10–12) Theme: The Universe
- AI – image recognition (intro)
- Data & patterns
- Smart home model
- 3D printing (basics)
- Space & planets (STEM link)
- Innovation challenge
- Exhibition & reflection

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Fun Fact / Wrap-up 5 min

## SAMPLE PROJECTS FOR CLASS 3 (BY PLAN)

| PLAN 1 LAUNCH | PLAN 2 ORBIT | PLAN 3 UNIVERSE | PLAN 4 AERONOVA |
|---|---|---|---|
| Line Follower Robot | Smart Street Light Model | AI Image Sorter | Water Rocket |
| LED Night Lamp | 3D Printed Keychain | AI Drawing App | Solar System Model |
| Moving Fan Model | Weather Station (IoT Intro) | Smart Home Model | Star Tracker (Intro) |

## SKILLS DEVELOPED

- Logical Thinking
- Creativity
- Problem Solving
- Observation
- Fine Motor Skills
- Teamwork
- Communication
- Confidence

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Games
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer Appreciation

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Electronic Exploration Kit
- Creative Maker Kit
- 3D Shapes & Blocks
- Art & Craft Essentials




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Play Based Learning → Activity Driven Lessons | Inquiry & Exploration | Project Based Learning | Reflect & Improve

- Curious Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

> "Small steps today, Big innovations tomorrow."

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 4 – SHORT SYLLABUS
DISCOVER • EXPLORE • CREATE

CURRICULUM FRAMEWORK CLASS 4 | DURATION 36 MONTHS

## PLAN PROGRESSION

A progressive 4-plan learning path that strengthens concepts, builds skills and introduces advanced domains step by step.

### PLAN 1 – NEXORA LAUNCH
FOUNDATION STEM LAB

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

### PLAN 2 – NEXORA ORBIT
ADVANCED INNOVATION LAB

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- Design Thinking & Maker Education

Build • Prototype • Experiment

### PLAN 3 – NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

DOMAINS COVERED (8)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- 3D Design & Things (IoT)
- 3D Design & Things (IoT)
- Artificial Intelligence (AI)
- Innoficial & Entrepreneurshl)
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

### PLAN 4 – AERONOVA
AEROSPACE INNOVATION CENTRE

DOMAINS COVERED (11)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- 3D Design & Printing
- Artificial Intelligence (AI)
- Innovation & Entrepreneurship
- Drone Tolgn Rlectns
- Aerospace & Maker Education
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

Engineer • Explore • Lead

## CLASS 4 LEARNING OUTCOMES

- Write simple programs and build logic using sequences, loops and conditions.
- Build working models using electronics and sensors.
- Understand basic IoT concepts and real-world applications.
- Create 3D models and experience printing.
- Explore AI tools and understand smart machines.
- Develop solutions through design thinking and teamwork.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

### TERM 1 (Months 1–3)
Theme: My World

- Basic programming in block environments
- Digital devices around me
- Simple circuits & components
- Shapes in 3D
- Craft & maker activities
- Team games & sharing

### TERM 2 (Months 4–6)
Theme: My Community

- Sequences, loops (intro)
- Sensors – input devices
- LEDs, buzzers & switches
- Introduction to IoT (what & why)
- 3D modelling – basics
- Problem solving activities

### TERM 3 (Months 7–9)
Theme: Our Planet

- Events & actions in code (if/else)
- IoT – real-life examples
- Data collection (weather, temperature)
- 3D design – extrude & shapes
- AI – what is AI?
- Group project work

### TERM 4 (Months 10–12)
Theme: The Future

- Functions in block coding
- Build smart IoT model
- Automation – sensors in action
- 3D printing (intro)
- AI – machine learning for kids
- Exhibition & reflection

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 4 (BY PLAN)

### PLAN 1 LAUNCH


Line Following Robot


Smart Traffic Light


Automatic Night Lamp

### PLAN 2 ORBIT


Weather Station (IoT Intro)



3D Printed Keychain


Smart Dustbin (IR Sensor)

### PLAN 3 UNIVERSE


AI Image Classifier (Teachable Machine)


Smart Irrigation Model


3D Printed Pen Stand

### PLAN 4 AERONOVA


Drone Model (Intro)


Solar System Model


Water Rocket Launcher

## SKILLS DEVELOPED

- Logical Thinking
- Creativity
- Problem Solving
- Digital Literacy
- Fine Motor Skills
- Communication
- Teamwork
- Confidence

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Games
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer Appreciation

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Electronic Exploration Kit
- Creative Maker Kit
- 3D Shapes & Blocks
- IoT Starter Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Play Based Learning → Activity Driven Lessons | Hands-on Exploration | Real World Connection | Safe & Inclusive Environment →

Happy Learners
Confident Explorers
Creative Thinkers

- Problem Solvers
- Future Ready
- Responsible Innovators

> Small ideas today,
> Big innovations tomorrow.

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 5 – SHORT SYLLABUS
DISCOVER • EXPLORE • CREATE

CURRICULUM FRAMEWORK CLASS 5 | DURATION 36 MONTHS

## PLAN PROGRESSION

A 4-plan learning path designed to strengthen concepts, build skills and introduce advanced domains progressively.

### PLAN 1 – NEXORA LAUNCH
FOUNDATION STEM LAB

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

### PLAN 2 – NEXORA ORBIT
ADVANCED INNOVATION LAB

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- Design Thinking & Maker Education

Build • Prototype • Experiment

### PLAN 3 – NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

DOMAINS COVERED (8)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Connectivity
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data & Analytics
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

### PLAN 4 – AERONOVA
AEROSPACE INNOVATION CENTRE

DOMAINS COVERED (11)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Smart Systems
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data Science & Analytics
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

Engineer • Explore • Lead

## CLASS 5 LEARNING OUTCOMES

- Understand and apply STEM concepts in real-life scenarios.
- Write basic programs using loops, functions and conditions.
- Build electronic circuits and use sensors in projects.
- Explore IoT devices and collect real-time data.
- Design 3D models and print useful objects.
- Explore AI tools and use data to solve simple problems.
- Develop teamwork, creativity, problem-solving and leadership.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

**TERM 1** (Months 1–3)
Theme: My World, My Tech

- Algorithms & flowcharts
- Introduction to block coding
- Simple circuits – LED, Switch
- Using sensors – Light, Touch
- IoT basics – what & why
- Mini maker activities
- Team games & challenges

**TERM 2** (Months 4–6)
Theme: My Community

- Advanced coding – loops & functions
- More on sensors – Temp, Sound, IR
- IoT – data collection (ThingSpeak)
- 3D design basics (Tinkercad)
- Simple automation projects
- Problem solving activities
- Show & tell presentations

**TERM 3** (Months 7–9)
Theme: Our Planet

- Data logging & visualization
- AI basics – what is AI?
- Image classification (Intro activity)
- Robotics – line follower logic
- Solar energy & sustainability
- Environmental projects
- Group project work

**TERM 4** (Months 10–12)
Theme: The Future

- AI tools – machine learning for kids
- Smart systems & IoT applications
- Drone basics (Intro)
- 3D printing – advanced shapes
- Innovation challenge
- Exhibition & reflection

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 5 (BY PLAN)

**PLAN 1 LAUNCH**


Obstacle Avoider Robot


LED Pattern Board


Wind Vane (Weather Indicator)

**PLAN 2 ORBIT**


Smart Plant Watering System (IoT)



3D Printed Key Holder


Home Automation Model (Lights & Fan Control)

**PLAN 3 UNIVERSE**


AI Image Classifier (Teachable Machine)


Smart Dustbin with Fill Level Indicator


Data Dashboard (Environment Data)

**PLAN 4 AERONOVA**


Drone Model (Intro Build)


Rocket Launcher Model (Air Powered)


Solar System with Orbiting Planets

## SKILLS DEVELOPED

- Logical Thinking
- Creativity
- Problem Solving
- Digital Literacy
- Fine Motor Skills
- Communication
- Teamwork
- Confidence

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Games
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer Appreciation

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Electronic Exploration Kit
- Creative Maker Kit
- 3D Shapes & Blocks
- IoT Starter Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Play Based Learning → Activity Driven Lessons → Inquiry & Exploration → Project Based Learning → Reflect & Improve →

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

> Small ideas today,
> Big innovations tomorrow.

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 6 – SHORT SYLLABUS
**DISCOVER • EXPLORE • CREATE**

**CURRICULUM FRAMEWORK CLASS 6** | **DURATION 36 MONTHS**

## PLAN PROGRESSION

A progressive 4-plan learning path that strengthens concepts, builds skills and introduces advanced domains step by step.

## PLAN 1 – NEXORA LAUNCH
**FOUNDATION STEM LAB**

**DOMAINS COVERED (4)**

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

**Explore • Learn • Create**

## PLAN 2 – NEXORA ORBIT
**ADVANCED INNOVATION LAB**

**DOMAINS COVERED (6)**

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- Design Thinking & Maker Education

**Build • Prototype • Experiment**

## PLAN 3 – NEXORA UNIVERSE
**FUTURE TECHNOLOGY LAB**

**DOMAINS COVERED (8)**

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Connectivity
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data & Analytics
- Innovation & Entrepreneurship

**Innovate • Solve • Create Impact**

## PLAN 4 – AERONOVA
**AEROSPACE INNOVATION CENTRE**

**DOMAINS COVERED (11)**

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Smart Systems
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data Science & Analytics
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

**Engineer • Explore • Lead**

## CLASS 6 LEARNING OUTCOMES

- Apply computational thinking to solve real-life problems.
- Write modular code in block/ text-based environments.
- Design and build electronic circuits with sensors.
- Understand IoT and its applications in daily life.
- Create 3D models and prototypes using digital tools.
- Explore AI concepts and build simple machine learning models.
- Understand basics of drones, aerospace and astronomy.
- Work in teams to design, test and improve solutions.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

### TERM 1 (Months 1–3)
Theme: My Tech World

- Algorithms & Flowcharts
- Scratch / Python Basics
- Basic Electronics – LED, Switch, Resistor
- Introduction to Sensors
- Simple Machines & Mechanisms
- Craft & Design Thinking
- Team Games & Challenges

### TERM 2 (Months 4–6)
Theme: Smart Systems

- Loops, Conditions & Functions
- Micro:bit / Arduino Basics
- Sensors – Temp, Light, IR
- Introduction to IoT
- Data Collection (ThingSpeak)
- 3D Designing Basics (Tinkercad)
- Mini Projects & Prototyping
- Problem Solving Activities

### TERM 3 (Months 7–9)
Theme: Intelligence Around Us

- AI Basics – What is AI?
- Machine Learning (Teachable Machine / Scratch ML)
- Data Logging & Visualization
- Robotics – Line Follower Logic
- IoT Automation
- Sustainability Projects
- Group Project Work

### TERM 4 (Months 10–12)
Theme: Innovate & Inspire

- Advanced IoT Applications
- AI Project – Image / Voice
- Drone Basics (Simulation)
- Aerospace & Flight Principles
- 3D Printing Basics
- Innovation Challenge
- Exhibition & Reflection

## WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 6 (BY PLAN)

### PLAN 1 LAUNCH


Obstacle Avoidance Robot


Smart Door Alarm


Digital Dice


Automatic Street Light

### PLAN 2 ORBIT


Smart Irrigation System


Weather Monitoring Station


Bluetooth Controlled Robot


3D Printed Gear System

### PLAN 3 UNIVERSE


AI Attendance System


Image Recognition Model


Smart Waste Segregation


AI Voice Assistant

### PLAN 4 AERONOVA


GPS Drone Programming


Water Rocket with Parachute


Flight Stability Experiment


Planetarium Model

## SKILLS DEVELOPED

- Logical Thinking
- Creativity
- Problem Solving
- Digital Literacy
- Fine Motor Skills
- Teamwork
- Communication
- Confidence

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Games
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer Appreciation

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Electronic Exploration Kit
- IoT Starter Kit
- 3D Design & Printing Kit
- AI & Data Kit
- Drone Education Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Project Based Learning → Activity Driven Lessons | Hands-on Exploration | Real World Connection | Reflect & Improve

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

> "Curiosity today, Innovation tomorrow."

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 7 – SHORT SYLLABUS
**DISCOVER • EXPLORE • CREATE**

CURRICULUM FRAMEWORK CLASS 7 | DURATION 36 MONTHS

## PLAN PROGRESSION

A structured 4-plan learning path that builds concepts, develops skills and introduces advanced domains progressively.

### PLAN 1 – NEXORA LAUNCH
**FOUNDATION STEM LAB**

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

### PLAN 2 – NEXORA ORBIT
**ADVANCED INNOVATION LAB**

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- Design Thinking & Maker Education

Build • Prototype • Experiment

### PLAN 3 – NEXORA UNIVERSE
**FUTURE TECHNOLOGY LAB**

DOMAINS COVERED (8)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Connectivity
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data & Analytics
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

### PLAN 4 – AERONOVA
**AEROSPACE INNOVATION CENTRE**

DOMAINS COVERED (11)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Smart Systems
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data Science & Analytics
- Drone Technology
- Aerospace Engineering
- Astrooomy & Space Science

Engineer • Explore • Lead

## CLASS 7 LEARNING OUTCOMES

- Strengthen logical & computational thinking through coding.
- Build working models using electronics, sensors & motors.
- Understand IoT and its real-world applications.
- Explore AI concepts and ML basics.
- Apply 3D design thinking to solve real-life problems.
- Understand drone principles and basic programming.
- Work in teams to design, test and present innovative solutions.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

### TERM 1 (Months 1-3)
Theme: Tech Explorers

- Introduction to Algorithms & Flowcharts
- Python Basics – Variables, Operators, I/O
- Digital Electronics – Logic Gates
- Introduction to Sensors
- Simple Robotics Mechanisms
- Design Thinking Basics
- Team Building Activities

### TERM 2 (Months 4-6)
Theme: Connect & Build

- Python – Conditional Statements & Loops
- Microcontrollers – Arduino Introduction
- Interfacing LEDs, Buzzers & Motors
- Intro to IoT – What & Why
- 3D Design Basics (Tinkercad)
- Mini Projects & Prototyping
- Problem Solving Challenges

### TERM 3 (Months 7-9)
Theme: Smart Solutions

- IoT – Sensors & Data Collection
- Python Functions & File Handling
- Robotics – Sensors Integration
- AI Basics – ML Concepts
- Data Handling with Spreadsheets
- 3D Printing Basics
- Project-Based Learning

### TERM 4 (Months 10-12)
Theme: Innovate & Impact

- Python – Libraries (Math, Random, Time)
- IoT Applications – Home Automation
- Computer Vision Basics
- Drone Fundamentals
- Aerospace Basics – Flight Principles
- Capstone Project & Exhibition
- Reflection & Presentation

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 7 (BY PLAN)

| PLAN 1 LAUNCH | PLAN 2 ORBIT | PLAN 3 UNIVERSE | PLAN 4 AERONOVA |
|---|---|---|---|
|  Line Following Robot |  Smart Home Light System |  AI Image Classifier |  FPV Drone Programming |
|  Digital Thermometer |  IoT Weather Station |  Smart Irrigation System |  Water Rocket Launcher |
|  Password Protected Door Lock |  Bluetooth Controlled Car |  Face Recognition Attendance |  RC Plane – Aerodynamics |
|  Simple Robotic Arm |  3D Printed Phone Stand |  Chatbot using NLP |  Solar Powered Rover |

## SKILLS DEVELOPED

- Logical Thinking
- Problem Solving
- Creativity
- Digital Literacy
- Fine Motor Skills
- Teamwork
- Communication
- Confidence

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Games
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer Appreciation

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Electronic Exploration Kit
- IoT Starter Kit
- 3D Design & Printing Kit
- AI & Data Kit
- Drone Education Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Project Based Learning → Activity Driven Lessons → Hands-on Exploration → Inquiry Based Learning → Real World Connection → Reflect & & Improve →

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

> "Curiosity today, Innovation tomorrow."

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 8 – SHORT SYLLABUS
DISCOVER • EXPLORE • CREATE

CURRICULUM FRAMEWORK CLASS 8 | DURATION 36 MONTHS

## PLAN PROGRESSION

A structured 4-plan learning path to strengthen concepts, build skills and introduce advanced domains progressively.

### PLAN 1 – NEXORA LAUNCH
FOUNDATION STEM LAB

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

### PLAN 2 – NEXORA ORBIT
ADVANCED INNOVATION LAB

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- Design Thinking & Maker Education

Build • Prototype • Experiment

### PLAN 3 – NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

DOMAINS COVERED (8)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Connectivity
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data & Analytics
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

### PLAN 4 – AERONOVA
AEROSPACE INNOVATION CENTRE

DOMAINS COVERED (11)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Smart Systems
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data Science & Analytics
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

Engineer • Explore • Lead

## CLASS 8 LEARNING OUTCOMES

- Apply advanced logical thinking and problem-solving.
- Write efficient code and build real-world applications.
- Design and build electronic systems with sensors.
- Build IoT solutions and analyze real-time data.
- Use AI/ML concepts to create smart solutions.
- Design 3D models and prototypes for real-world use.
- Understand drone technology and aerospace fundamentals.
- Work in teams to ideate, build, test and present innovations.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

**TERM 1** (Months 1-3)
Theme: Tech Explorers

- Advanced Algorithms & Flowcharts
- Python Basics – Data Types, I/O, Operators
- Digital Electronics – Logic Circuits
- Introduction to Sensors & Actuators
- Simple Robotics Mechanisms
- Design Thinking Process
- Team Building Activities

**TERM 2** (Months 4-6)
Theme: Connect & Build

- Python – Control Flow, Functions & Modules
- Microcontrollers – Arduino Programming
- Interfacing Sensors, LEDs, LCD, Keypad
- Introduction to IoT (Concepts & Protocols)
- 3D Design Basics (TinkerCAD)
- Mini Projects & Prototyping
- Problem Solving Challenges

**TERM 3** (Months 7-9)
Theme: Smart Solutions

- Python – OOP Concepts
- Data Handling with Pandas (Basics)
- IoT – Data Collection & Cloud Basics
- AI/ML Introduction – Supervised Learning
- Robotics – Automation with Sensors
- 3D Printing Basics
- Group Project Work

**TERM 4** (Months 10-12)
Theme: Innovate & Impact

- AI/ML – Model Training (Simple)
- IoT Applications – Smart Systems
- Data Visualization (Matplotlib/Charts)
- Drone Basics – Components & Flight Principles
- Aerospace & Space Exploration
- Capstone Project & Exhibition
- Reflection & Presentation

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 8 (BY PLAN)

**PLAN 1 LAUNCH**


Line Following Robot with Speed Control


Electronic Safe (Digital Lock System)


Automatic Garden Light


Smart Desk Organizer with LED Indicators

**PLAN 2 ORBIT**


IoT Based Air Quality Monitoring System


Smart Irrigation System (IoT)


Bluetooth Controlled Robotic Arm


3D Printed Phone Stand with Logo

**PLAN 3 UNIVERSE**


AI Face Mask Detection System


Spam Email Detection Model (ML)


Smart Home Dashboard with Analytics


AI Chatbot for School Queries

**PLAN 4 AERONOVA**


FPV Drone – Build & Fly


Water Rocket with Altitude Logger


RC Plane – Design & Aerodynamics


Astronomy Telescope Automation

## SKILLS DEVELOPED

- Logical Thinking
- Problem Solving
- Programming
- Electronics & IoT
- Robotics
- Data Handling
- AI & ML Basics
- Communication

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Assignments
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer Appreciation

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Electronic Exploration Kit
- IoT Starter Kit
- 3D Design & Printing Kit
- AI & Mini Kit
- Drone Education Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Project Based Learning → Activity Driven Lessons | Hands-on Exploration | Inquiry Based Learning | Real World Connection | Reflect & Improve

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

"Small ideas today, Big innovations tomorrow."

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 9 – SHORT SYLLABUS
**DISCOVER • EXPLORE • CREATE**

CURRICULUM FRAMEWORK CLASS 9 | DURATION 36 MONTHS

## PLAN PROGRESSION

A structured 4-plan learning path to master concepts, build skills and explore advanced domains progressively.

### PLAN 1 – NEXORA LAUNCH
**FOUNDATION STEM LAB**

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

### PLAN 2 – NEXORA ORBIT
**ADVANCED INNOVATION LAB**

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- Design Thinking & Maker Education

Build • Prototype • Experiment

### PLAN 3 – NEXORA UNIVERSE
**FUTURE TECHNOLOGY LAB**

DOMAINS COVERED (8)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Connectivity
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data & Analytics
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

### PLAN 4 – AERONOVA
**AEROSPACE INNOVATION CENTRE**

DOMAINS COVERED (11)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Smart Systems
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data Science & Analytics
- Drone Technology
- Aerospace Engineering
- Astrooomy & Space Science

Engineer • Explore • Lead

## CLASS 9 LEARNING OUTCOMES

- Strengthen programming skills and apply data structures.
- Design and build automation and IoT solutions.
- Work with sensors, microcontrollers and real-time data.
- Apply AI/ML concepts to build intelligent systems.
- Understand drone technology, aerodynamics and flight control.
- Explore space science, satellites and space missions.
- Develop prototypes, test, iterate and present innovative solutions.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

### TERM 1 (Months 1-3)
Theme: Code & Build

- Python Programming – Advanced Topics
- Data Structures (Lists, Tuples, Dictionaries)
- Digital Electronics – Logic & Circuits
- Introduction to Microcontrollers (Arduino)
- Robotics Kinematics Basics
- Design Thinking Process
- Mini Project & Team Activities

### TERM 2 (Months 4-6)
Theme: Connect & Automate

- Data Structures & Algorithms (Basics)
- Web Technologies – HTML, CSS, JavaScript Basics
- Microcontrollers – Sensors & Actuators
- IoT Fundamentals – Protocols & Cloud
- 3D Design (TinkerCAD) & 3D Printing Basics
- Mini Projects & Prototyping
- Problem Solving Challenges

### TERM 3 (Months 7-9)
Theme: Analyze & Innovate

- Object Oriented Programming (Concepts)
- Databases – SQL Basics
- AI/ML Fundamentals – Supervised Learning
- Data Collection & Visualization
- Robotics – Sensors Integration
- IoT Data Analytics
- Group Project Work

### TERM 4 (Months 10-12)
Theme: Advance & Impact

- AI/ML Model Building (Intermediate)
- Computer Vision Basics
- Drone Technology – Components & Control
- Aerospace Basics – Aerodynamics
- Satellite Communication Fundamentals
- Capstone Project & Exhibition
- Reflection & Presentation

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 9 (BY PLAN & DOMAIN)

| PLAN 1 LAUNCH | PLAN 2 ORBIT | PLAN 3 UNIVERSE | PLAN 4 AERONOVA |
|---|---|---|---|
| Line Following Robot (Robotics) | IoT Based Energy Monitor (IoT) | AI Image Classifier (AI) | FPV Drone with Autonomous Mode (Drone) |
| Digital Stopwatch (Electronics) | Bluetooth Controlled Car (Robotics) | Smart Irrigation System with Analytics (IoT) | Water Rocket with Payload (Aerospace) |
| Python Quiz Game (Coding) | 3D Printed Phone Stand (3D Design) | Robotic Arm with Object Sorting (Robotics) | Model Rocket with Stability Analysis (Aerospace) |
| Smart Dustbin with Sensor (Design Thinking) | Weather Monitoring Station (IoT) | Sales Data Dashboard (Data Analytics) | Satellite Model with Communication Link (Space) |

## SKILLS DEVELOPED

- Programming & Algorithms
- Problem Solving
- Electronics & IoT
- AI & Data Handling
- Robotics & Automation
- Design & Prototyping
- Analytical Thinking
- Teamwork & Communication

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Assignments
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer & Self Assessment

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Arduino Uno Kit
- IoT Starter Kit
- 3D Design & Printing Kit
- AI & Data Kit
- Drone Education Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Project Based Learning → Activity Driven Lessons

Hands-on Makerspace | Inquiry Based Exploration | Real World Connection | Reflect & Improve

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

> "Small ideas today, Big innovations tomorrow."

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 10 – SHORT SYLLABUS
**DISCOVER • EXPLORE • CREATE**

CURRICULUM FRAMEWORK CLASS 10 | DURATION 36 MONTHS

## PLAN PROGRESSION

A structured 4-plan learning path to build expertise, strengthen skills and solve real-world problems through advanced domains.

### PLAN 1 – NEXORA LAUNCH
**FOUNDATION STEM LAB**

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

### PLAN 2 – NEXORA ORBIT
**ADVANCED INNOVATION LAB**

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- Design Thinking & Maker Education

Build • Prototype • Experiment

### PLAN 3 – NEXORA UNIVERSE
**FUTURE TECHNOLOGY LAB**

DOMAINS COVERED (8)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Connectivity
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data & Analytics
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

### PLAN 4 – AERONOVA
**AEROSPACE INNOVATION CENTRE**

DOMAINS COVERED (11)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Smart Systems
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data Science & Analytics
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

Engineer • Explore • Lead

## CLASS 10 LEARNING OUTCOMES

- Strengthen advanced coding skills and problem-solving.
- Design and build smart systems using IoT and embedded technologies.
- Apply AI/ML models to solve real-life challenges.
- Understand aerodynamics, drone systems and aerospace applications.
- Work on interdisciplinary projects using advanced tools and data.
- Develop innovation mindset and entrepreneur skills.
- Prepare for higher education and career opportunities.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

### TERM 1 (Months 1-3)
Theme: Code & Control

- Advanced Python Programming
- Data Structures & Algorithms
- Digital Electronics – Combinational Circuits
- Microcontrollers (Arduino) – I/O & Timers
- Robotics Kinematics & Mechanisms
- Design Thinking Process
- Team Building Activities

### TERM 2 (Months 4-6)
Theme: Connect & Sense

- C/C++ Programming Basics
- Web Technologies – HTML, CSS, JavaScript
- Sensors & Actuators
- IoT Protocols (MQTT/HTTP)
- Embedded Systems Programming
- 3D Design Basics (CAD)
- Mini Projects & Prototyping

### TERM 3 (Months 7-9)
Theme: Analyze & Automate

- Object Oriented Programming (Python/Java)
- Database Management (SQL)
- Data Collection & Visualization
- AI/ML Basics – Supervised Learning
- Robotics – Sensors Integration
- Capstone Project Planning

### TERM 4 (Months 10-12)
Theme: Innovate & Launch

- AI/ML Model Building (Intermediate)
- Computer Vision Basics
- IoT Applications & Edge Computing
- Drone Tech – Components & Flight Control
- Aerospace Basics – Aerodynamics
- Capstone Project Development & Presentation
- Reflection & Future Roadmap

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 30 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 10 (BY PLAN & DOMAIN)

### PLAN 1 LAUNCH


Robotics Fundamentals
Line Follower Robot


Coding & Computational Thinking
Python Calculator


Electronics Basics
Digital Voltmeter


Design Thinking & Maker Education
Smart Night Lamp

### PLAN 2 ORBIT


IoT
Smart Home Automation


Robotics
Bluetooth Controlled Robot Car


3D Design & Printing
Customized Keychain


Electronics
Weather Station with Sensors


Coding
Personal Portfolio Website

### PLAN 3 UNIVERSE


AI
Handwritten Digit Recognizer


Data & Analytics
Sales Data Analysis Dashboard


IoT
Smart Irrigation System


Robotics & Automation
Pick & Place Robotic Arm


Innovation & Entrepreneurship
Prototype of a Startup Idea

### PLAN 4 AERONOVA


Drone Technology
FPV Drone with Obstacle Avoidance


Aerospace Engineering
RC Plane – Aerodynamics Study


Astronomy & Space Science
Satellite Communication Model


IoT & Smart Systems
Real-time Air Quality Monitor


3D Design & Printing
Rocket Body Prototype


AI & Data Science
Predictive Maintenance Model

## SKILLS DEVELOPED

- Advanced Programming
- Problem Solving
- Robotics & Automation
- Electronics & IoT
- AI & ML Basics
- Data Analysis
- Design Thinking
- Communication

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Assignments
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer & Self Assessment

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Arduino Uno Kit
- IoT Starter Kit
- AI & Data Kit
- 3D Design & Printing Kit
- Drone Education Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Project Based Learning → Activity Driven Lessons → Hands-on Exploration | Inquiry Based Learning | Real World Connection | Reflect & Improve

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

> "Small ideas today, Big innovations tomorrow."

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 11 – SHORT SYLLABUS
DISCOVER • EXPLORE • CREATE

CURRICULUM FRAMEWORK CLASS 11 | DURATION 36 MONTHS

## PLAN PROGRESSION

A structured 4-plan learning path to master advanced concepts, build expertise and create real-world impact across technologies.

### PLAN 1 – NEXORA LAUNCH
FOUNDATION STEM LAB

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

### PLAN 2 – NEXORA ORBIT
ADVANCED INNOVATION LAB

DOMAINS COVERED (6)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Internet of Things (IoT)
- 3D Design & Printing
- Design Thinking & Maker Education

Build • Prototype • Experiment

### PLAN 3 – NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

DOMAINS COVERED (8)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Connectivity
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data & Analytics
- Innovation & Entrepreneurship

Innovate • Solve • Create Impact

### PLAN 4 – AERONOVA
AEROSPACE INNOVATION CENTRE

DOMAINS COVERED (11)

- Robotics & Automation
- Coding & Computational Thinking
- Electronics & Sensors
- IoT & Smart Systems
- 3D Design & Printing
- Artificial Intelligence (AI)
- Data Science & Analytics
- Drone Technology
- Aerospace Engineering
- Astronomy & Space Science

Engineer • Explore • Lead

## CLASS 11 LEARNING OUTCOMES

- Apply advanced programming, electronics and AI concepts.
- Design and develop smart automated systems.
- Work with sensors, IoT devices and real-time data.
- Build AI/ML models for real-life problem solving.
- Understand aerospace systems, drones and space technology.
- Design prototypes and carry out experiments.
- Develop innovation mindset and leadership skills.
- Prepare for higher education and tech careers.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

### TERM 1 (Months 1-3)
Theme: Build Strong

- Advanced C++ / Python Programming
- Digital Electronics – Logic Design & Circuits
- Microcontrollers (Arduino/ ESP32) – Advanced
- Engineering Drawing Basics (2D/3D)
- Robotics Mechanisms & Control Systems
- Team Challenge Project

### TERM 2 (Months 4-6)
Theme: Integrate & Connect

- Data Structures & Algorithms
- Web Technologies – Full Stack (HTML, CSS, JS, DB)
- IoT Protocols & Cloud Integration (MQTT, HTTP)
- Sensors & Actuators Interfacing
- 3D Modeling (Fusion 360 / SolidWorks)
- Mini Project & Prototyping

### TERM 3 (Months 7-9)
Theme: Automate & Analyze

- AI/ML Fundamentals – Supervised Learning
- Computer Vision Basics
- Data Analytics & Visualization (Python)
- Robotics – Autonomous Navigation
- Embedded Systems Programming
- Capstone Project – Stage 1

### TERM 4 (Months 10-12)
Theme: Innovate & Impact

- AI/ML Model Deployment (Edge/Cloud)
- IoT Applications – Smart City / Industry
- Drone Technology – Basics & Flight Control
- Aerospace Fundamentals – Aerodynamics
- Innovation & Entrepreneurship
- Capstone Project – Final Presentation

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 40 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 11 (BY PLAN & DOMAIN)

| | PLAN 1 LAUNCH | PLAN 2 ORBIT | PLAN 3 UNIVERSE | PLAN 4 AERONOVA |
|---|---|---|---|---|
| Fundamentals | Line Follower Robot | IoT Based Smart Energy Meter | AI Face Recognition Attendance System | FPV Drone with Obstacle Avoidance |
| Computational Thinking | C++ Based Calculator | Weather Monitoring Dashboard (Web) | AI Based Object Detection | RC Plane – Wing Design & Analysis |
| Electronics Basics | Digital Clock using 7 Segment Display | 3D Printed Robotic Gripper | Smart Home Automation System (IoT) | CanSat / Stratospheric Payload |
| Design Thinking & Maker Education | Ergonomic Phone Stand | Automated Plant Watering System | Predictive Analysis Dashboard | Satellite Communication Model |
| | | Bluetooth Controlled Robotic Car | Autonomous Line Following Robot | Airfoil Design & Wind Tunnel Experiment |
| | | CAD Model of Mechanical Part | AI Chatbot for Campus Helpdesk | Moon Habitat Design Concept |

## SKILLS DEVELOPED

- Advanced Programming
- AI & ML Basics
- IoT & Embedded Systems
- Robotics & Automation
- Data Analysis
- Problem Solving
- Design Thinking
- Communication

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Assignments
- Projects & Presentations
- Reflection & Sharing
- Portfolio (Work Display)
- Peer & Self Assessment

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Junior Robotics Kit
- Arduino Uno / ESP32 Kit
- IoT Starter Kit
- 3D Printing & Design Kit
- AI & ML Starter Kit
- Drone Education Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity

## TEACHING APPROACH

Project Based Learning → Activity Driven Lessons → Inquiry-based Exploring | Hands-on Exploration | Real World Connection | Reflect & Improve

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

> Small ideas today,
> Big innovations tomorrow.

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# CLASS 12 – SHORT SYLLABUS
**DISCOVER • EXPLORE • CREATE**

CURRICULUM FRAMEWORK CLASS 12 | DURATION 36 MONTHS

## PLAN PROGRESSION

A structured 4-plan learning path to master advanced concepts, solve real-world problems and create impactful innovations.

### PLAN 1 – NEXORA LAUNCH
**FOUNDATION STEM LAB**

DOMAINS COVERED (4)

- Robotics Fundamentals
- Coding & Computational Thinking
- Electronics Basics
- Design Thinking & Maker Education

Explore • Learn • Create

### PLAN 2 – NEXORA ORBIT
**ADVANCED INNOVATION LAB**

DOMAINS COVERED (6)

- Robotics & Automation
- Programming & Data Structures
- Electronics & Embedded Systems
- Internet of Things (IoT)
- 3D Design & Printing
- Engineering Design Process

Build • Prototype • Experiment

### PLAN 3 – NEXORA UNIVERSE
**FUTURE TECHNOLOGY LAB**

DOMAINS COVERED (8)

- AI & Machine Learning
- IoT & Edge Computing
- Data Science & Analytics
- Robotics & Automation
- Computer Vision & NLP
- Cybersecurity Basics
- Innovation & Entrepreneurship
- Advanced Electronics

Innovate • Solve • Create Impact

### PLAN 4 – AERONOVA
**AEROSPACE INNOVATION CENTRE**

DOMAINS COVERED (11)

- Aerospace Engineering
- Drone Technology
- Avionics & Flight Systems
- Space Science & Astronomy
- Satellite Technology
- AI for Aerospace & Autonomy
- Control Systems & Simulation
- Advanced Robotics
- Additive Mfg. (Advanced)
- Research & Innovation
- Systems Engineering

Engineer • Explore • Lead

## CLASS 12 LEARNING OUTCOMES

- Apply advanced STEM concepts to solve complex real-world challenges.
- Design, build and optimize innovative systems and technologies.
- Work with AI/ML, IoT, Robotics, Aerospace and Data Analytics.
- Plan and execute research projects with measurable impact.
- Develop entrepreneurship mindset and leadership skills.
- Prepare for higher education, startups and future careers.

## TERM-WISE SYLLABUS (4 TERMS PER YEAR)

### TERM 1 (Months 1-3)
**Theme: Build Strong**

- Advanced C++ / Python Programming
- Data Structures & Algorithms
- Digital Electronics – Advanced Circuits
- Microcontrollers (Arduino/ ESP32/STM32)
- Engineering Mathematics for STEM
- Mini Project – Concept Validation
- Team Challenge Project

### TERM 2 (Months 4-6)
**Theme: Integrate & Analyze**

- OOPs & Advanced Programming
- Web Technologies – Full Stack (MERN/Python)
- IoT Protocols (MQTT, HTTP) & Cloud Integration
- Sensors & Actuators – Advanced
- Data Analytics & Visualization (Python/Power BI)
- 3D Modeling (Fusion 360/ SolidWorks)
- Prototype Development – Stage 1

### TERM 3 (Months 7-9)
**Theme: Innovate & Optimize**

- AI/ML Algorithms & Model Training
- Computer Vision & NLP Basics
- Robotics Kinematics & Control Systems
- Control Systems & PID Tuning
- Edge Computing & Embedded AI
- Research Methodology & Documentation
- Prototype Development – Stage 2

### TERM 4 (Months 10-12)
**Theme: Impact & Launch**

- AI/ML Deployment (Edge/ Cloud)
- Autonomous Systems (Robotics/Drone/IoT)
- Aerospace Systems Fundamentals
- Project Management & Entrepreneurship
- Capstone Project – Final Build & Testing
- Product Pitch & Exhibition
- Reflection & Future Roadmap

### WEEKLY LEARNING STRUCTURE (1 SESSION PER WEEK)

Engage 10 min → Explore 20 min → Hands-on Activity 40 min → Share & Reflect 15 min → Wrap-up & Fun Fact 5 min

## SAMPLE PROJECTS FOR CLASS 12 (BY PLAN & DOMAIN)

| PLAN 1 LAUNCH | PLAN 2 ORBIT | PLAN 3 UNIVERSE | PLAN 4 AERONOVA |
|---|---|---|---|
| Line Following Robot | IoT Based Home Automation | AI Based Image Classifier | Autonomous Drone with Object Tracking |
| Smart Traffic Signal System | Weather Monitoring System with IoT | Predictive Analysis Dashboard | RC Plane – Flight Control System |
| Digital Voltmeter & Ammeter | 3D Printed Robotic Arm | Autonomous Line Following Robot | Satellite Model with Telemetry System |
| Calculator using C++ | Smart Energy Meter with Cloud Dashboard | AI Chatbot for College Helpdesk | Aircraft Wing Design & Stress Analysis |
| IR Based Security Alarm | Bluetooth Controlled AGV Robot | Smart Parking System using IoT | Rover for Planetary Exploration |

## SKILLS DEVELOPED

- Advanced Programming
- AI & ML Applications
- Robotics & Automation
- Aerospace Fundamentals
- IoT & Edge Computing
- Data Analytics
- Problem Solving
- Communication & Leadership

## ASSESSMENT COMPONENTS

- Class Participation
- Hands-on Activities
- Quizzes & Assignments
- Projects & Presentations
- Portfolio (Work Display)
- Peer & Self Assessment
- Capstone Project Evaluation
- Reflection & Sharing

## TOOLS & KITS (AGE APPROPRIATE)

- Nexora Advanced Robotics Kit
- Arduino/ESP32 Development Kit
- IoT & Sensor Kit
- AI/ML Starter Kit
- 3D Printing & Design Kit
- Aerospace & Drone Kit




## 21ST CENTURY SKILLS

Critical Thinking | Creativity & Innovation | Collaboration | Communication | Curiosity | Leadership & Entrepreneurship

## TEACHING APPROACH

Project Based Learning → Inquiry Driven Exploration

Real World Problem Solving | Design Thinking Process | Industry Connect & Mentorship | Reflect & Improve

- Happy Learners
- Confident Explorers
- Creative Thinkers
- Problem Solvers
- Responsible Citizens
- Future Innovators

> "Innovate today, Lead tomorrow."

# NEXORA STEM & AERONOVA

## INNOVATION ECOSYSTEM

**TRANSFORMING CLASSROOMS INTO INNOVATION HUBS**

EXPLORE · BUILD · INNOVATE · IMPACT

**MINIMUM STUDENTS REQUIREMENT**
**500+ STUDENTS FOR EACH PLAN**

## NEXORA LAUNCH
FOUNDATION STEM LAB

₹ 150 PER STUDENT PER MONTH
(EXCLUSIVE OF GST)

36 MONTHS COMMITMENT

### WHAT SCHOOL WILL GET
- Complete Foundation Curriculum (4 Domains)
- Robotics Starter Kits
- Electronics Starter Kits
- Coding Curriculum
- Teacher Orientation (20 Hours)
- Student Workbooks
- Assessment Framework
- Monthly Projects
- Annual STEM Exhibition Guide
- Digital Resource Access
- Nexora Explorer Certification

MIN. STUDENTS 500+

## NEXORA ORBIT
ADVANCED INNOVATION LAB

₹ 250 PER STUDENT PER MONTH
(EXCLUSIVE OF GST)

36 MONTHS COMMITMENT

### WHAT SCHOOL WILL GET
- Everything in Launch Plan
- 6 Domain Curriculum
- Arduino & IoT Kits
- 3D Printing Curriculum
- CAD Software Access
- Teacher Upskilling (30 Hours)
- Advanced Student Projects
- Inter-school Competitions
- Portfolio Development
- Nexora Innovator Certification

MIN. STUDENTS 500+

## NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB

₹ 350 PER STUDENT PER MONTH
(EXCLUSIVE OF GST)

36 MONTHS COMMITMENT

### WHAT SCHOOL WILL GET
- Everything in Orbit Plan
- AI Curriculum
- Innovation & Entrepreneurship
- Raspberry Pi & AI Kits
- Computer Vision Activities
- Product Design Framework
- Hackathon Support
- National Competition Preparation
- AI Portfolio
- Research Projects
- Digital LMS (Full Access)
- Nexora Future Technologist Certification

MIN. STUDENTS 500+

## AERONOVA
AEROSPACE INNOVATION CENTRE

₹ 450 PER STUDENT PER MONTH
(EXCLUSIVE OF GST)

36 MONTHS COMMITMENT

### WHAT SCHOOL WILL GET
- Everything in Universe Plan
- Aerospace Curriculum
- Drone Curriculum
- Rocketry Curriculum
- Telescope & Astronomy Program
- Professional Drone Kits
- Flight Simulator Access
- Aerospace Design Projects
- Capstone Researtbn Projects
- Innovation Incubation Support
- Specialized Teacher Training (50 Hours)
- Aerospace Innovation Showcase
- Nexora Aerospace Professional Certification

MIN. STUDENTS 500+

## PAYMENT TERMS & BENEFITS

**MONTHLY PAYMENT**
Standard monthly billing
36 months commitment

Benefits
- Flexible payment schedule
- Continuous academic & technical support

**6 MONTHS ADVANCE PAYMENT**
Pay 6 months together

Benefits
- 50% GST Remission
- Priority Technical Support
- Free Teacher Refresher Training (1 Session)
- Complimentary STEM Consumables
- Priority Project Review

**ANNUAL ADVANCE PAYMENT**
Pay 12 months together

Benefits
- Pay 12 Months & Got 1 Month FREE
- Annual STEM Competition Registration
- Complimentary Lab Health Check
- Free Advanced Teacher Workshop
- Priority Curriculum Updates
- Annual Innovation Review

**STRATEGIC PARTNERSHIP (5+ YEARS)**
Long-term partnership for greater impact

Benefits
- 25% Discount on First Year Fees
- Free Lab Branding Package
- Innovation Partner School Recognition
- Dedicated Relationship Manager
- Priority Access to New Technologies
- Complimentary Innovation Summit Invitation
- Annual Curriculum Enhancement

### EARLY ADOPTER BENEFITS
(Limited Period)
- Free STEM Lab Launch Event
- Principal Orientation Session
- Parent Awareness Workshop
- School Branding Kit
- Social Media Promotion
- Press Release Support
- STEM Exhibition Launch Support

### REFERRAL REWARDS
For every successful referral, your school gets
- Additional Teacher Training
- STEM Consumables Credit
- Competition Registration Support
- Academic Resource Upgrade
- Recognition Certificate

### ALL PRICES ARE EXCLUSIVE OF GST
- Minimum Students: 500+
- Minimum Commitment: 36 Months
- Terms & Conditions Apply

### VALUE PROTECTION
- No curriculum upgrade charges during the agreement period.
- Free software & LMS updates throughout subscription.
- Annual preventive maintenance and technical review.
- Replacement support for manufacturing defects as per warranty terms.

### EVERY SCHOOL WILL RECEIVE
- NEP 2020 & NCF 2023 Aligned Curriculum
- Ready-to-Teach Lesson Plans
- Grade-wise Curriculum (Classes 1-12)
- Digital Learning Resources
- Assessment Framework
- 120+ Guided Projects
- Student Workbooks
- Progress Reports
- Teacher Handbook
- Competition Support
- STEM Exhibition Guide
- Digital Certificates
- Parent Engagement Resources
- Project Documentation
- STEM Activity Calendar
- Portfolio Framework
- Dedicated Academic Coordinator
- LMS & Digital Access

### PREMIUM SCHOOL RECOGNITION
- ★ NEXORA INNOVATION SCHOOL
- ★★ NEXORA CENTRE OF EXCELLENCE
- ★★★ NEXORA FUTURE READY SCHOOL
- ★★★ NEXORA PLATINUM INNOVATION PARTNER
- ★★★ NEXORA AEROSPACE EXCELLENCE SCHOOL (For AERONOVA Partners)

### STUDENT BENEFITS
- Nexora Certification Framework
- Digital Portfolio
- Innovation Challenges
- Robotics Competitions
- AI Challenges
- Drone Challenges (AERONOVA)
- Aerospace Projects (AERONOVA)
- Capstone Projects
- Leadership Development
- Career Awareness Sessions
- Entrepreneurship Exposure

### TEACHER BENEFITS
- Initial Teacher Training
- Continuous Professional Development
- Refresher Training Programs
- Teaching Resources
- Lesson Plans
- Classroom Activity Guides
- Mentor Community Access
- Certification Support

### SUPPORT & ASSURANCE
- Installation Support
- Remote Technical Assistance
- Scheduled Preventive Maintenance
- Software & Curriculum Updates
- Equipment Warranty (As Per Agreement)
- Dedicated Customer Success Manager

NEXORA is a brand of SCHOOL OF SKILL DEVELOPMENT

*"Together, let's inspire curiosity, build skills, and shape the innovators of tomorrow."*

HANDS-ON LEARNING · REAL-WORLD APPLICATION · FUTURE READY SKILLS · IMPACT DRIVEN

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

# PROJECTS BANK – 120 PROJECTS
EXPLORE • BUILD • INNOVATE • IMPACT

CURRICULUM FRAMEWORK CLASSES 1 – 12 | DURATION 36 MONTHS

## PLAN 1 – NEXORA LAUNCH
FOUNDATION STEM LAB
Domains Covered: 4
120 PROJECTS (30 Projects per Class)

TOP PROJECTS (Sample – 30)

| # | PROJECT NAME | DOMAIN | CLASS | DIFFICULTY |
|---|---|---|---|---|
| 1 | LED Blinking Circuit | Electronics | 1 – 12 | |
| 2 | Paper Cup Telephone | Design Thinking | 1 – 6 | |
| 3 | DIY Windmill | Design Thinking | 2 – 8 | |
| 4 | Simple Water Alarm | Electronics | 3 – 8 | |
| 5 | Line Following Robot | Robotics | 4 – 12 | |
| 6 | Traffic Light Model | Electronics | 4 – 10 | |
| 7 | Robotic Arm (Basic) | Robotics | 5 – 12 | |
| 8 | Obstacle Avoider Robot | Robotics | 5 – 12 | |
| 9 | Touch Sensor Lamp | Electronics | 5 – 10 | |
| 10 | Smart Dustbin (IR) | Electronics | 6 – 12 | |
| ... | ... | ... | ... | ... |
| 21 | Mini Safe Box | Electronics | 9 – 12 | |
| 22 | Home Security Alarm | Electronics | 9 – 12 | |
| 23 | Bluetooth Car (Basic) | Robotics | 9 – 12 | |
| 24 | Plant Watering Alarm | Electronics | 9 – 12 | |
| 25 | Automatic Night Lamp | Electronics | 10 – 12 | |
| 26 | Line Maze Solver (Basic) | Robotics | 10 – 12 | |
| 27 | Heartbeat Sensor (Basic) | Electronics | 11 – 12 | |
| 28 | Voice Controlled Switch | Electronics | 11 – 12 | |
| 29 | Password Based Lock | Electronics | 11 – 12 | |
| 30 | Smart Helmet (Basic) | Electronics | 12 | |

Focus: Explore • Learn • Create

## PLAN 2 – NEXORA ORBIT
ADVANCED INNOVATION LAB
Domains Covered: 6
120 PROJECTS (30 Projects per Class)

TOP PROJECTS (Sample – 30)

| # | PROJECT NAME | DOMAIN | CLASS | DIFFICULTY |
|---|---|---|---|---|
| 1 | IoT Based Smart Light | IoT | 6 – 12 | |
| 2 | Temperature Monitor (IoT) | IoT | 6 – 12 | |
| 3 | IR Remote Controlled Car | Robotics | 6 – 12 | |
| 4 | Bluetooth Robot | Robotics | 6 – 12 | |
| 5 | Smart Irrigation System | IoT | 6 – 12 | |
| 6 | RFID Attendance System | Electronics | 7 – 12 | |
| 7 | Gas Leakage Detector | Electronics | 7 – 12 | |
| 8 | 3D Printed Keychain | 3D Printing | 6 – 12 | |
| 9 | TinkerCAD Designer Toy | 3D Design | 6 – 10 | |
| 10 | Weather Station (IoT) | IoT | 7 – 12 | |
| ... | ... | ... | ... | ... |
| 21 | IoT Home Automation | IoT | 9 – 12 | |
| 22 | Smart Energy Meter | IoT | 9 – 12 | |
| 23 | Gesture Controlled Car | Robotics | 9 – 12 | |
| 24 | 3D Printed Robotic Gripper | Robotics | 9 – 12 | |
| 25 | Soil Moisture Monitor | IoT | 10 – 12 | |
| 26 | App Controlled Robot | Robotics | 10 – 12 | |
| 27 | Face Recognition Door Lock | Electronics | 11 – 12 | |
| 28 | Smart Greenhouse | IoT | 11 – 12 | |
| 29 | Multi-sensor Data Logger | IoT | 11 – 12 | |
| 30 | Wearable Fitness Band | Electronics | 12 | |

Focus: Build • Prototype • Experiment

## PLAN 3 – NEXORA UNIVERSE
FUTURE TECHNOLOGY LAB
Domains Covered: 8
120 PROJECTS (30 Projects per Class)

TOP PROJECTS (Sample – 30)

| # | PROJECT NAME | DOMAIN | CLASS | DIFFICULTY |
|---|---|---|---|---|
| 1 | AI Chatbot (Rule Based) | AI | 7 – 12 | |
| 2 | Image Classifier (Teachable ML) | AI/ML | 7 – 12 | |
| 3 | Smart Waste Bin (AI + IoT) | AI + IoT | 7 – 12 | |
| 4 | Voice Assistant (Python) | AI | 7 – 12 | |
| 5 | AI Hand Gesture Control | AI/ML | 8 – 12 | |
| 6 | Stock Price Predictor (ML) | AI/ML | 8 – 12 | |
| 7 | Smart Mirror with AI | AI + IoT | 8 – 12 | |
| 8 | ChatGPT Powered Q&A Bot | AI | 9 – 12 | |
| 9 | Object Detection (YOLO) | AI/ML | 9 – 12 | |
| 10 | Smart Traffic Management | AI + IoT | 9 – 12 | |
| ... | ... | ... | ... | ... |
| 21 | AI Based Attendance System | AI/ML | 10 – 12 | |
| 22 | Image Caption Generator | AI/ML | 10 – 12 | |
| 23 | Predictive Maintenance Model | AI/ML | 10 – 12 | |
| 24 | AI Voice Emotion Detector | AI/ML | 11 – 12 | |
| 25 | Autonomous Line Follower | AI + Robotics | 11 – 12 | |
| 26 | AI Based Health Monitor | AI + IoT | 11 – 12 | |
| 27 | Computer Vision Inspection | AI/ML | 12 | |
| 28 | AI Resume Screener | AI/ML | 12 | |
| 29 | Smart City Dashboard | AI + IoT | 12 | |
| 30 | AI Personal Tutor | AI/ML | 12 | |

Focus: Innovate • Solve • Create Impact

## PLAN 4 – AERONOVA
AEROSPACE INNOVATION CENTRE
Domains Covered: 11
120 PROJECTS (30 Projects per Class)

TOP PROJECTS (Sample – 30)

| # | PROJECT NAME | DOMAIN | CLASS | DIFFICULTY |
|---|---|---|---|---|
| 1 | Paper Airplane (Aerodynamics) | Aerospace | 6 – 10 | |
| 2 | Water Rocket | Aerospace | 6 – 10 | |
| 3 | Balsa Glider | Aerospace | 6 – 10 | |
| 4 | Straw Rocket Launcher | Aerospace | 7 – 10 | |
| 5 | Parachute Drop Test | Aerospace | 7 – 10 | |
| 6 | Drone Basics (Simulator) | Drone Tech | 8 – 12 | |
| 7 | Quadcopter Assembly | Drone Tech | 8 – 12 | |
| 8 | FPV Drone (Basic) | Drone Tech | 9 – 12 | |
| 9 | RC Plane – Build & Fly | Aerospace | 9 – 12 | |
| 10 | Wind Tunnel Model | Aerospace | 9 – 12 | |
| ... | ... | ... | ... | ... |
| 21 | Payload Delivery Drone | Drone Tech | 10 – 12 | |
| 22 | Fixed Wing UAV | Drone Tech | 10 – 12 | |
| 23 | Satellite Model with TLE | Space Science | 10 – 12 | |
| 24 | Rocket with Staging | Aerospace | 11 – 12 | |
| 25 | CanSat (Weather Satellite) | Space Science | 11 – 12 | |
| 26 | Mission Control Dashboard | Aerospace | 11 – 12 | |
| 27 | Autonomous Drone (AI) | Drone Tech + AI | 11 – 12 | |
| 28 | High Altitude Balloon Payload | Aerospace | 12 | |
| 29 | CubeSat Design (3U) | Space Science | 12 | |
| 30 | Space Habitat Design | Aerospace | 12 | |

Focus: Engineer • Explore • Lead

## DOMAINS COVERED (BY PLAN)

| DOMAINS COVERED (BY PLAN) | PLAN 1 LAUNCH | PLAN 2 ORBIT | PLAN 3 UNIVERSE | PLAN 4 AERONOVA |
|---|---|---|---|---|
| Robotics & Automation – Build robots, mechanisms and automation systems | ● | ● | ● | ● |
| Coding & Computational Thinking – Programming, logic and problem solving | ● | ● | ● | ● |
| Electronics & Sensors – Circuits, components, sensors and embedded systems | ● | ● | ● | ● |
| Design Thinking & Maker Education – Ideation, creativity, prototyping | | ● | ● | ● |
| Internet of Things (IoT) | | ● | ● | ● |
| 3D Design & Printing | | | ● | ● |
| Artificial Intelligence (AI/ML) | | | ● | ● |
| Data Science & Analytics | | | ● | ● |
| Drone Technology | | | | ● |
| Aerospace Engineering | | | | ● |
| Astronomy & Space Science | | | | ● |

## PROJECT DIFFERENCES BY PLAN

### PLAN 1 – LAUNCH
Foundation Level
- Basic concepts & simple builds
- Hands-on exploration
- Low cost materials
- Focus on curiosity & creativity
- Projects are guided step-by-step

### PLAN 2 – ORRIT
Intermediate Level
- Integration of multiple technologies
- IoT, 3D design, sensors & microcontrollers
- Real-life problem solving
- More autonomy in building
- Prototype based learning

### PLAN 3 – UNIVERSE
Advanced Level
- AI/ML, Data & Automation
- Complex system development
- Data-driven decision making
- Independent innovation
- Impact driven solutions

### PLAN 4 – AERONOVA
Expert Level
- Aerospace, Drone & Space Tech
- Engineering design cycle
- Advanced tools & simulations
- Real-world applications
- Research & future technologies

## DIFFICULTY LEVEL KEY

| Beginner | Intermediate | Advanced | Expert |
|---|---|---|---|
| Simple tools & concepts | Multi-step build with guidance | Complex concepts & integration | Research level & innovation |

## CLASS & AGE GUIDE

| Primary | Middle | Secondary | Senior Secondary |
|---|---|---|---|
| Class 1 – 5 | Class 6 – 8 | Class 9 – 10 | Class 11 – 12 |
| Age 6 – 10 yrs | Age 11 – 13 yrs | Age 14 – 16 yrs | Age 17 – 18 yrs |

## PROJECT FEATURES

Real-World Application | Hands-on Learning | 21st Century Skills | Cross Domain Integration | Innovation & Entrepreneurship | Portfolio & Competitions

Aligned with NEP 2020 & NCERT | Skill Based Learning | Inquiry Driven | Experiential Education | Future Ready Skills

**120 PROJECTS. 4 PLANS. ENDLESS POSSIBILITIES.**

# NEXORA STEM & AERONOVA
## INNOVATION ECOSYSTEM

**EXPLORE • BUILD • INNOVATE • IMPACT**

CURRICULUM FRAMEWORK
CLASSES 1 – 12

DURATION
36 MONTHS

## PARENT ENGAGEMENT – TOGETHER WE INSPIRE INNOVATORS

Nexora believes that engaged parents create empowered learners.
We build a strong home-school partnership to support every child's STEM journey.

### PARENT PORTAL ACCESS
Access student progress, project updates, attendance, assessments and certificates in real time.

### REGULAR COMMUNICATION
Monthly newsletters, class updates, and important announcements about activities and achievements.

### WORKSHOP & WEBINARS
Expert-led sessions for parents on STEM careers, technology trends, and ways to support learning at home.

### STEM AT HOME RESOURCES
Curated DIY activities, fun challenges and learning resources to explore together as a family.



### PROJECT SHOWCASE EVENTS
Parents are invited to exhibitions, demo days and innovation fairs to celebrate student creativity.

### PROGRESS REPORTS
Term-wise reports with strengths, improvement areas and personalized learning suggestions.

### PARENT-TEACHER CONNECT
Regular PTM, one-to-one interactions and feedback sessions to ensure holistic development.

### RECOGNITION & CELEBRATION
Celebrate student achievements through certificates, awards and special recognition programs.

### HOW PARENTS CAN MAKE AN IMPACT

- Encourage Curiosity & Asking Questions
- Celebrate Small Wins & Efforts
- Provide a Safe Space to Explore & Fail
- Connect STEM Learning to Real Life
- Support Project Work & Key Milestones
- Inspire Big Dreams & Future Readiness

> When parents and schools work together, children don't just learn – they thrive and lead the future.

## LEARNING OUTCOMES – FUTURE READY STUDENTS

Nexora STEM & AERONOVA curriculum ensures holistic development across knowledge, skills, mindset and real-world application.

### KNOWLEDGE
**What Students Learn**

- Strong foundation in STEM concepts
- Disciplinary knowledge aligned with NEP 2020
- Awareness of emerging technologies
- Real-world application of learning

### SKILLS
**What Students Do**

- Critical thinking & problem solving
- Coding, design & prototyping
- Collaboration & communication
- Data analysis & logical reasoning
- Hands-on building & making

### MINDSET
**How Students Think**

- Curiosity & inquisitiveness
- Growth mindset & resilience
- Creativity & innovation
- Confidence & adaptability
- Ethical & responsible technology use

### APPLICATION
**Where Students Apply**

- Solve real-world problems
- Design and develop innovative solutions
- Participate in competitions & challenges
- Create impact through STEM projects
- Build portfolio for future opportunities

### FUTURE READINESS
**Where Students Go**

- Career awareness across STEM fields
- Research & innovation capabilities
- Entrepreneurial thinking
- Prepared for higher education & global opportunities
- Lifelong learning attitude

### STUDENTS WILL BECOME

- Confident Problem Solvers
- Innovative Thinkers
- Skilled Technologists
- Responsible Leaders
- Global Citizens
- Future Ready

### MEASURABLE IMPACT

**Improved Academic Performance**
Concept clarity and application lead to better results.

**Stronger Practical Skills**
Hands-on projects build real skills that last a lifetime.

**Increased Confidence & Communication**
Students express ideas, present solutions and lead with confidence.

**Achievement in Competitions**
Participation in inter-school, national & international competitions.

**Better Career Readiness**
Build a strong foundation for top universities & future careers.

## TOGETHER, WE BUILD THE INNOVATORS OF TOMORROW

- STRONGER PARTNERSHIP
- HOLISTIC DEVELOPMENT
- REAL-WORLD LEARNING
- BRIGHTER FUTURES

NEXORA STEM & AERONOVA
EXPLORE • BUILD • INNOVATE • IMPACT

# NEXORA STEM & AERONOVA

EMPOWERING YOUNG MINDS TO
EXPLORE, INNOVATE & EXCEL

CLASSES 1 TO 12

NEP 2020 & NCERT ALIGNED

# THANK YOU!

Thank you for partnering with Nexora STEM & AERONOVA
to empower young minds with future-ready skills.

Together, we are building a generation of innovators,
problem solvers and changemakers who will
create a smarter, sustainable and better tomorrow.

**INSPIRE** Curiosity | **INNOVATE** Create Solutions | **EXCEL** Achieve Excellence | **IMPACT** Build a Better Future




> "The best way to predict the future is to create it."
> – Together with Nexora

## CONTACT US

### REACH US

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### GET IN TOUCH

- STEM Lab Setup & Implementation
- Curriculum & Teacher Training
- Student Workshops & Competitions
- Technical Support & Maintenance
- Partnerships & Collaborations

### LET'S BUILD THE FUTURE TOGETHER!

For school partnerships, demo sessions, or any queries, feel free to connect with our team.



**SCHOOL PARTNERSHIPS** Creating Innovation Hubs | **TRAINING & SUPPORT** Empowering Educators | **INDUSTRY ALIGNED** Future-Ready Skills | **COMPETITIONS & RECOGNITION** Encouraging Excellence | **GLOBAL EXPOSURE** Connecting to Opportunities