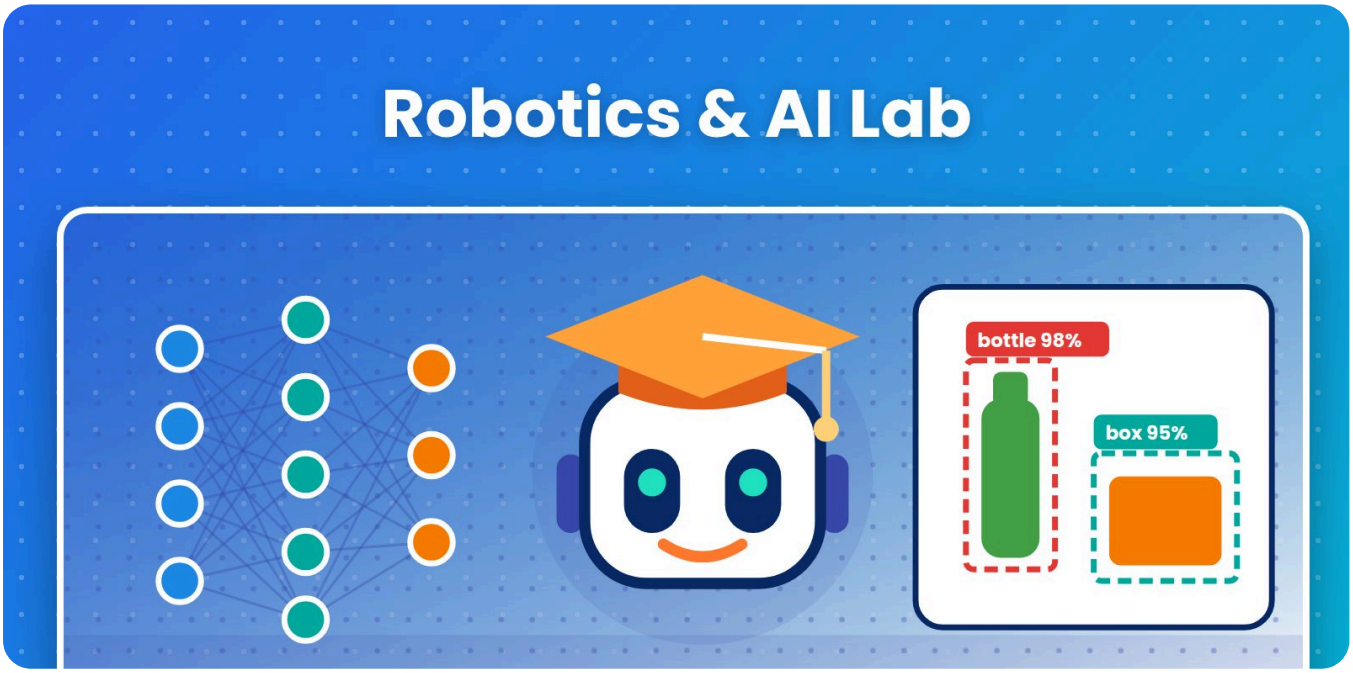
ROBOTIX
SCHOOL LAB

SCHOOL PARTNERSHIP BOOKLET

Building Tomorrow's Innovators Today

Preparing school students for a technology-driven future through Robotics, STEM, Artificial Intelligence, Coding and hands-on innovation.

Robotics | STEM | Artificial Intelligence | Coding | Innovation



Illustrative artwork · Robotix Lab

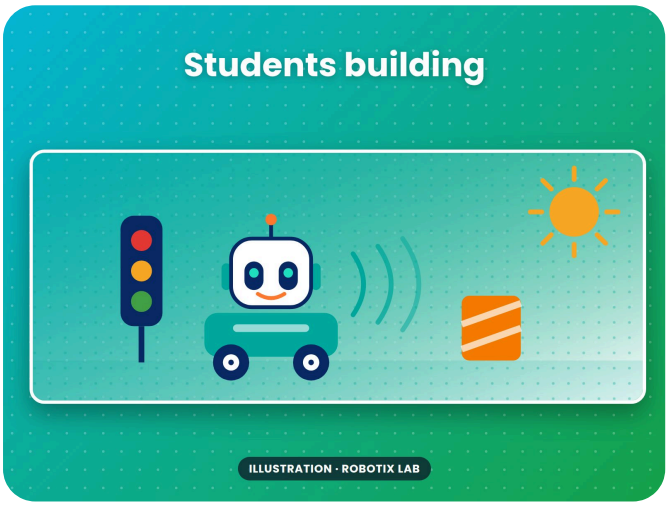
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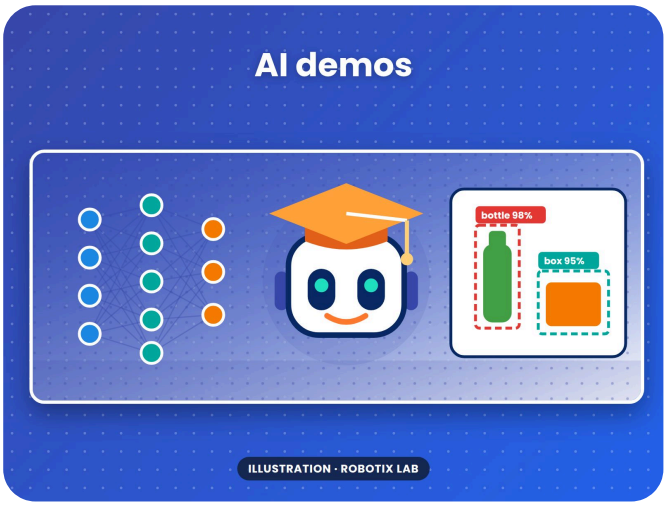
+91 63502 70708
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WHY WE EXIST

Students should not only learn about technology. They should learn to use it.

The world is changing quickly because of artificial intelligence, automation, robotics, connected devices and digital technologies. Schools have an opportunity to prepare students not only to understand technology, but to create, question, experiment with and use it responsibly.





Robotix Lab helps schools introduce practical learning experiences in which students explore concepts, build projects, solve real problems and develop confidence. We are committed to:

- **Practical learning**
- **Innovation**
- **Creativity**
- **Logical thinking**
- **Problem-solving**
- **Teamwork**
- **Responsible technology**
- **Future-ready skills**

> **"Our mission is to help schools create an environment where students do not simply learn about technology—they learn how to use it to solve problems and build meaningful solutions."**

This is our mission and the direction we work towards. It is not a claim of achievements that have not yet occurred.

WHO WE ARE

An integrated approach to practical technology education

Robotix Lab is an education-focused startup that helps schools introduce practical, technology-driven learning through robotics laboratories, age-appropriate AI education, coding, engineering activities, STEM projects, educational equipment and teacher training.

Our proposed services

1. School STEM laboratory planning and setup
2. Robotics laboratory equipment and educational kits
3. Age-appropriate robotics curriculum, Classes 5–12
4. Artificial intelligence education
5. Coding and computational thinking
6. Electronics and microcontroller projects
7. Internet of Things learning activities
8. Hands-on engineering challenges
9. Teacher training and mentoring
10. Project-based learning
11. Student innovation and prototypes
12. Practical demonstrations of real-world technology

Not just equipment. A complete educational ecosystem.

Buying laboratory equipment is not the same as building a learning environment. Our proposed approach combines equipment, curriculum, teacher training, guided projects and continuous learning support.

Equipment, curriculum, implementation schedule and training are customised to each school's requirements, infrastructure, budget and student levels.

THE CHANGING WORLD

Why are robotics and AI necessary today?

Artificial intelligence is transforming work

AI is changing how people analyse information, communicate, design products, research and perform everyday tasks. Students should understand its principles, capabilities, limits and responsible use.

Automation is becoming common

Robotics and automation are used in manufacturing, healthcare, agriculture, logistics, transport and environmental monitoring. Sensors, programming and control systems are useful foundations.

Digital literacy is no longer enough

Students need to move beyond consuming digital content. They should create programs, build models, test ideas and understand the systems behind the technology they use.

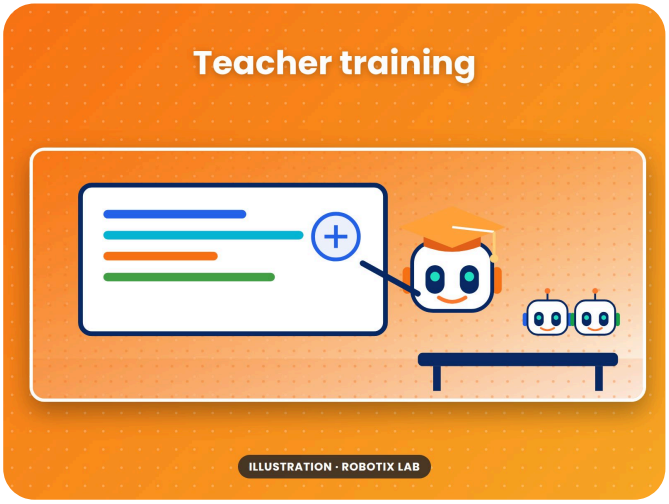
Problem-solving is a core skill

Robotics challenges teach students to break complex problems into steps, test solutions, find errors and improve their designs.

Technology requires responsibility

AI education must include privacy awareness, digital safety, fairness, misinformation awareness, human judgement and ethical decision-making.





> **"Tomorrow's opportunities will favour people who can understand problems, learn continuously, work collaboratively, and use technology responsibly."**

Robotics and AI education does not mean every student must become an engineer, and it does not guarantee employment.

FOUR DISCIPLINES, ONE PROJECT

Why STEM education matters

S — Science

Understanding the natural world through observation, investigation and experimentation.

T — Technology

Using tools, software and digital systems to solve problems.

E — Engineering

Designing, building, testing and improving practical solutions.

M — Mathematics

Using numbers, measurement, patterns and logic to understand and solve problems.

How robotics connects all four

Science

Light, distance and physical movement

Engineering

Assembling, testing and improving the robot

Example project

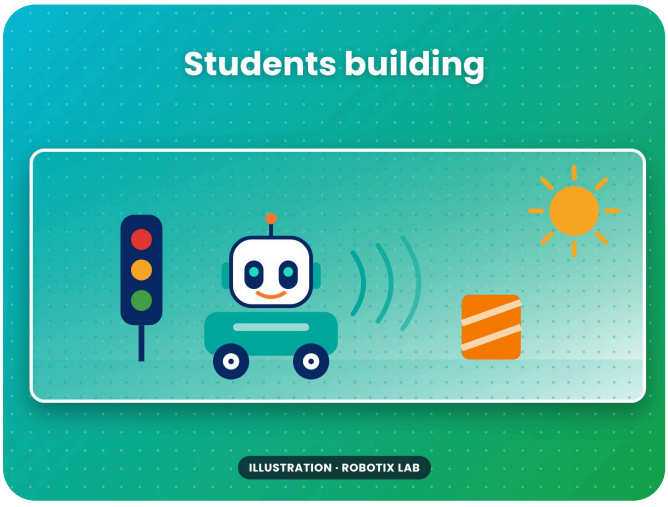
Obstacle-avoiding robot

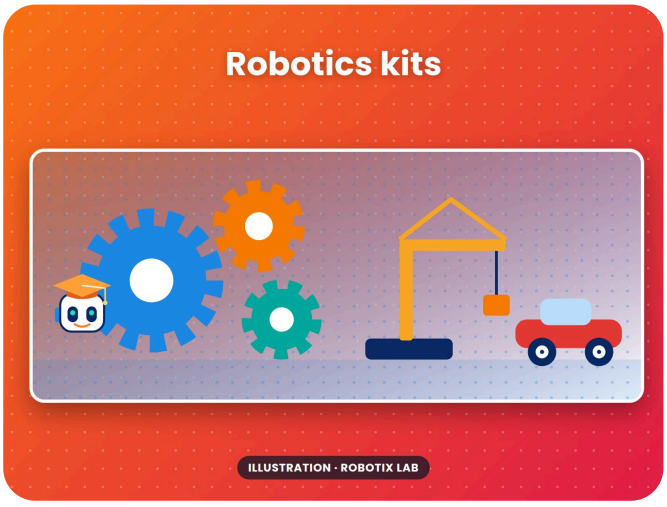
Technology

Sensors, controllers and programming

Mathematics

Measurement, angles, speed, timing and calculations





STEM activities complement classroom teaching by connecting academic concepts to practical applications.

THE CASE FOR A LAB

Why schools need modern STEM and robotics labs

A well-designed STEM laboratory can offer:

- **01** Practical application of classroom concepts
- **02** Structured experimentation
- **03** Building and programming robots
- **04** Introduction to engineering design
- **05** Collaborative learning
- **06** Creative thinking
- **07** Early exposure to coding and AI
- **08** Hands-on sensors and electronics
- **09** Project-based assessment
- **10** Preparation for higher technical learning
- **11** Science exhibitions and innovation projects
- **12** A structured way to explore real-world problems

> **"Textbooks help students understand concepts. Well-designed STEM activities give them opportunities to apply, test, and deepen that understanding."**

Traditional learning activity	Practical STEM learning activity
Reading about gears	Building a working gear mechanism
Studying sensors theoretically	Connecting a sensor and testing its readings
Learning programming syntax	Programming a robot to complete a task
Reading about agriculture technology	Building an automated irrigation model
Learning about AI concepts	Exploring patterns through a guided AI activity
Studying engineering designs	Building, testing and improving a prototype

Both approaches are complementary. Textbooks and teacher-led instruction remain essential. Theory-only learning, without opportunities to apply ideas, can leave students with understanding that is harder to test.

PROPOSED SERVICE MODEL

One educational partner. Multiple learning opportunities.

1. Laboratory planning

Identify suitable equipment, workspace, age groups and learning objectives.

2. Robotics equipment

Provide or coordinate kits, components, sensors, controllers and related equipment within the agreed scope.

3. Structured curriculum

A progressive pathway for Classes 5–12, adapted to timetable and student ability.

4. Teacher training

Practical orientation on equipment, projects, programming, classroom management and safety.

5. Student project activities

Individual and team projects of increasing complexity.

6. AI education

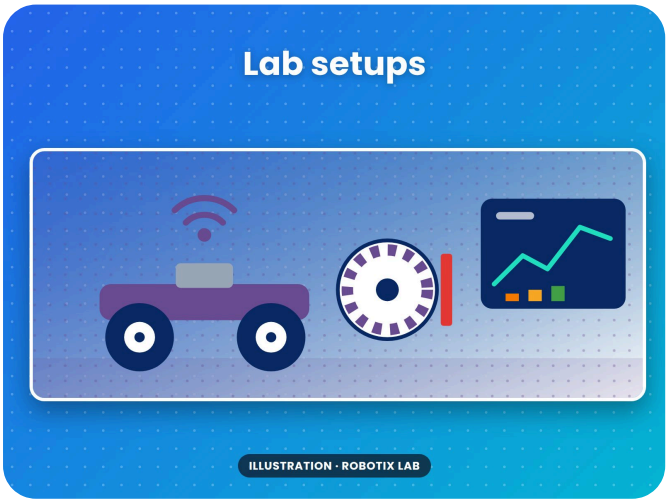
Guided activities on AI concepts, data, patterns and responsible use.

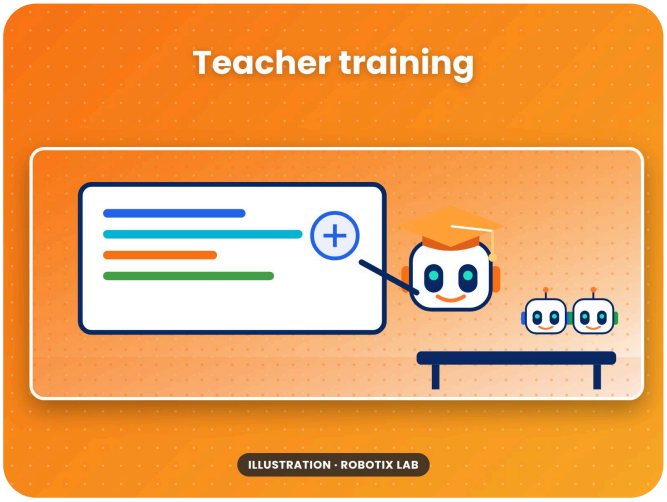
7. Project documentation

Where included, help schools document projects and demonstrations.

8. Ongoing learning support

Agreed curriculum updates, activity guidance and technical support.





These are proposed services. Not every service is included in every package. Scope, schedule and support are agreed individually with each school.

LEARNING OUTCOMES

How students benefit

Critical thinking
Examine problems, compare solutions and evaluate results.

Logical reasoning
Programming teaches sequencing, conditions, repetition and structured problem-solving.

Creativity
Develop own designs and explore alternative ways to complete tasks.

Engineering mindset
A prototype may not work first time. Testing and improvement are part of engineering.

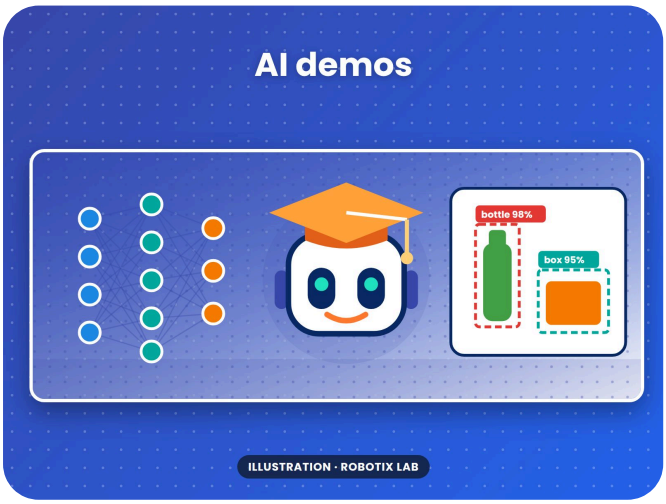
Collaboration
Team projects build communication, shared responsibility and common goals.

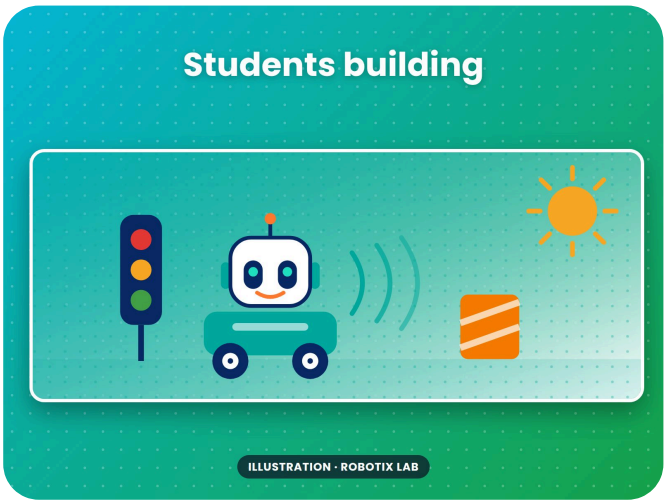
Digital and AI literacy
Age-appropriate understanding of coding, robotics, data and AI.

Communication
Explain designs, demonstrate projects and describe challenges overcome.

Confidence and initiative
Make decisions, experiment, learn from errors and own the work.

Career awareness
Explore engineering, computer science, AI, automation, electronics and research.





These are intended learning outcomes. Actual development depends on teaching quality, student participation and implementation.

A PROGRESSIVE JOURNEY

Discover → Build → Engineer → Innovate

Activities become more challenging as students build the knowledge and practical skills they need.

STAGE 1 · CLASSES 5–6

Discover & Explore

- Introduction to STEM
- Basic machines and mechanisms
- Building simple models
- Sequencing and computational thinking
- Inputs and outputs
- Observation, measurement, experimentation

Projects: Gear machines, simple vehicles, lever models, simple construction challenges

Outcome: Understand how mechanisms work, follow instructions, explore cause and effect.

STAGE 2 · CLASSES 7–8

Build & Program

- Sensors and actuators
- Basic electronics
- Block-based programming
- Robot construction
- Intro to microcontrollers
- Simple control logic

Projects: Obstacle-avoiding robot, smart dustbin, automatic lighting, sensor alarm, robotic vehicle

Outcome: Assemble simple robotic systems and use programming logic to control outputs.

STAGE 3 · CLASSES 9–10

Engineer & Automate

- Programming fundamentals
- Microcontroller projects
- Robotics mechanisms and sensor integration
- Automation concepts
- Introduction to AI
- Testing and troubleshooting

Projects: Line-following robot, automated irrigation, environmental monitoring, programmable robots

Outcome: Combine hardware and software, interpret sensor data and improve designs through testing.

STAGE 4 · CLASSES 11–12

Innovate & Develop

- Advanced robotics projects
- Python programming
- Embedded systems, IoT concepts
- Computer vision and AI fundamentals
- Prototyping and design challenges
- Data collection, integration, testing

Projects: Vision-based object sorter, IoT monitoring prototype, AI image classification demo

Outcome: Develop, document, present and improve more complex prototypes.

These are proposed learning stages, not a claim of formal board approval. Final activities are mapped to the school curriculum, equipment, student readiness and lab safety requirements.

ARTIFICIAL INTELLIGENCE

From using AI to understanding AI

Students should not merely use AI applications. They should also learn, at an age-appropriate level, how AI systems work.

Foundation level

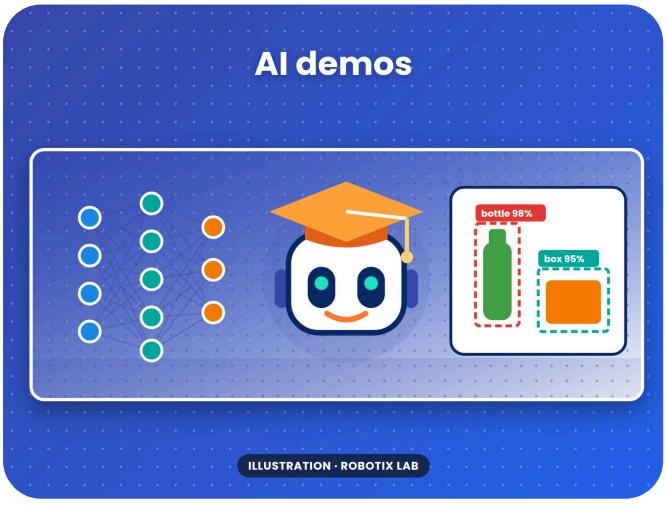
- What AI is
- Examples of AI in daily life
- Automation versus AI
- Recognising patterns
- Introduction to data
- Digital safety and privacy

Intermediate level

- Data and patterns
- Machine learning basics
- Simple classification demos
- Guided AI activities
- AI can make mistakes
- Bias and misinformation

Advanced school level

- Python-based AI activities
- Computer vision demos
- Image classification concepts
- AI-powered robotics projects
- Data preparation and evaluation
- Documentation and presentation



Real-world examples

Age-appropriate examples are drawn from:

Agriculture · Healthcare · Education · Environment · Manufacturing · Transportation · Accessibility · Smart infrastructure

AI activities are chosen by student age, technical readiness, equipment, internet access and teacher preparation. Not every student will build production-grade AI systems.

DIGITAL CITIZENSHIP

Innovation with responsibility

Technical skills must be supported by responsible judgement.

Privacy awareness
Why personal information, photographs, passwords and sensitive data need protection.

Ethical AI use
When AI help is appropriate, why human judgement matters, and why AI output should be evaluated.

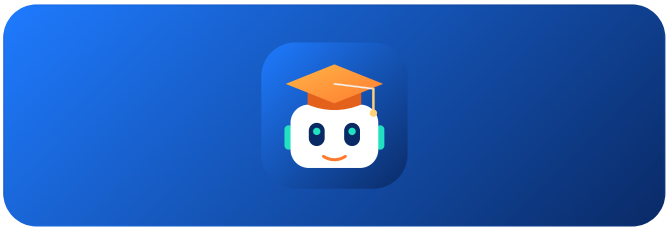
Bias and fairness
Data and AI systems can reflect bias and produce unfair outcomes.

Misinformation awareness
Verify information instead of automatically trusting AI-generated answers.

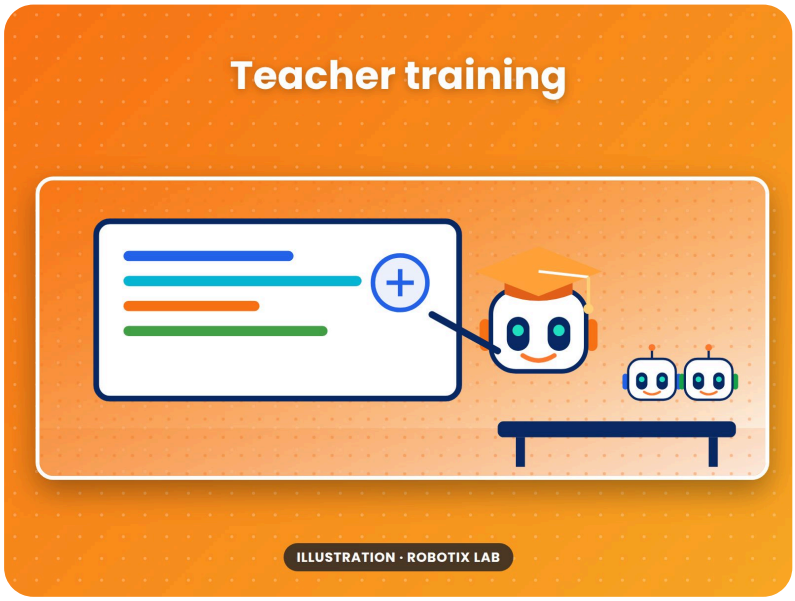
Academic integrity
AI should support learning and creativity, not replace a student's own effort.

Safe laboratory practice
Handle electronics, batteries, tools, wiring and moving parts under supervision.

Environmental responsibility
Projects on energy efficiency, waste reduction and sustainable solutions.



> **"Future-ready education must teach students not only what technology can do, but also how and when it should be used."**



WHAT A LAB MAY INCLUDE

Our laboratory ecosystem

Robotics & mechanical learning

- Educational robotics kits
- Wheels, gears, axles and structural parts
- Student-appropriate tools
- Mechanical model components

Electronics & embedded systems

- Breadboards and basic components
- Suitable sensors
- Motors and actuators
- Microcontroller boards
- Safe power and battery systems

Coding & programming

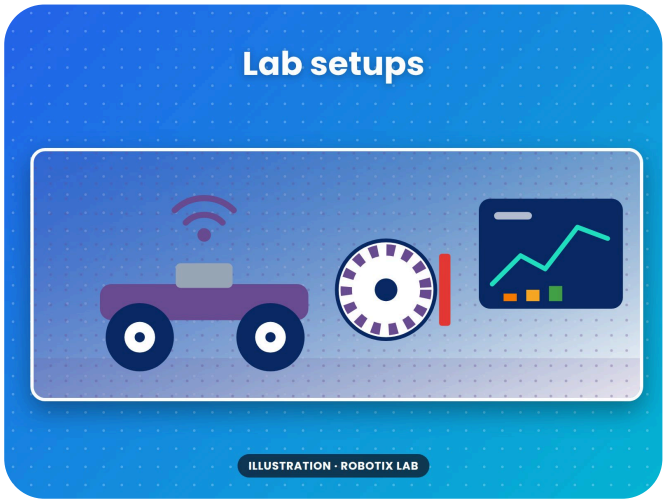
- Block-based tools
- Suitable programming environments
- Python learning resources
- Debugging and documentation

AI & smart technology

- AI learning software and demos
- Computers or laptops
- Camera-based demonstrations
- Data collection and visualisation
- IoT components where included

Laboratory infrastructure

- Worktables
- Storage and organisation
- Safety equipment
- Project display areas
- Teacher demonstration space



The final equipment list depends on the school's package, curriculum, student strength, budget, infrastructure and technical needs. Not every component is included in every installation.

MEET THE FOUNDER

Founder



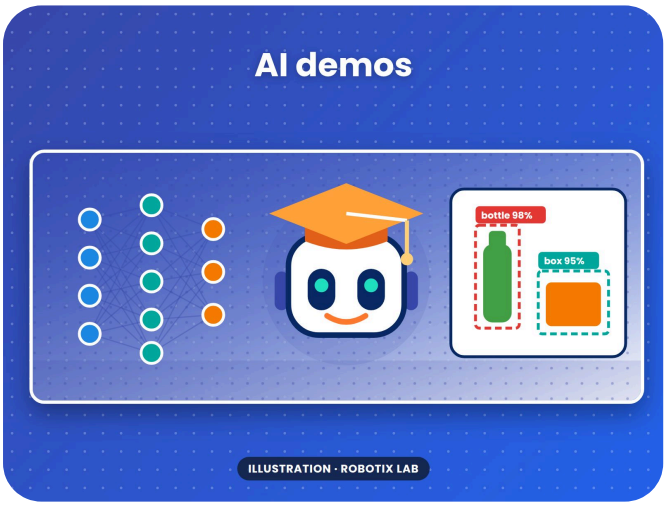
Raju

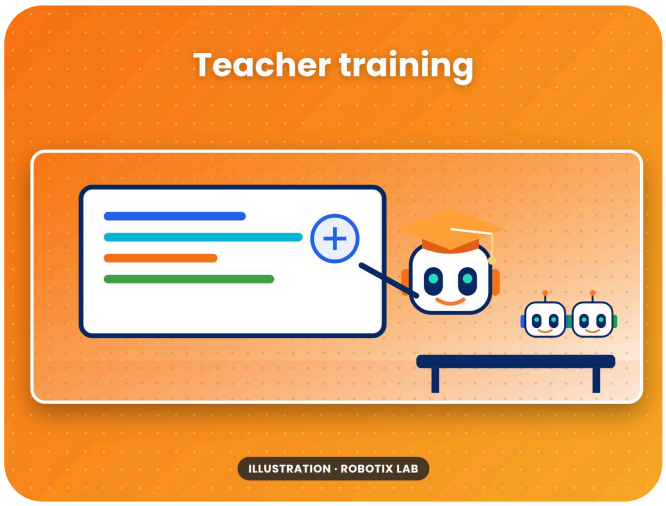
ROBOTICS, AI AND STUDENT DEVELOPMENT

7 years' experience | B.Tech, Rajasthan Technical University

Raju has experience in personality development and as a robotics and AI teacher, with broad knowledge of AI technology and experience working with international clients. He is associated with the iStart Rajasthan ecosystem. His technical background and teaching experience support practical technology education and student confidence.

Proposed role: Robotics and AI learning strategy, practical demonstrations, curriculum implementation, student mentoring and personality development activities.





> **"Technology education works best when students build real projects, ask questions and gain the confidence to present their ideas."**

Associations with iStart Rajasthan and Rajasthan Technical University describe individual education and experience. They do not imply endorsement of, or affiliation with, Robotix Lab.

OUR STRENGTHS

What we bring to schools

Technical learning

Robotics, AI, programming, practical demonstrations and technology integration.

Student development

Personality development, confidence-building, teamwork and presentation practice.

Communication

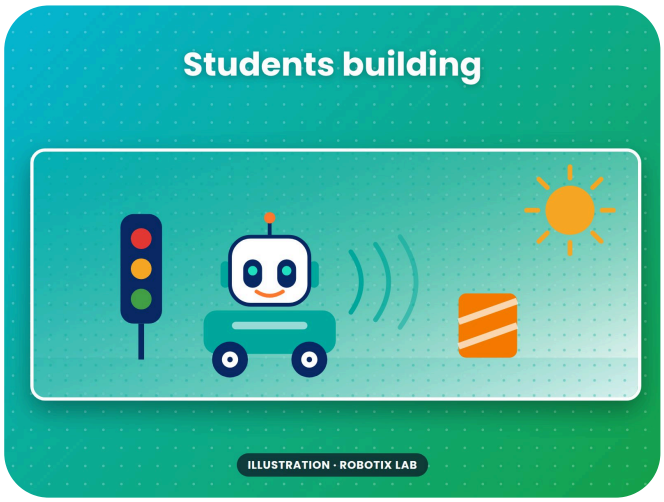
Clear communication, explaining technical concepts and structured presentations.

School coordination

Planning, communication with school management and implementation coordination.

Digital and business operations

Technology planning, digital tools, programme documentation and coordination of school services.



"Technology education becomes more meaningful when students develop technical understanding alongside communication, teamwork, confidence, and responsible decision-making."

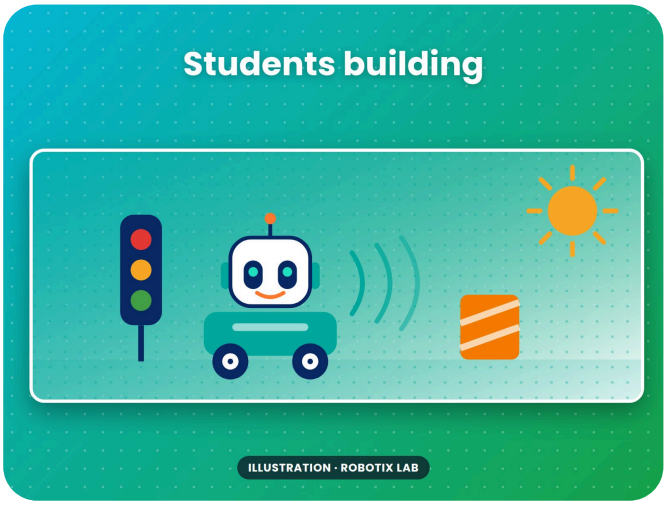
TEACHERS AT THE CENTRE

Empowering teachers to deliver practical learning

Teachers play a central role in successful STEM education. Our proposed teacher support may include:

1. Laboratory orientation
2. Equipment familiarisation
3. Curriculum walkthroughs
4. Guided project demonstrations
5. Programming and robotics practice
6. Classroom activity planning
7. Student project supervision
8. Basic troubleshooting
9. Assessment and documentation methods
10. Safe equipment handling





Our aim is to help teachers become confident facilitators of practical learning. Duration, delivery method and ongoing support depend on the school agreement.

EXAMPLE ACTIVITIES

Sample student project showcase

Project	Class	Components	Skills & objectives	Real-world link
Beginner projects				
Gear mechanism	5–6	Gears, axles, frame	Mechanisms, cause and effect	Machines and tools
Moving vehicle	5–6	Wheels, motor, chassis	Building, testing	Transport
Mechanical lifting model	5–6	Levers, pulleys	Force, measurement	Cranes and lifts
Structural challenge	5–6	Building parts	Design, teamwork	Civil engineering
Intermediate projects				
Obstacle-avoiding robot	7–8	Ultrasonic sensor, microcontroller, motors	Sensors, block coding	Autonomous vehicles
Smart dustbin	7–8	Sensor, servo, board	Input–output logic	Smart cities
Automatic lighting	7–8	LDR, LED, board	Control logic	Energy saving
Sensor-based alarm	7–8	Sensor, buzzer, board	Conditions, testing	Home safety
Advanced projects				
Line-following robot	9–10	IR sensors, motors, board	Sensor integration, control	Factory automation
Automated irrigation	9–10	Soil sensor, pump, board	Automation, data	Agriculture
Environment monitor	9–10	Sensors, display	Data and troubleshooting	Environmental care
Microcontroller automation	9–10	Boards, relays	Programming, testing	Smart devices
Innovation projects				
Vision-based sorter	11–12	Camera, board, Python	Computer vision	Logistics
AI image classification demo	11–12	Laptop, camera, Python	Data, evaluation	Healthcare, retail
IoT monitoring prototype	11–12	Wi-Fi board, sensors	IoT, documentation	Smart infrastructure
Python data analysis	11–12	Laptop, sensor data	Analysis, presentation	Research

All projects shown are examples and proposed activities. They have not necessarily been built or demonstrated by Robotix Lab students.

INTERDISCIPLINARY LEARNING

Connecting classroom learning with real life

School subject	Practical STEM connection
Mathematics	Measurement, ratios, angles, speed and calculations
Science	Forces, motion, electricity, energy and observation
Computer Science	Algorithms, programming, logic and debugging
Environmental Studies	Water monitoring, waste management and sustainability
Physics	Motors, motion, circuits and sensors
Geography	Environmental data, weather observations and mapping concepts
English	Project reports, presentations and technical explanations
Art and Design	Product design, visualisation and prototype appearance

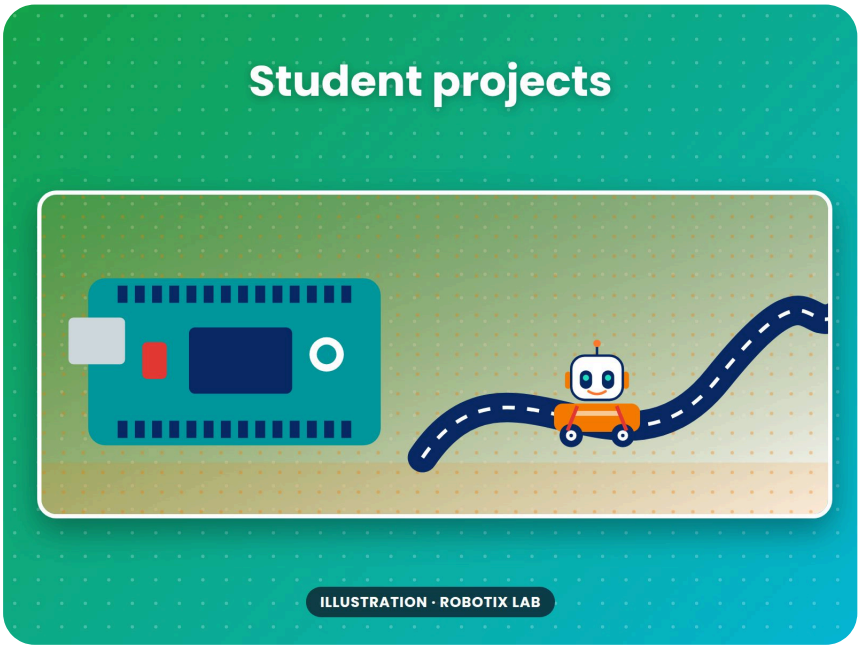
One project, four subjects: automated irrigation model

Mathematics
Calculate water volume and sensor thresholds.

Science
Study soil moisture and plant needs.

Coding
Program the pump to switch on and off.

Engineering
Assemble, test and improve the system.



FOR SCHOOL MANAGEMENT

The benefits for schools

Stronger practical learning

Students apply theory through guided activities.

A future-ready environment

Age-appropriate robotics, coding, AI and engineering learning.

Interdisciplinary teaching

Connect science, mathematics, computer science and creative problem-solving.

Projects and exhibitions

Showcases, demonstrations, innovation days and supervised challenges.

Teacher development

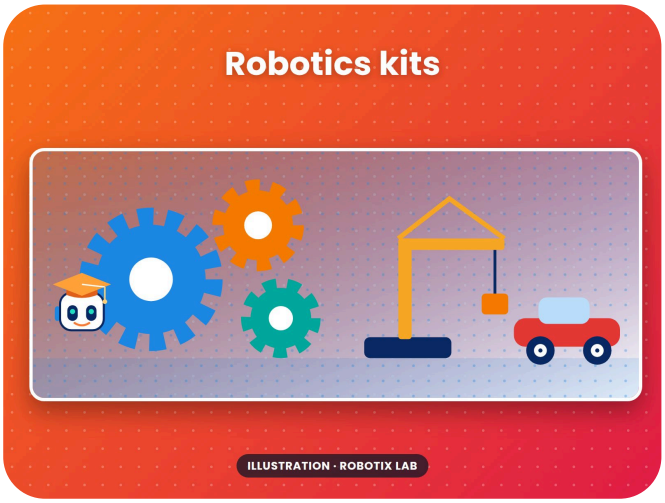
Structured training to integrate practical activities into teaching.

Parent engagement

Exhibitions let parents see students' learning and work.

Institutional differentiation

A well-implemented STEM lab can show a school's commitment to modern education.



These are potential benefits that depend on the school's implementation and educational strategy. We do not guarantee changes in admissions, rankings, examination results or financial returns.

OUR PROPOSED PROCESS

From school requirements to student innovation

1

Understand the school

Student strength, class levels, curriculum goals, timetable, budget, space and infrastructure.

2

Plan the laboratory

Choose suitable equipment, learning zones and safety requirements.

3

Map the curriculum

Prepare age-appropriate activities and projects for the agreed classes.

4

Set up the environment

Arrange agreed equipment, resources and lab organisation.

5

Orient and train teachers

Introduce equipment, curriculum, activities and safety procedures.

6

Begin student learning

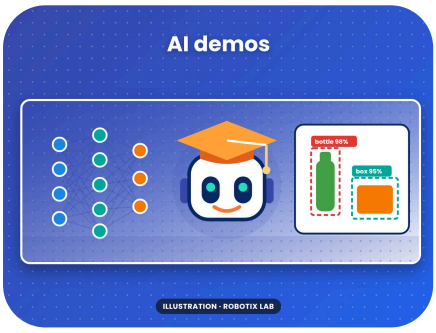
Run practical sessions, projects, demonstrations and learning assessments.

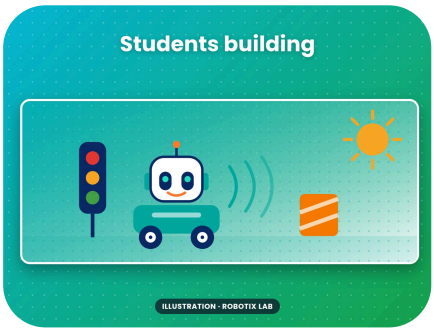
The implementation schedule, responsibilities, pricing, support arrangements and deliverables are finalised through a written agreement with each school.

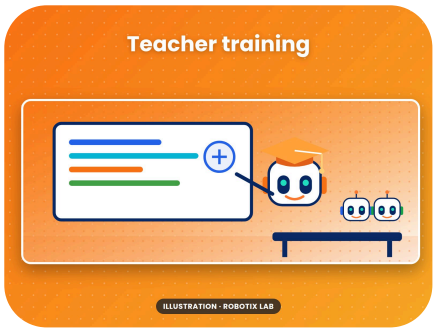
LOOKING AHEAD

Our vision for the future

Robotix Lab aims to contribute to a future in which school students have meaningful opportunities to explore technology, understand artificial intelligence, develop engineering skills and solve problems creatively.







We believe students should be able to move from curiosity to experimentation, from experimentation to understanding, and from understanding to innovation. Our long-term aspiration is to work with schools and educators to make structured, practical STEM and AI learning more accessible.

Learn by doing

Students understand concepts through experimentation and application.

Build with purpose

Projects connect technical skills with meaningful challenges.

Innovate responsibly

Students consider safety, privacy, fairness and the consequences of technology.

WORK WITH US

Let’s build a future-ready learning environment together

STEM lab setup

Planning and supply of agreed robotics and STEM laboratory equipment.

Robotics education programme

Structured learning activities for Classes 5–12.

AI and coding programme

Age-appropriate coding, AI and computational thinking.

Teacher training

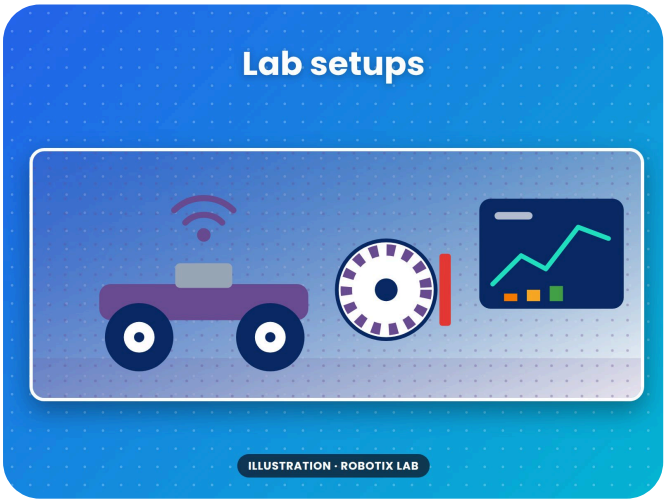
Practical orientation and professional development.

Project-based learning

Guided projects, prototypes and showcases.

Custom school solutions

Recommendations based on your needs and resources.





Discuss your school’s needs

Tell us about your students, infrastructure, timetable and budget. We will recommend a curriculum and laboratory plan that fits.

GET IN TOUCH

Let’s build the future of learning.

Give your students opportunities to explore robotics, understand artificial intelligence, develop engineering skills and turn ideas into practical projects.

ROBOTIX LAB

Building Tomorrow’s Innovators Today

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robotixlab.school

> **“Every great innovation begins with a question. Let’s help students learn how to ask better questions, explore possibilities, and build solutions.”**