



**iEduBull**

# COMPOSITE SKILLS LAB

The All-in-One Lab Shaping Future Innovators



A COMPLETE SOLUTION FOR SCHOOLS,  
REQUIRING NO FINANCIAL INVESTMENT

# The Need For Composite Skills Labs



**केन्द्रीय माध्यमिक शिक्षा बोर्ड**  
(शिक्षा मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संगठन)

**CENTRAL BOARD OF SECONDARY EDUCATION**  
(An Autonomous Organisation Under the Ministry of Education, Govt. of India)

**CBSE/SE/JS/Skill Labs/2024** Dated: 23.08.2024

The Principals/ Heads of Institutions  
affiliated to CBSE Circular No.: Skill-75/2024

**Subject: Setting up of 'Composite Skill Labs' in CBSE schools**

Dear Principal,

As you are aware that the National Education Policy (NEP) - 2020 and the National Curriculum Framework for School Education (NCF-SE), has focussed significantly on enhancing Skill Education, particularly for students in classes VI to X.

NCF-SE has also advocated the inclusion of skill subjects as an integral part of the curriculum by including it as a mandatory subject of study from class VI onwards. It stresses the importance of equipping students with practical skills alongside traditional academic subjects.

NCF-SE has emphasised that schools must provide opportunities for students to engage in real-world tasks and projects related to their chosen skills, thus bridging the gap between theory and practice. It has advocated the establishment of well-equipped skill labs and vocational training centers within schools. These facilities are crucial for providing the necessary resources and environment for effective skill development and practical, hands-on learning experiences.

However, it has been noticed that many schools currently lack the necessary facilities and equipments to provide effective hands-on training. The matter was discussed in the 139<sup>th</sup> meeting of the Governing Body of the Board and it was been mandated that all schools affiliated with the Board must establish a 'Composite Skill Lab' alongwith all necessary equipments and machinery to effectively implement the recommendations of NEP and NCF-SE.

It is believed that setting up 'Composite Skill Labs' will help in providing training on practical skills aligned with industry needs, enhance employment prospects for students in various trades and vocations, enable exploration of diverse career pathways beyond traditional options, and foster entrepreneurial capabilities among students.

Schools are advised to set up either one Composite Skill Lab of 600 sq. ft. area for classes VI-XII, or two separate labs of 400 sq. ft. area each, one for classes VI-X and the other for classes XI-XII.

**Implementation Timeline:**

- For the schools seeking **fresh affiliation** with CBSE, a Composite Skill Lab with all necessary equipments and machinery is a **mandatory requirement** for all schools seeking fresh affiliation with CBSE.
- Schools **already affiliated** with CBSE must establish a Composite Skill Lab with all necessary equipments and machinery, **within a period of three years** from the date of this circular.

Additional details regarding the setup of these labs, including necessary materials for teaching various skill subjects, will be available in the curriculum guidelines published on the CBSE website shortly.

Further, the schools that are already offering Skill subjects are advised to offer more choices to students by offering more Skill subjects. The schools that are still not offering any Skill subjects are advised to offer atleast one Skill subject to the students.

We appreciate your cooperation and commitment to enhancing skill education through this important initiative.

*(Dr. Biswajit Saha)*  
Director (Skill Education)

'शिक्षा सदन', १ राऊज एवेन्यू, इंस्टीट्यूशनल एरिया, नई दिल्ली-110002  
'Shiksha Sadan', 17, Rouse Avenue, Institutional Area, New Delhi - 110002

Phone: Telephone: 011-23216983, 23214737 वेबसाइट: Website: <http://www.cbseacademic.nic.in> ई-मेल: e-mail: [directorvoc.cbse@gmail.com](mailto:directorvoc.cbse@gmail.com)



CBSE circular for composite labs in every school issued in August 2024

## Learning by Doing: The World is Embracing Composite Skills

65% of current students will work in jobs that don't exist yet by 2030

McKinsey & Company

50% of organisations worldwide report using AI in daily operations



300 million people will require new skills in tech, social, and cognitive domains



By 2027, AI adoption will create millions of new tech-related jobs



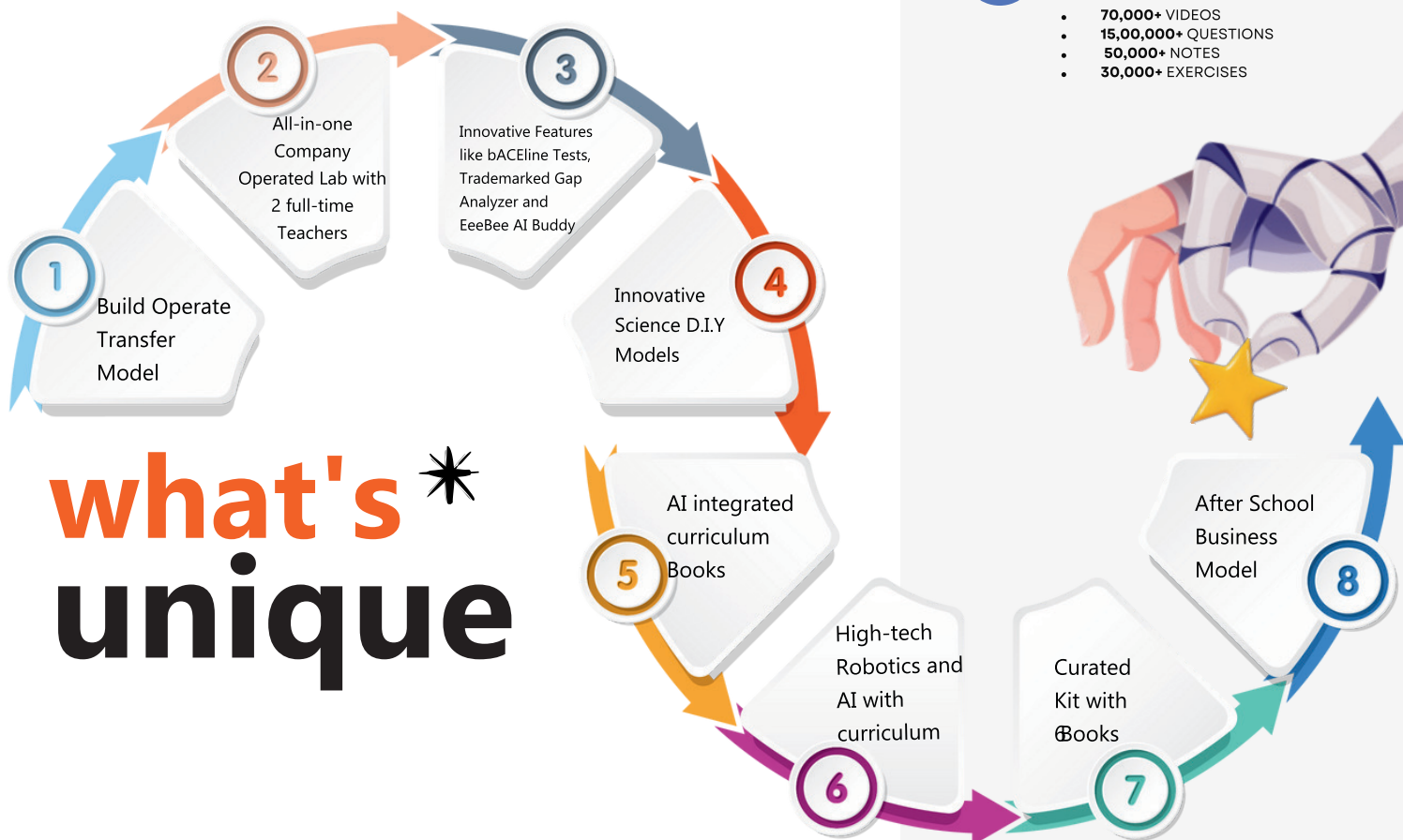
# About Us

Edubull empowers both teachers and students by providing innovative, user-friendly tools that inspire capability-building rather than rote memorization. By bridging traditional learning with the digital age, Edubull offers accessible and impactful technology that enhances the educational experience. Our research-driven approach personalizes education, focusing on each learner's unique needs to deliver a comprehensive, outcome-oriented journey in learning



## About Composite Skills Lab

The **iEdubull: Composite Skills Lab by Edubull**, aligned with CBSE and NEP 2020, empowers students by fostering **passion, creativity, curiosity, and real-world problem-solving**. With hands-on learning and cutting-edge resources, the lab bridges academics and practical skills, preparing students for diverse career paths and future challenges. **Designed to ignite innovation and entrepreneurial spirit**, it equips learners with the confidence and critical skills to thrive in every aspect of life and become tomorrow's leaders.



what's <sup>\*</sup> unique

## The iEduBull Ecosystem



### AI-integrated Book Publication

- CBSE CURRICULUM BASED
- NEP 2020 ALIGNED
- AI INTEGRATED TOOLS
- UNIQUE PEDAGOGY
- EEEBEE AI BUDDY



### STEM-Tech Lab

- AI
- CODING
- ROBOTICS
- AI + ROBOTICS CURRICULUM



### Academic Lab

- MATH, SCIENCE & ENGLISH AI BOOKS
- BACELINE TESTS
- GAP ANALYZER™
- EEEBEE AI BUDDY
- PREP + TEST



### English Communication Lab

- L.S.R.W. PLATFORM
- CEFR-BASED
- COMMUNICATION BOOKS



### Science Experiential Lab

- CURRICULUM INTEGRATED D.I.Y. LEARNING
- WORKING SCIENCE MODELS



### Skills 4.0 Lab

- VOCATIONAL
- LIFESKILLS
- NEW-AGE SKILLS



### Largest Curriculum based Content in India

- 70,000+ VIDEOS
- 15,00,000+ QUESTIONS
- 50,000+ NOTES
- 30,000+ EXERCISES



# What iEdubull Offers

India's First all-in-one Skill Lab

The Ultimate Skills Lab, delivering unmatched value through cutting-edge tools, expert instructors, and advanced pedagogy—all under one roof.

## 1. ACADEMIC LAB Science, EVS, Math, English



- **bACELine Tests** to identify learning loss in students
- **Gap Analyzer™** to remedy learning gaps and continuous assessments
- IIT/JEE, NEET and Olympiads
- **EeeBee AI Buddy** Integrated

## 2. STEM TECH (AI + ROBOTICS) LAB



- Level-wise **AI/ML, Robotics, Python, and Scratch**
- **Curriculum Book for AI, Robotics and Coding**
- In-lab setup for **STEM exploration**
- **50+ Robotics Equipment**
- **IIT Certifications**

## 3. SCIENCE EXPERIENTIAL LAB



- 50 curriculum-based DIY working models
- Complements **classroom theory with experiential engagement.**
- **Hands-on learning** for an in-depth understanding of scientific principles

## 4. ENGLISH COMMUNICATION LAB



- LSRW (Listening, Speaking, Reading, Writing) **Pedagogy**
- **CEFR-based** learning ensures students meet international language standards.
- **Curriculum-integrated** and **AI-enabled for practical** communication proficiency
- Specialised Communication & Grammar Books

## 5. INFRASTRUCTURE



- **40 cutting-edge computers**
- Featuring **ergonomic furniture**, and other fittings.
- **3D printers, smart panels, and AI wall panels.**

## 6. AI-HYBRID TEXTBOOKS



- For 1-8th Class, AI-powered Hybrid textbooks for **Math, Science, EVS.**
- Textbook for **English Grammar and Communication**
- Textbooks for **AI and Robotics**
- Textbook for **Coding**
- based on **NCERT, NEP 2020** and **NCF**
- Integrating **assessments, activities, and interactive tools** for enhanced learning outcomes.

## 7. TWO ON-SITE EXPERT TEACHERS



- **Two highly trained**, expert teachers
- In to offer **360° support.**
- ensuring **personalized attention** and continuous support for students and school.





# Lab Components



## AI-integrated Books

- **First of Its Kind:** Seamlessly connects digital learning with the simplicity of a textbook.
- **Optimized for Success:** Crafted to deliver optimal learning outcomes and transform each student's educational journey.
- **Innovative Features:** Includes EeeBee Buddy—an AI tutor and companion—along with gap analysis assessments, mind maps, and more.
- **EeeBee AI Buddy in Academic Lab:** Integrated into the textbook to provide unparalleled learning experience

## kits (Junior/ Senior Kit)

### EACH STUDENT GETS ONE KIT WITH 6 BOOKS

- **Robotics & Tools:** Interactive robotics toys designed for beginner engagement.
- **Science Models:** Practical models to explore and apply scientific concepts.
- **Coding Platforms:** Block-based tools like Scratch and introductory Python to develop coding skills.
- **Books & Manuals:** Six essential books covering Math, Science, AI, Robotics, English Communication, and a Science Experiential Manual.
- **App/Platform:** Gap Analyzer™ Learning App for personalized learning and LSRW English skills.

## In Lab Curriculum Design

- **Hands-On Learning:** Engage in robotics, AI, and AIOT through real-world coding projects.
- **Interactive Tools:** Explore robotics, voice coding, and foundational AI concepts.
- **Beginner to Advanced:** Use block-based platforms like Scratch and advanced tools like Python and Arduino IDE.
- **Practical Implementation:** Blend theoretical knowledge with hands-on experience to create tech-driven solutions.
- **AI Applications:** Teach foundational AI concepts, voice coding, and real-world automation systems through engaging projects.
- **Level-Wise, World-Class Curriculum:** A structured curriculum designed for progressive learning at every level.

## Technical Teachers

- **Guidance:** two dedicated teachers who lead and support students.
- **Collaboration:** Works with subject teachers to align curriculum.
- **Management:** Oversees kits and create student profiles for every student.

## State-of-the-Art Infrastructure

- Air-conditioned lab with premium flooring, walls, and roof for an ideal learning environment
- 60+ Science DIY Models
- 40 computers
- 8 working tables with chairs
- kits per table, kits per level
- 75-inch interactive board in lab
- Interactive wall panels in lab
- 1 projector for enhanced learning experiences
- 3D Printer: 1 for innovative project work
- Teachers: 2 specialized educators
- Printers

## Sessions

220 working days per year, with the following session distribution per class (40-minute sessions):

- 36 sessions in the lab
- 20 sessions at home
- 10 English sessions in the lab, 10 English sessions online



level-wise books



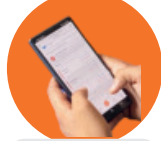
Robotics



Science DIY Model



2 Onsite Teachers



School App



Computers & Smartboards



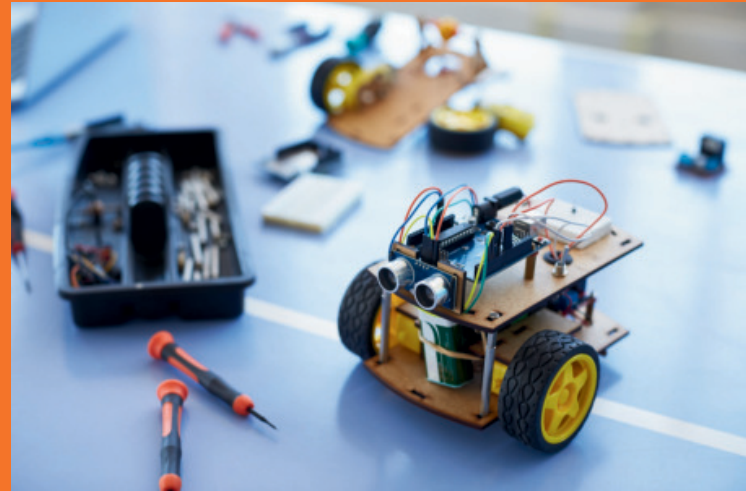
3D printer



Furniture

# STEM-Tech Lab (Robotics + AI)

Code the Future



The Artificial Intelligence (AI) Program in the RoboAI Lab is designed for students who aspire to **master the future of technology**. With a focus on coding languages, **AI, machine learning, and AIOT**, this program combines theoretical knowledge with **live project-based learning** to create a truly transformative educational experience

## Features:

- Instruction in key programming languages, including Python and MIT App Inventor.
- Live project-based learning, ensuring students apply their knowledge in practical settings.
- Exploration of AIOT and other advanced technological concepts.
- Interactive learning with tools like MIT App Inventor and Visual Studio.

## What's Unique:

- A curriculum designed by industry experts, offering a blend of theoretical and practical knowledge.
- Real-world projects that provide students with a tangible understanding of AI and its applications.
- Introduction to Mastery, the program covers all basis for a learner.

## Outcomes:

- Mastery of essential coding languages and AI concepts.
- Practical experience in AI and machine learning through real-world projects.
- Early exposure to cutting-edge technologies, preparing students for the future workforce.
- Practical experience in developing AIOT projects and smart technologies.
- Preparation for careers in AI and tech through hands-on learning.

## THE iEDUBULL: COMPOSITE SKILLS LAB

			CLASSES											
#	Product Name		1	2	3	4	5	6	7	8	9	10	11	12
<b>STEM-Tech Lab (Robotics + AI)</b>	1.	EeeBee Bot AIOT Programming Robot 1.0												
	2.	EeeBee Bot AIOT Programming Robot 2.0												
	3.	EeeBee Junior Smart Home Training Kit												
	4.	EeeBee AI Builder Kit												
	5.	EeeBee Senior Smart Home Training Kit												
	6.	EeeBee Eco Python Kit												
	7.	EeeBee Mangalyaan Arduino Robot Kit												
<b>Communication LAB</b>	1.	LSRW Based Courses												
<b>Skills LAB</b>	1.	Basic Computer												
	2.	Web Designing												
	3.	Graphic Designing												
	4.	Life Skills												
	5.	Vocational Skills												
	6.	Entrepreneur Skills												
	7.	Finance Skills												
	8.	Personality Development												
<b>Academic LAB</b> Math Science and English	1.	BaseLine Test												
	2.	Gap AnalyzerTM												
	3.	IIT JEE & NEET (Foundation & Olympiad)												

### 5-Year Implementation Progression Plan

Class	Year 1 (2025)	Year 2 (2026)	Year 3 (2027)	Year 4 (2028)	Year 5 (2029)
2	JL1	JL1	JL1	JL1	JL1
3	JL1	JL2	JL2	JL2	JL2
4	JL2	JL2	JL3	JL3	JL3
5	JL2	JL3	JL3	JL4	JL4
6	SL1	SL1	SL1	SL1	SL1
7	SL1	SL2	SL2	SL2	SL2
8	SL2	SL2	SL3	SL3	SL3
9	SL2	SL3	SL3	SL4	SL4
10	SL2	SL3	SL4	SL4	Graduated*



## Class wise, Level Wise Kit Distribution and Lesson Overview

Class	Level	Name of Kit	No. of Kits per Class	Total Periods
2nd-3rd	Junior Level 1	EeeBee Bot AIOT Programming Robot 1.0	7	26
<b>Total for Junior Level 1</b>				<b>26</b>
4th-5th	Junior Level 2	EeeBee Bot AIOT Programming Robot 2.0	-	16
		EeeBee Junior Smart Home Training Kit	7	18
<b>Total for Junior Level 2</b>				<b>34</b>
6th-7th	Senior Level 1	EeeBee AI Builder Kit	7	16
		EeeBee Senior Smart Home Training Kit	7	16
<b>Total for Senior Level 1</b>				<b>32</b>
8th-10th	Senior Level 2	EeeBee Eco Python Kit	7	14
		EeeBee Mangalyaan Arduino Robot Kit	7	16
<b>Total for Senior Level 2</b>				<b>30</b>

**Note - Total no. of kits = 42 (6 students will share one kit)**

## EeeBee Bot AIOT Programming Robot 1.0



### About

EeeBee Bot AIOT Programming Robot 1.0 - AI and Robotics combined kit which will teach the basics of AI, Robotics and programming.

### Curriculum Structure

- **Total Duration:** 26 lessons
- **Individual Lesson Duration:** 30-40 minutes

### Programming Languages



Voice Coding (AIOT)



Graphical Programming (Scratch 3.0)

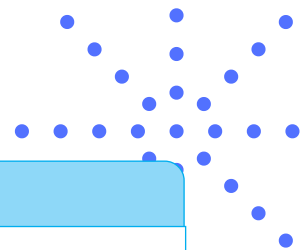
## Voice Coding Foundation for AI

Module	Duration	Activity
Module 1: Basic Navigation	30 minutes	Explore and Navigate with EeeBee Bot
Module 2: Creative Expression	30 minutes	Colorful Commands with EeeBee Bot
Module 3: Problem Solving	30-45 minutes	Obstacle Course with EeeBee Bot
Module 4: Advanced Navigation	45 minutes	Treasure Hunt with EeeBee Bot
Module 5: Storytelling	1 hour	Storytelling Journey with EeeBee Bot
Module 6: Interactive Expr.	30 minutes	Expressive Communication with EeeBee Bot
Module 7: Cultural Integration	45 minutes	Cultural Explorer with EeeBee Bot
Module 8: Artistic Programming	45-60 minutes	Grid Art with EeeBee Bot
Module 9: Mathematical Int.	30-45 minutes	Math Missions with EeeBee Bot



Scan to Learn More About this Kit

# Basic Graphical Programming for Robotics



Module	Duration	Activity
Module 10: Intro to Visual Prog.	40-45 minutes	Understanding Robots and AI
Module 11: Basic Movement Prog.	40-45 minutes	Underwater Lab - Movement
Module 12: Loop Structures	40-45 minutes	Underwater Lab - Loop
Module 13: Advanced Control	40-45 minutes	Submarine Pilot
Module 14: Transformation Prog.	40-45 minutes	Transforming Elephant
Module 15: Environmental Int.	40-45 minutes	Crossing Underwater Currents
Module 16: Conditional Prog.	40-45 minutes	Underwater Adventure
Module 17: Defense Systems	40-45 minutes	Activating Defense System
Module 18: Advanced Effects	40-45 minutes	Magic of the Robot Beast
Modules 19-20: Complex Int.	2 × 40-45 min.	Atlantis Expedition
Modules 21-22: Resource Mgmt.	2 × 40-45 min.	Artifact Charging
Modules 23-24: Adv. Interaction	2 × 40-45 min.	Underwater Biological Sampling
Modules 25-26: Final Project	2 × 40-45 min.	Underwater Palace

## Learning Outcomes:

Through this integrated curriculum, students will develop:

- 1. Fundamental Programming Concepts:** Students learn both voice-based and visual programming principles, understanding how different programming approaches can achieve similar goals.
- 2. Problem-Solving Skills:** Through progressive challenges in both voice and graphical programming, students develop structured approaches to solving complex problems.
- 3. Creative Expression:** Students learn to express their ideas through multiple programming modalities, enhancing their understanding of human-computer interaction.
- 4. Technical Proficiency:** Students gain practical experience with both voice commands and block-based programming, building a strong foundation for future programming studies.



## Skills Development

### 1. Technical Skills:

- ✦ Master block programming using Scratch 3.0.
- ✦ Learn sensor types and their functions.
- ✦ Develop basic movement control and voice command programming.
- ✦ Explore input-output relationships in robotics.

### 2. Life Skills:

- ✦ Build foundational problem-solving.
- ✦ Develop patience and persistence through debugging.
- ✦ Enhance communication and teamwork.

### 3. Real-World Connections:

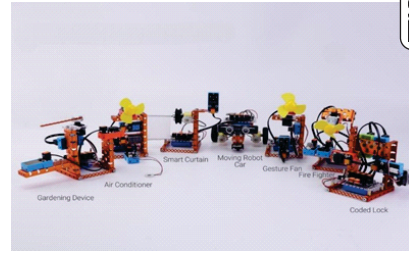
- ✦ Voice assistants like Siri and Alexa.
- ✦ Automation systems (e.g., robots in homes or schools).





## EeBee Bot AIOT Programming Robot 2.0

AI and Robotics combined kit which will teach more advanced concepts of AIOT and programming.



## EeBee Junior Smart Home Training Kit

This kit connects programming to their daily lives while introducing system integration concepts, making abstract ideas concrete through practical applications.

### Programming Languages



Voice Coding (AIOT)



Graphical Programming (Scratch 3.0)

### Curriculum Structure

- **Total Duration:**  
32 lessons
- **Individual Lesson Duration:**  
40-45 minutes

## AI curriculum

Module	Duration	Activity
Lesson 1: Space Travel	40 minutes	Designing the orbit of rockets and satellites
Lesson 2: The Eight Planets	40 minutes	Designing models for the orbits of planets
Lesson 3: Our Earth	40 minutes	Understanding Earth's atmosphere and land formations
Lesson 4: Tidal Locking	40 minutes	Modeling the tidal gravity of Earth-moon system
Lesson 5: Through the Wormhole	40 minutes	Animation of Elephant discovering wormholes
Lesson 6: Alien Baby (Part-1)	40 minutes	Rescuing alien babies from asteroids
Lesson 7: Alien Baby (Part-2)	40 minutes	Building a safe habitat for rescued alien babies
Lesson 8: Interstellar Communication	40 minutes	Dialogue system with aliens
Lesson 9: Alien Monster (Part-1)	40 minutes	Programming alien monster roam and attack
Lesson 10: Alien Monster (Part-2)	40 minutes	Spaceship control with shields and weapons

# Robotics Curriculum

Module	Duration	Activity
Going into the Smart Home	40 minutes	Introduction to smart home concepts and devices
Flashing Indicators	40 minutes	Programming indicators to flash using sensors
Colorful Lights	40 minutes	Creating and controlling colorful lighting effects
Musical Performer	40 minutes	Building a music-playing system using robotics
Master the Color Matching	40 minutes	Designing a robot to match colors intelligently
Smart Fan (1)	40 minutes	Programming a fan to operate automatically
Smart Fan (2)	40 minutes	Enhancing fan functionality with temperature control
Magical Musician	40 minutes	Creating melodies with robotic instruments
Corridor Lamp (1)	40 minutes	Building a motion-activated corridor lamp
Corridor Lamp (2)	40 minutes	Improving the lamp with adjustable brightness
Obedient Gate (1)	40 minutes	Programming a gate to open/close with voice commands
Obedient Gate (2)	40 minutes	Adding security features to the obedient gate
Weather Station	40 minutes	Building a basic weather monitoring station

## Learning Outcomes:

Through this curriculum, students will develop:

- 1. Advanced Control Systems:** Students master sophisticated programming concepts including loops, conditions, and variables through robotics and AI applications.
- 2. Environmental Awareness:** Students learn to program responses to environmental conditions using sensors and automated control systems, understanding how robots interact with their surroundings.
- 3. Scientific Understanding:** Students develop knowledge of planetary systems, space travel, and basic physics through hands-on programming projects.
- 4. System Integration:** Students learn to combine multiple components and sensors to create functioning automated systems, particularly in smart home applications.



## Skills Development

### 1. Technical Skills:

- ✦ Multi-sensor integration for sophisticated behaviors.
- ✦ Basic IoT connectivity and remote control concepts.
- ✦ Advanced home automation programming and system integration.

### 2. Life Skills:

- ✦ Structured problem-solving approaches.
- ✦ Project planning and documentation.
- ✦ Resilience through debugging challenges.

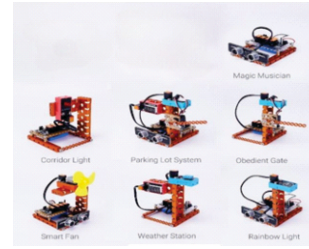
### 3. Real-World Connections:

- ✦ Warehouse robots, cleaning robots.
- ✦ Smart homes and energy-efficient systems.
- ✦ IoT in everyday automation.



## EeeBee AI Builder Kit

With strong foundations in programming and system integration, students are prepared to explore how machines can learn and make decisions.



## EeeBee Senior Smart Home Training Kit

Building on their AI and Robotics understanding, students can now create more advanced and sophisticated home automation systems that incorporate intelligent decision-making.

### Programming Languages



Voice Coding (AIOT)



Graphical Programming (Scratch 3.0)

### Curriculum Structure

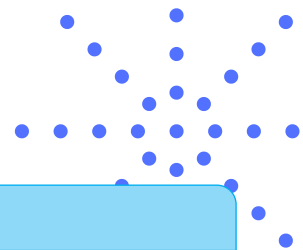
- **Total Duration:**  
34 lessons
- **Individual Lesson Duration:**  
40-45 minutes

## AI curriculum

Module	Duration	Activity
Artificial Intelligence from the Future	40 minutes	Understanding AI Advancements
My AI Assistant	40 minutes	Building a simple AI Assistant
My First Line of Code	40 minutes	Writing your first AI-based program
Athletic Master	40 minutes	Programming AI for Athletic actions
AI, a Good Talker	40 minutes	Creating a conversational AI
To Be Tamed	40 minutes	Training AI models for behavior control
Mathematical Calculations	40 minutes	AI-based solutions for math problems
To Be a Detector	40 minutes	Building AI detection tools
To be an Artist	40 minutes	AI-generated art and creativity
Sound-control Switch	40 minutes	Using AI for sound-based controls



# Robotics Curriculum



Module	Duration	Activity
Gardening Device	90 minutes	Building and programming a gardening robot
Smart Curtain	90 minutes	Designing and automating smart curtains
Fire Fighter	90 minutes	Creating a robot to detect and extinguish fire
Smart Hanger	90 minutes	Developing an intelligent clothes hanger
Moving Robot	45 minutes	Building a robot capable of basic movement
Remote-control Robot	45 minutes	Programming a robot for remote control
Robot with Eyes	45 minutes	Enhancing fan functionality with temperature control
Never-get-lost Robot	45 minutes	Developing a navigation-enabled robot
Air Conditioner	90 minutes	Designing an automated air conditioning system
Coded Lock (A)	90 minutes	Creating a secure lock system
Coded Lock (B)	90 minutes	Enhancing the lock system with advanced features

## Learning Outcomes:

Through this curriculum, students will develop:

- 1. Professional Programming Skills:** Students master Python programming and C++ language fundamentals and apply them to real-world environmental and automation challenges.
- 2. Advanced Sensor Applications:** Students learn to implement complex sensor systems for navigation, obstacle avoidance, and environmental monitoring.
- 3. Artificial Intelligence Fundamentals:** Students understand basic AI concepts and their practical applications through hands-on projects with the AI Builder Kit.
- 4. System Architecture:** Students develop the ability to design and implement comprehensive automated systems, particularly in smart home environments.
- 5. Engineering Methodology:** Students learn systematic approaches to problem-solving, including project planning, testing, and optimization.



## Skills Development

### 1. Technical Skills:

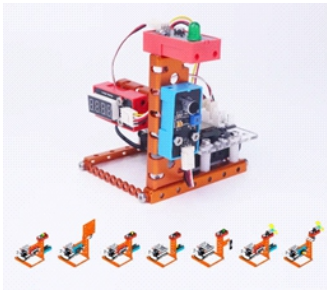
- ✦ Basic AI model development.
- ✦ Advanced automation workflows and control algorithms.
- ✦ Secure communication protocols and data processing.

### 2. Life Skills:

- ✦ Ethical decision-making in AI.
- ✦ Leadership and team coordination.
- ✦ Problem-solving in complex systems.

### 3. Real-World Connections:

- ✦ AI in everyday life (recommendation systems, smart assistants).
- ✦ Smart city technologies and energy management.
- ✦ Advanced IoT systems in industrial settings.



## EeeBee Green world Python Kit

As students mature in their programming journey, they're ready to tackle professional programming tools while addressing real-world environmental challenges.



## EeeBee Mangalyaan Arduino Educational Robotics Kit

As the culminating project, the Mangalyaan Arduino Educational Robot Kit challenges students to apply all their accumulated knowledge to space exploration scenarios.

### Programming Languages



Python



Graphical Programming (Scratch 3.0)



Arduino C & C++

### Curriculum Structure

- **Total Duration:**  
30 lessons
- **Individual Lesson Duration:**  
40-45 minutes

## AI curriculum

Module	Duration	Activity
Python Basics	45 minutes	Syntax, variables, and data types
Control Structures	45 minutes	Loops and conditional statements
Data Structures	45 minutes	Lists, tuples, and dictionaries
Functions and Modules	45 minutes	Defining and reusing functions
File Handling	45 minutes	Reading and writing data from files
Environmental Data Collection	45 minutes	Using sensors to collect real-world data
Data Analysis with Python	45 minutes	Cleaning and analyzing collected data
Data Visualization	45 minutes	Visualizing data with charts and graphs
Advanced Sensor Integration	45 minutes	Combining multiple sensors for complex tasks
Energy Efficiency Simulation	45 minutes	Programming systems to optimize energy use

# Robotics Curriculum

Module	Duration	Activity
Introduction to Arduino	45 minutes	Basics of Arduino and microcontrollers
Setting up Sensors	45 minutes	Configuring input/output devices
Motor Control	45 minutes	Controlling movement with motors
Line-following Robot	45 minutes	Programming robots to follow a path
Obstacle Avoidance	45 minutes	Designing collision-free navigation systems
Advanced Navigation Algorithms	45 minutes	Optimizing pathfinding techniques
Remote Control Systems	45 minutes	Controlling robots via wireless communication
Data Logging with Arduino	45 minutes	Storing and processing sensor data
Space Exploration Programming	45 minutes	Simulating planetary navigation
Mission-critical System Design	45 minutes	Developing reliable control systems
Integration of Multiple Sensors	45 minutes	Building multi-functional robots
Real-time Monitoring	45 minutes	Implementing live data processing
Mangalyaan-inspired Robot Ass.	45 minutes	Building space exploration robots

## Learning Outcomes:

Through this curriculum, students will develop:

- 1. Hardware-Software Integration:** Students master the connection between programming and physical systems through Arduino-based robotics and AI applications with Python.
- 2. Data Processing:** Students learn to collect, analyze, and visualize data from various sensors and systems, developing practical data science skills.
- 3. Energy Management:** Students understand and implement energy-efficient programming solutions through practical projects in environmental monitoring and control.
- 4. Advanced Automation:** Students create sophisticated automated systems that integrate multiple components and respond intelligently to environmental changes.
- 5. Environmental Technology:** Students develop understanding of how programming and technology can address challenges through hands-on projects.



## Skills Development

### 1. Technical Skills:

- ✦ Python programming and data visualization.
- ✦ Advanced Arduino interfacing and microcontroller programming.
- ✦ Complex navigation algorithms and real-time sensor processing.

### 2. Life Skills:

- ✦ Mission planning and risk assessment.
- ✦ Advanced teamwork coordination in engineering projects.
- ✦ Professional documentation and presentation skills.

### 3. Real-World Connections:

- ✦ Space exploration technologies
- ✦ Environmental monitoring systems.
- ✦ Professional-grade robotics and electronics development.

# English Communication Lab

Master the Art of Communication



Focused on developing exceptional communication skills, this program uses the **LSRW (Listening, Speaking, Reading, Writing) approach** to ensure students become confident and proficient in English. The program emphasizes real-world applications, preparing students for both **academic and professional success**.

## Features:

- A comprehensive LSRW-based curriculum that covers all facets of language learning.
- Interactive sessions that emphasize practical communication skills.
- Continuous feedback and assessments to ensure steady progress.

## What's Unique:

- An immersive approach that incorporates real-life scenarios, making learning both relevant and engaging.
- Dedicated support and resources, ensuring that students achieve fluency and confidence



## Outcomes:

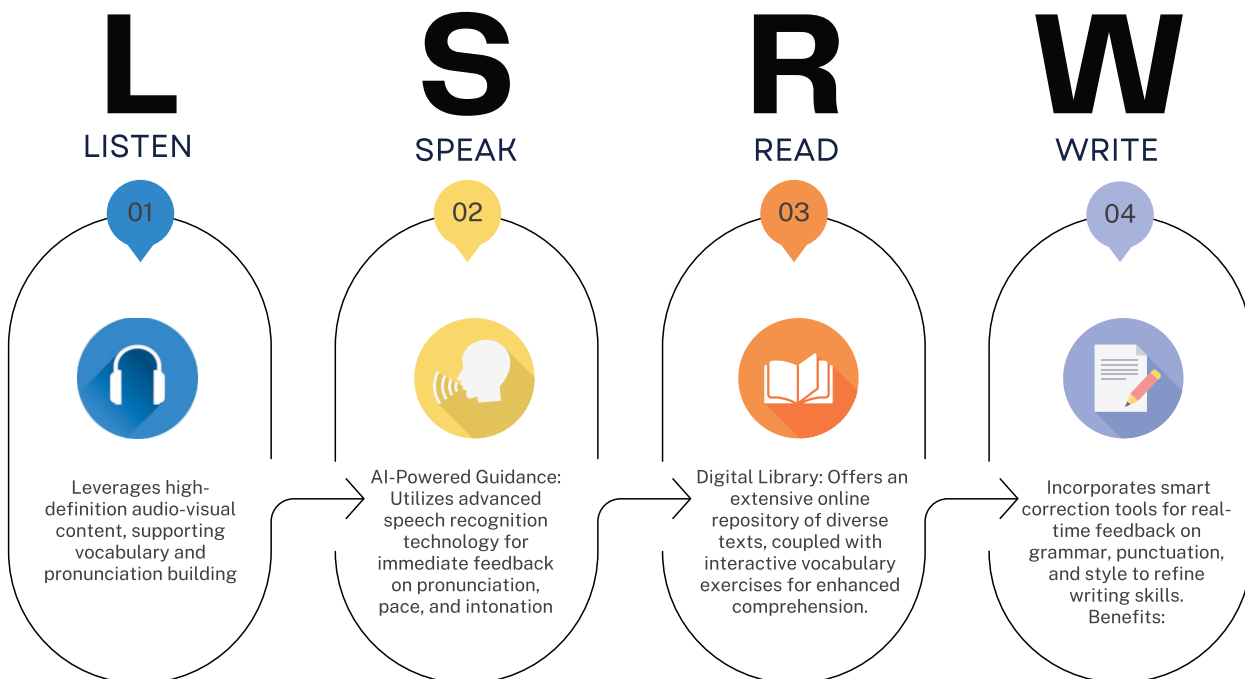
- Significant improvement in all aspects of English communication.
- Increased confidence in public speaking and effective communication.
- Enhanced ability to engage in complex conversations and academic discourse.



## Spears Language Lab App Learning to speak English effortlessly



**Our hybrid LSRW module** harnesses innovative technology to cultivate comprehensive language proficiency. By employing AI-enabled tools and immersive interfaces to enhance Listening, Speaking, Reading, and Writing skills, LSRW creates a rich, engaging, and custom-tailored learning environment to empower every Indian student on their English language journey.



### BENEFITS

- **Hybrid Model of language learning**
- **comprehensive Tech-Enabled Learning:** Seamlessly integrates four core language skills to provide a holistic approach to language learning.
- **Boosts Communication Confidence:** Employs technology to provide interactive practice and immediate personalized feedback, building learners' confidence in English communication.
- **Self-Paced Learning:** AI-adaptive software allows learners to progress at their own pace, fostering individual growth.
- **Academic Enhancement:** Facilitates better understanding and performance in academic subjects by improving English language proficiency through cutting-edge technology.

# Skills Lab

Master the Skills of Tomorrow



Aligned with **NEP 2020**, the Skills Program at the RoboAI Lab offers a diverse range of courses aimed at equipping students with **essential 21st-century skills**. From basic computer literacy to advanced vocational and entrepreneurial skills, this program ensures that students are prepared to meet the challenges of the modern world. **Each course is designed with a focus on practical application, making learning relevant and impactful.**

## Features:

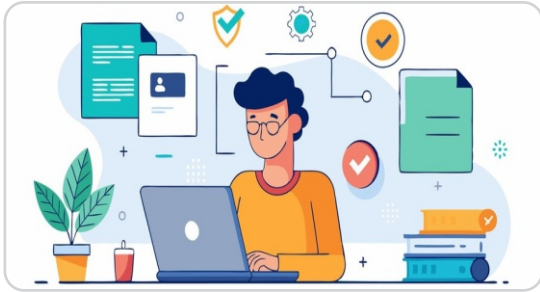
- A broad range of skill-based courses that cover multiple disciplines.
- Courses in basic computing, web design, graphic design, life skills, and more.
- Emphasis on vocational and entrepreneurial skills to foster self-reliance
- A focus on practical applications, ensuring that students gain real-world experience.
- Continuous guidance and support from expert instructors.

## What's Unique:

- A holistic approach that integrates skill development with academic learning, providing a well-rounded education.
- Access to exclusive resources and state-of-the-art facilities, ensuring the best possible learning experience.
- Built for Schools

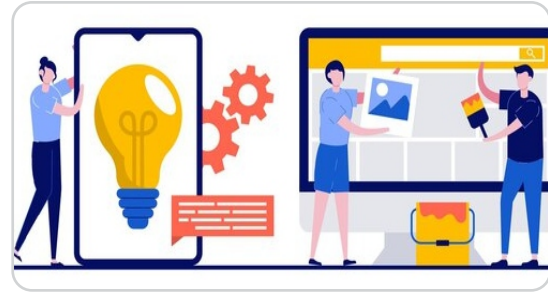
## Outcomes:

- Acquisition of critical life skills that enhance employability.
- Preparation for future challenges through practical, hands-on learning.
- Alignment with NEP 2020, ensuring that students receive a modern, relevant education.
- Holistic development that goes beyond academic learning.



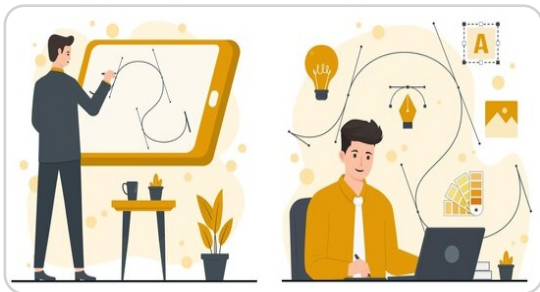
### Basic Computer

A basic computer course covers essential skills like using software, internet browsing and basic troubleshooting.



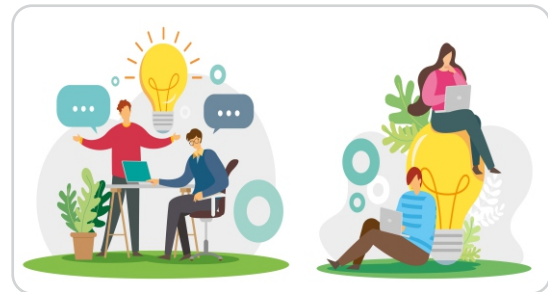
### Web Designing

A Web Designing course teaches creating user-friendly, responsive websites using HTML, CSS, and JavaScript.



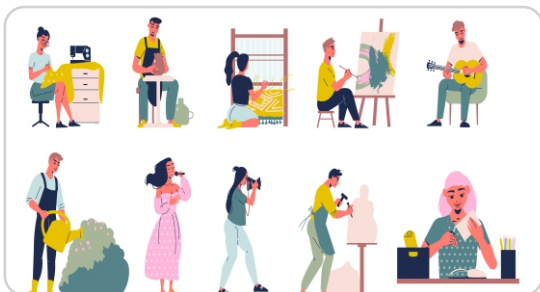
### Graphic Designing

A Graphic Designing course teaches visual communication, design principles, software skills, and creative techniques.



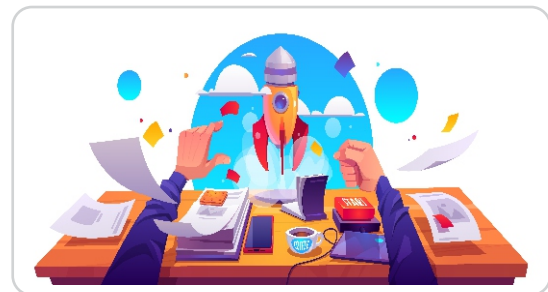
### Life Skills

A Life Skills course empowers individuals with essential abilities like communication, decision-making and problem-solving.



### Vocational Skills

A Vocational Skills course equips learners with practical, job-specific skills for various trades and enhancing employability.



### Entrepreneur Skills

An Entrepreneur Skills course empowers individuals with creativity, leadership and strategic planning.



### Finance Skills

A Finance Skills course teaches budgeting, investing, debt management, and financial planning.



### Personality Development

A Personality Development course enhances self-confidence, communication skills, and leadership abilities.



# Academic Lab

## Unlocking Potential Through AI



The Academic Program within the RoboAI Lab delivers an unparalleled learning experience by integrating **cutting-edge tools like the Gap Analyzer™ with personalized remedial strategies** to address learning gaps. Central to this is bACEline testing, an **AI-powered benchmarking** assessment that not only identifies learning gaps but also provides **actionable insights** for tailored instruction. This comprehensive approach ensures that educators can **set precise goals**, offer **targeted support**, and **track student progress** effectively. From bACEline testing to advanced IIT/JEE coaching, the program is designed to elevate academic performance to the highest levels.

## Features:

- Proprietary Gap Analyzer™ and bACEline Tests for precise identification of learning gaps and strengths.
- Identify previous class/root learning gaps that cause learning loss and pinpoint the exact class where the gap originates from.
- Customized concept and class-wise remedial content based on individual needs.
- NEP 2020 embedded
- Personalized dashboards for Teachers, Students, Parents, and Principal/School Admin
- Detailed reports for every subject, class, and student
- Structured preparation for Olympiads and IIT/JEE, with a focus on both foundational and advanced concepts.
- App and Web-based application for easy access even at home.

## What's Unique:

- One platform for every student, every need, every school.
- Detects Learning Loss in every class, subject and student in school
- Complete integration with C.B.S.E. curriculum
- The Gap Analyzer™ and bACEline Tests are one-of-a-kind tools, backed by years of research, offering a level of insight unmatched by conventional assessment methods.
- Unique Benchmarking Assessment bACEline Testing and School Integrated IIT/JEE courseware.
- Seamless integration with other RoboAI Lab programs, providing a holistic educational approach that goes beyond the classroom.

## Outcomes:

- Daily Diagnostic assessments to address learning gaps and help students achieve current learning goals
- Teacher Empowerment with Assessment and analysis support for all subjects
- Tailored learning experiences that maximize each student's potential.
- Exceptional preparation for competitive exams, setting the foundation for academic excellence.
- Comprehensive support and feedback, ensuring continuous improvement.





## Ensuring A solid Start!

One-time Assessment

Edubull's bACEline testing harnesses the **power of AI** to **identify learning gaps and learning losses** effectively. Unlike traditional assessments that merely establish a benchmark, bACEline testing offers detailed, actionable insights, enabling teachers to understand each **student's unique needs**. This comprehensive approach allows educators to set achievable goals, tailor **instructional strategies**, and provide targeted support, thereby monitoring growth and motivating students to excel. Through thorough analysis, bACEline transforms benchmark assessments into powerful tools for driving student success and fostering academic excellence.

### Structure of Testing:

#### Domains & Grades Tested

- Domains Tested - Mathematics, Science and Language Ability
- For Grades -4th to 10th
- **STEM Focused** testing

#### Duration and Structure

- 60 minutes for each subject
- MCQ-based, testing skill levels and academic competency
- Flexible scheduling

#### Mode of Testing

- Online via school customised app
- Offline through OMR sheets

#### Reporting and Analysis

- Determines Learning Levels and Status
- Gives insights into how a student answers questions
- Subject-related skill insights
- Reports for school administration, each student and every class

### Objectives:



#### Countering learning losses

Identifying learning gaps and weaknesses early in the academic term helps educators address issues before they escalate.



#### National Education Policy 2020

NEP 20 mandates school examinations to track student progress, assess core concepts and higher-order skills, and plan educational improvements, moving beyond rote memorization to real-life application.



#### Determining Learning Goals

Benchmark assessments/ bACEline tests help students define their personal learning goals and path.



#### Engaging all Stakeholders

Baselene Tests help bring parents, teachers and students on the same page about a student's learning pathway.

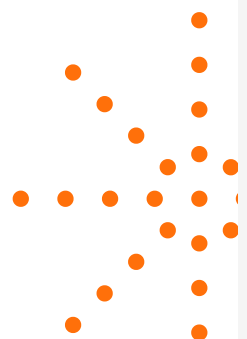
### Sample Reports:



Individual report for Math, Science, English



Detailed Report for Principals/School Administration





## 365 Day Program

### Who Is It for?



Teachers



School Admin



Students



Parents

### About Program:

Gap Analyzer™ is an AI-enabled diagnostic assessment tool integrated with Bloom's Taxonomy which provides actionable analysis of learning. It is a systematic process of assessing the gaps between desired learning outcomes, the current state of knowledge, and the skills of the learner.

#### Identifies 3 types of learning gaps:



#### CURRENT LEARNING GAPS

Concept which the child did not yet understand in the class and is affecting current learning goals of the child



#### ROOT/PREVIOUS LEARNING GAPS

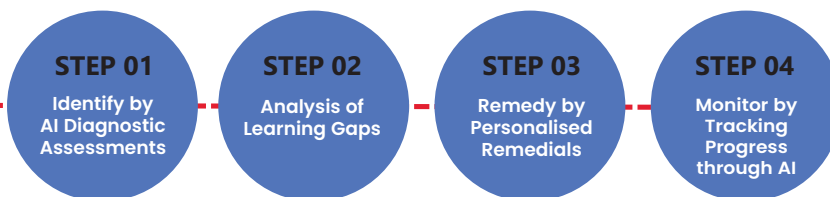
Concepts that the child did not understand in a previous class/standard which is impacting their learning outcomes in the current class



#### SKILL GAPS

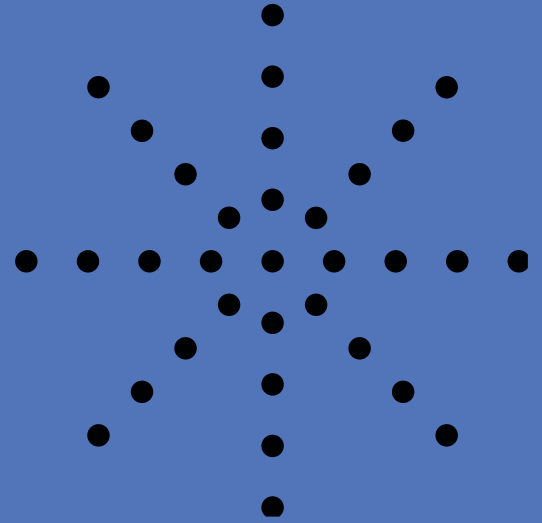
Each child is unique and has unique learning skills as well as pattern of learning which determines their ability to grasp concepts and improve learning outcomes

#### How it works:



#### PROGRAM HIGHLIGHTS:

- Concept and topic-wise ready-made exams for homework.
- Assessments integrated with Bloom's taxonomy.
- Learning levels (L1 - CBSE, L2- Olympiad, L3- Foundational IIT) are made for different types of students.
- Our solutions are developed to digitize schools and transform how assessments are conducted.
- Reduces teacher's workload significantly and is a teacher and student-centered form of assessment that can be made with a single click.
- It finds previous class learning gaps and exact concept weaknesses for every student and subject.
- Provides detailed individual and class-wise analysis reports measuring academic skills, weaknesses, and strengths.
- Measurable and positive impact on overall learning outcomes of students and support for teachers.
- Learning outcomes are more clear and personalized for each student. supporting teachers in teaching and students in achieving those learning outcomes.
- Personalised dashboards to monitor learning and academic growth



+91-9350120746



41,42A Ashoka Park Main,  
New Rohtak Road, New Delhi-110035



[compositeskillslab.com](http://compositeskillslab.com)