

NEWSLETTER

INDUSTRIAL REVOLUTION

AUGUST

2026

JM International School

Welcome to our newsletter on the history of Industrial revolution. From the evolution of Industry 1.0 to the future aspects that we will see in the upcoming Industry 5.0. We will take you on a journey through the fascinating and interesting evolution of machines that started from a basic invention of engines that worked on steam power to the era of fully automated self-capable smart robots.





WHAT IS AN INDUSTRY?

An industry is a group of companies that are related based on their primary business activities. In modern economies, there are dozens of industry classifications. Industry classifications are typically grouped into larger categories called sectors. Individual companies are generally classified into an industry based on their largest sources of revenue. For example, while an automobile manufacturer might have a financing division that contributes 10% to the firm's overall revenues the company would be classified in the automaker industry by most classification systems.

WHAT IS INDUSTRIAL REVOLUTION

The Industrial Revolution was the transition from creating goods by hand to machines to reduce human intervention and automate production. It was started in the 18th century, in Great Britain, where the pace of change appeared to speed up with the production of the first steam engine.

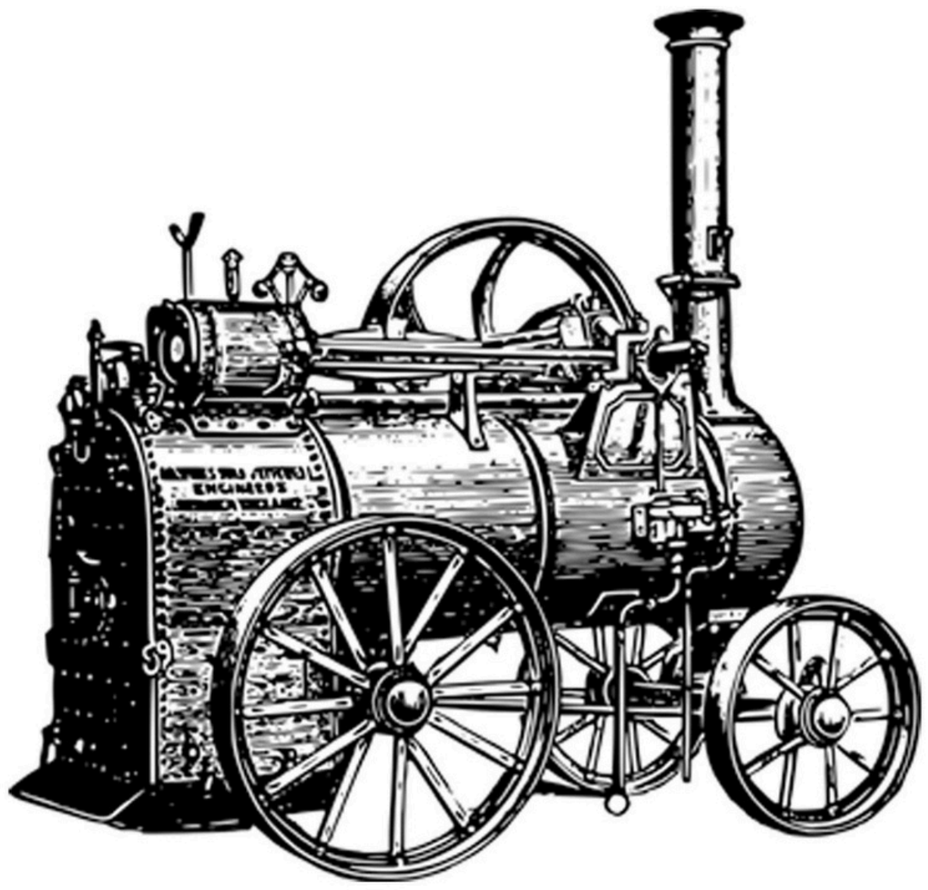


HISTORY OF

INDUSTRIAL REVOLUTION

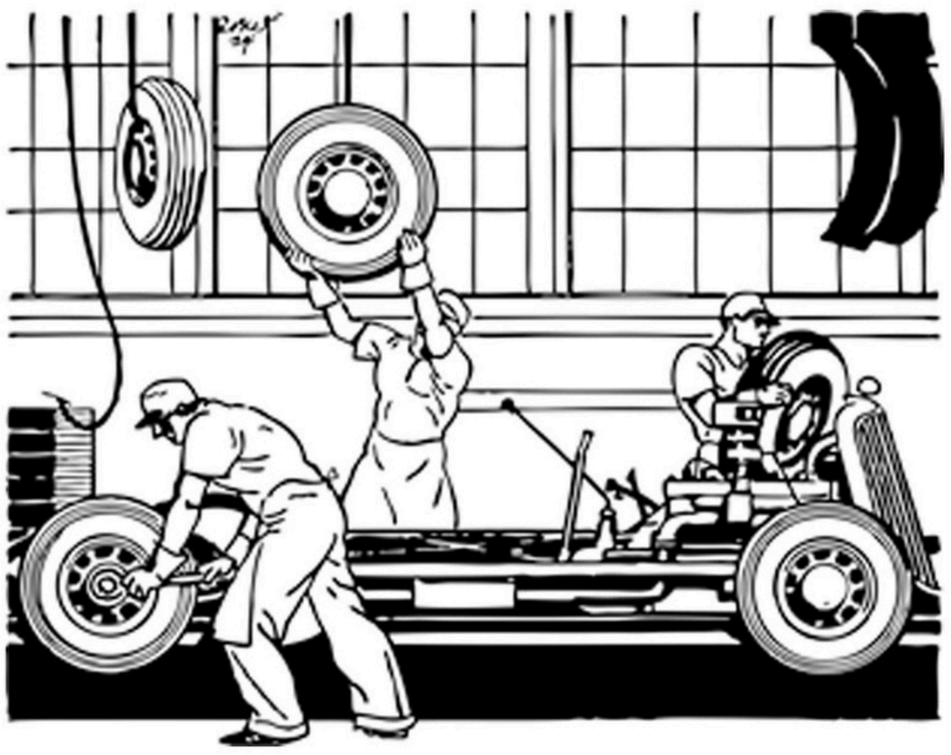
1.0
INDUSTRY

- Began in the 18th Century with the first production of Steam power and mechanization of production.
- Now, instead of using muscles and manpower for producing power for weaving looms in factories, steam engines could be used for power.
- The first Steam powered locomotive was introduced which resulted in the revolution in the locomotive era.



2.0
INDUSTRY

- Began in the 19th Century with the discovery of electricity and assembly-line production.
- Henry Ford (1863-1947) took the idea of mass production from a slaughterhouse in Chicago where he saw how the pigs were hanged on hooks and were slaughtered in a line by the butcher, He used the same concept in the production of automobiles which resulted in becoming significantly faster and at a lower cost.



3.0
INDUSTRY

- Began in the 20th Century.
- Partial automation using memory-programmable controllers and computers started being used in Industrial production.
- We were now able to automate the entire production process that resulted in less human intervention and assistance.



4.0
INDUSTRY

- We are currently implementing Industry 4.0 which is the development of Industry 3.0 to the next level.
- Industry 4.0 is revolutionizing the way companies manufacture, improve, and distribute their products in a smarter way.
- Industries are integrating new technologies, including the Internet of Things (IoT), cloud computing and analytics, Artificial Intelligence (AI) and machine learning into their production facilities and throughout their operations.



- Smart Industries and factories are brought into use. The industrial machines that are used in these factories can predict failures in advance and can take predictive measures for the same, they also include self-organized logistics which allow the machines to communicate with each other and share information.

HOW HAS THE REVOLUTION BENEFITED US?

- Mass production of industry-level appliances has become way simpler in earlier times.
- Less human intervention is required in any of the production factories as the machines are self capable to run day-to-day tasks.

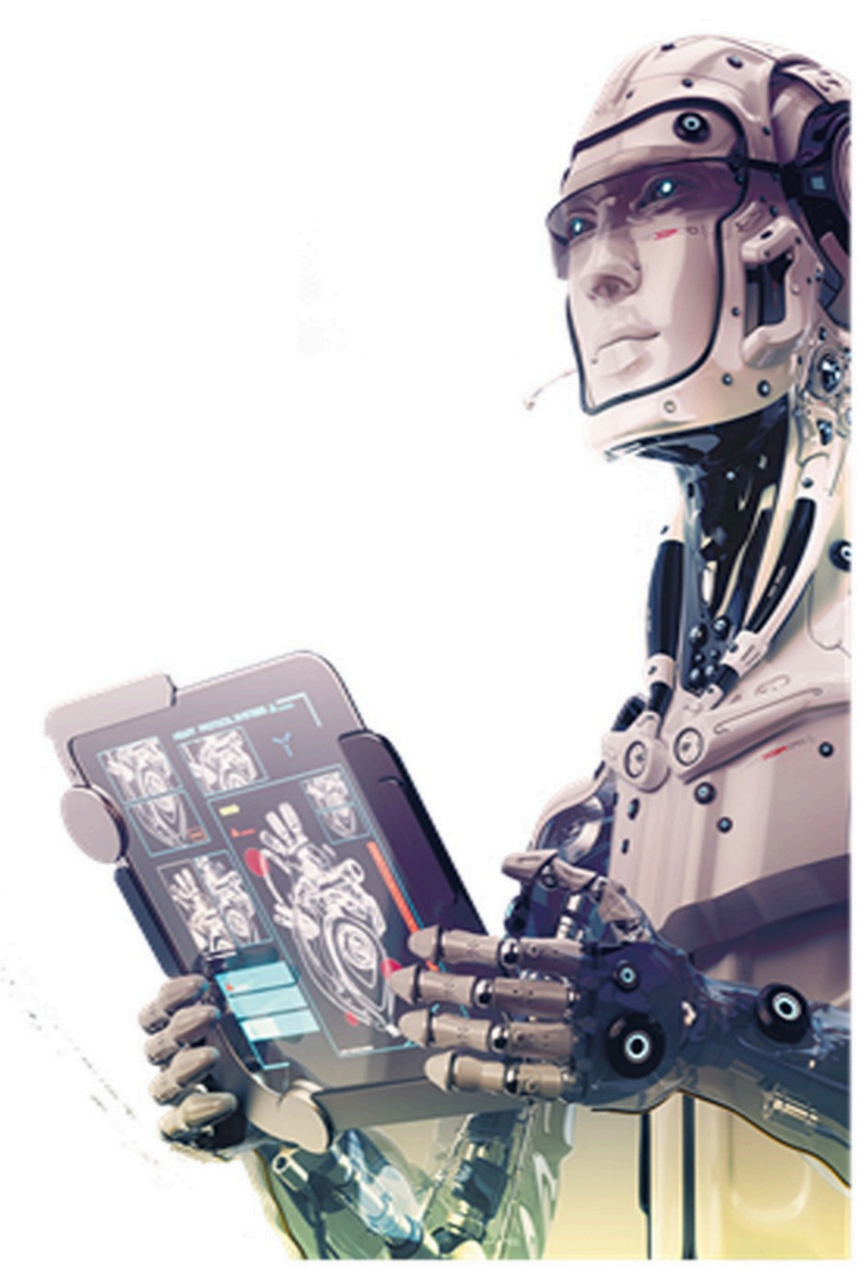


- Less human labour is required to keep a check on the machine's health and age, the machine uses predictive and prescriptive analysis to predict upcoming failures and handle them through pre-fitted smart logistics.
- The process is now much faster, more reliable, and safer as there is no human error that can intervene in the production. The machines work on a pre-set algorithm thus reducing any chances of errors during mass production.



WHAT WILL BE THE FUTURE OF INDUSTRY 4.0 I.E., INDUSTRY 5.0?

- The future of Industry 4.0 will focus on fighting two main concerns - Fighting Global warming and conserving natural resources.
- The Industrial Revolutions of the past brought about the advancements that now allow us to live healthier, longer, and more comfortable lives. But with machines taking over human roles at a rapid pace, previous technological advances have created a fear that humans would be rendered obsolete.
- Sustainability is about elevating human life on this planet and viewing these advances through the lens of how they can help us work more efficiently, protect the climate and support modern life continuously raising the standard of living for those in need.
- Industry 5.0 is human-centric evolution and will focus on man and machines working together. With the use of collaborative robots, workers are free to deliver value added tasks to customers.



ABOUT

STEMROBO TECHNOLOGIES



STEMROBO Technologies Pvt Ltd is an Indian company that provides education and training services in the field of STEM (Science, Technology, Engineering, and Mathematics) and robotics. The company's aim is to promote hands-on learning and innovation among young students by providing them with educational kits, training programs, and workshops.

Stemrobo Technologies Pvt Ltd offers a range of products and services, including robotics kits, coding kits, and educational software. The company's products are designed to be user-friendly and provide a fun and engaging way for students to learn about STEM subjects. In addition to its educational products, Stemrobo Technologies Pvt Ltd also conducts workshops and training programs for students, teachers, and educational institutions. These programs are designed to help participants learn the basics of robotics and coding, and develop their skills in these areas.

Importance of STEM Education for Kids

The term "STEM" typically refers to a group of academic disciplines that are focused on science, technology, engineering, and mathematics. it prepares them for the future by building problem-solving skills, encouraging curiosity and exploration, fostering collaboration and communication skills, and addressing global challenges that require STEM principles for their solution.

FUN FACT

Railway tracks expanded from 150 miles in 1830 to over 20,000 miles by 1850 in Britain.

STEMROBO TECHNOLOGIES

Innovation, Creativity & Learning

STEMROBO provides **'End-To-End Solution to K-12 Schools'** for **'Nurturing Innovation & 21st Century Skills'** among young students of age 6-18 years across the globe. We offer young students an opportunity to explore, experience and bring innovation through a world class **STEAM, Artificial Intelligence, Robotics & Coding** curriculum integrated with our unique & affordable **'Technology Products and Solutions'** delivered in an online or hybrid model; thereby enabling and empowering students to be able to become **Creative - Thinkers and Problem - Solvers.**

Together, let's unlock the potential within each student, ignite a passion for Innovation, Creativity & Learning, and pave the way for a brighter tomorrow.

www.stemrobo.com

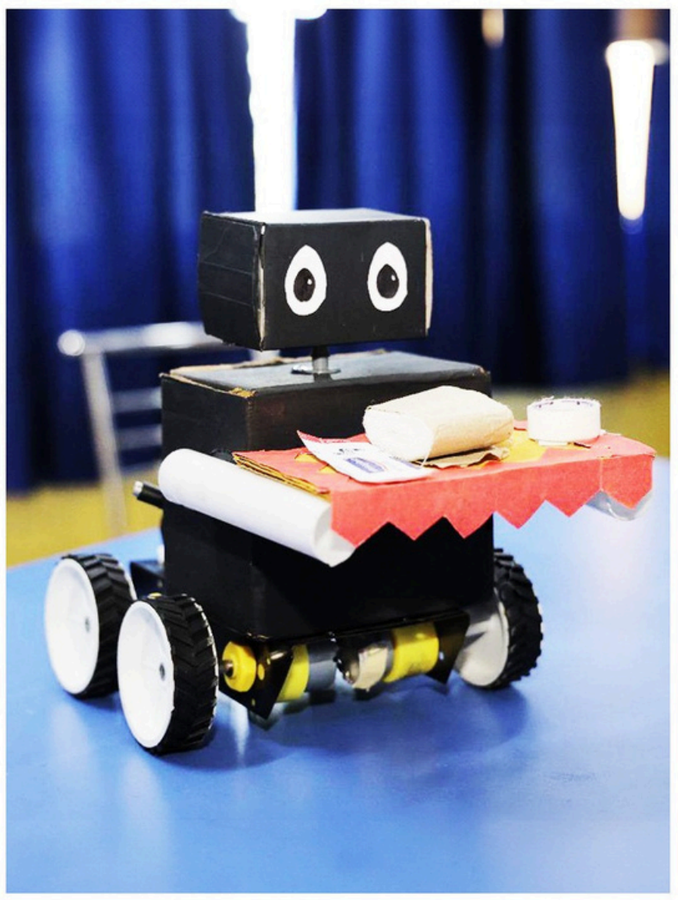
Mission

Our mission is to build an ecosystem focused on leveraging technology in education where **STEAM, Robotics, Coding, Artificial Intelligence & AR/VR** are utilized as crucial tools for kids to become smart in their academics and be able to solve modern world problems.

Vision

The company's vision is to nurture innovation and 21st century skills in K-12 students across the globe and prepare them for the future technological world. We are on a journey which will help every student to elevate core skills like **Logical Thinking, Creativity, Computational Thinking and Problem - Solving.**







About Robotics Lab



The Robotics Lab is a special workspace where students can learn, try new things, and turn their ideas into real working models. It is built to spark creativity and go beyond just memorizing lessons encouraging students to explore modern skills like designing, thinking logically, learning through experience, and understanding artificial intelligence.

The lab is packed with advanced tools and equipment such as 3D printers, robotics kits, and electronic parts, giving students a practical, hands-on way to learn science, technology, engineering, and math (STEM). The main aim is to help students develop strong problem-solving and critical thinking skills from a young age. By supporting experimentation and new ideas, the lab hopes to inspire the next generation of creators and entrepreneurs, getting them ready for future opportunities and helping push India's technology and innovation forward.

FUN FACT

By 1850, Manchester's air pollution was so severe that trees turned black within a few decades.

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GLIMPSE OF ACTIVITIES

Class 1

Students explored basic electronics and creative construction through hands-on activities using the Smart Circuit and Fun Linker Kits. The sessions focused on understanding switches, LEDs, magnetic connections, and creative model building.

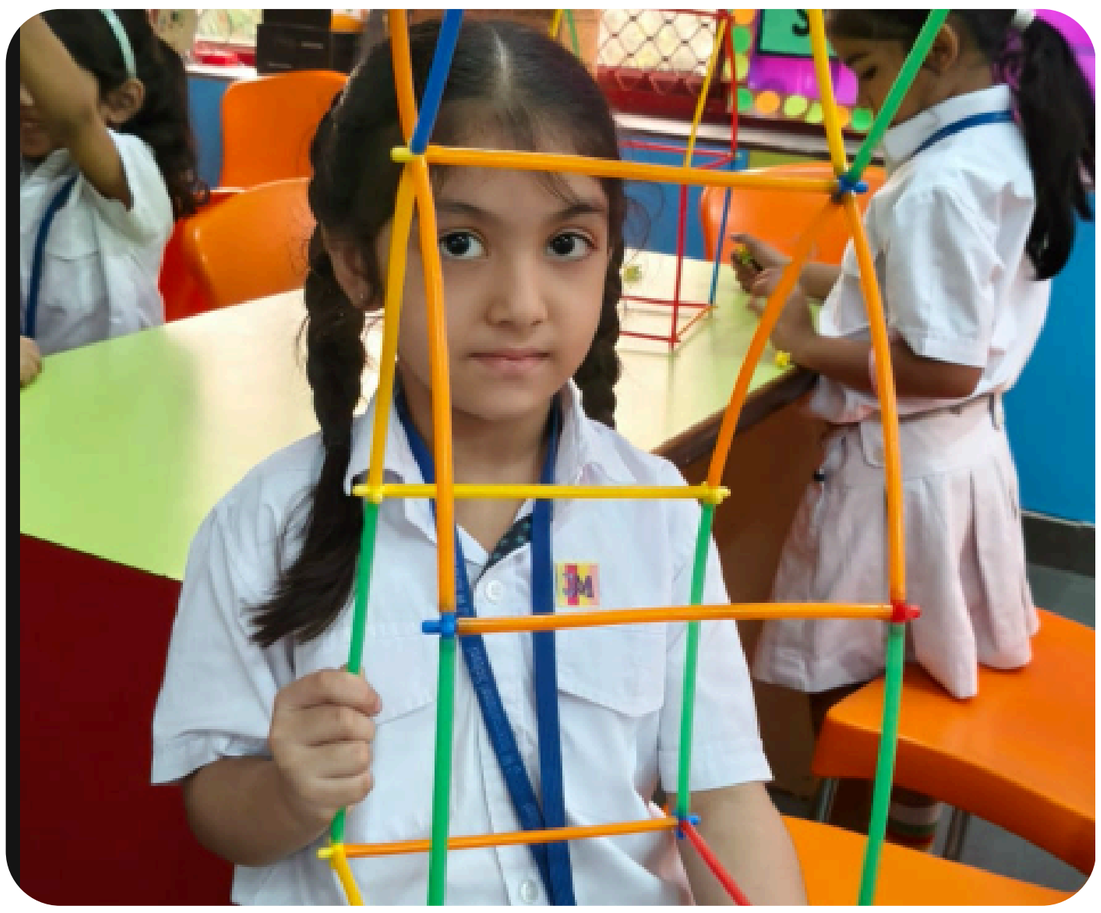


Activities Included:

LED Control by Switch: Students used the Smart Circuit Kit and magnetic board to learn how a switch can control an LED through simple connections.

LANTERN Design: They designed a lantern using Fun Linkers, magic straws, and connectors, developing their creativity and construction skills.

Supermarket: Students created a supermarket model using the Fun Linker Kit and explored basic construction and arrangement skills.







FUN FACT

Industrialization boosted productivity by up to 800%, driving economic growth and raising living standards.

AUGUST 2026

GLIMPSE OF ACTIVITIES

Class 2

Students explored basic electronics and creative model building through hands-on activities using the Smart Circuit, Fun Linker, and Linkage Kits. The sessions focused on understanding light, construction, and mechanical linkages through engaging activities.

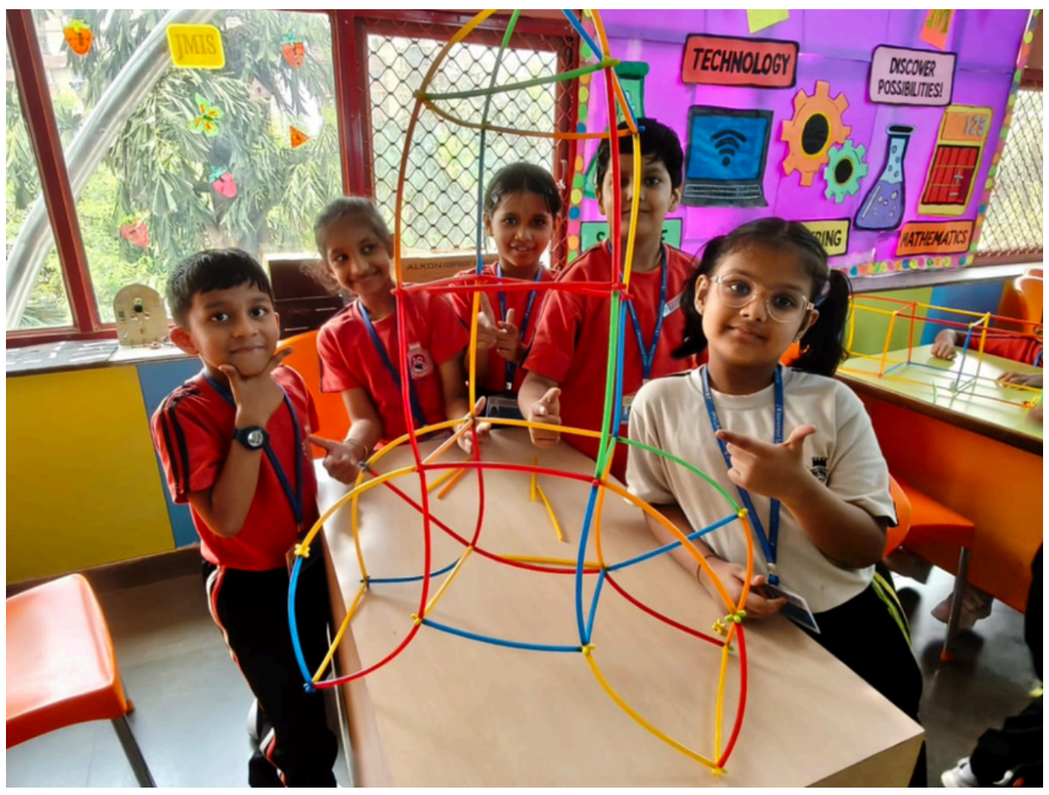


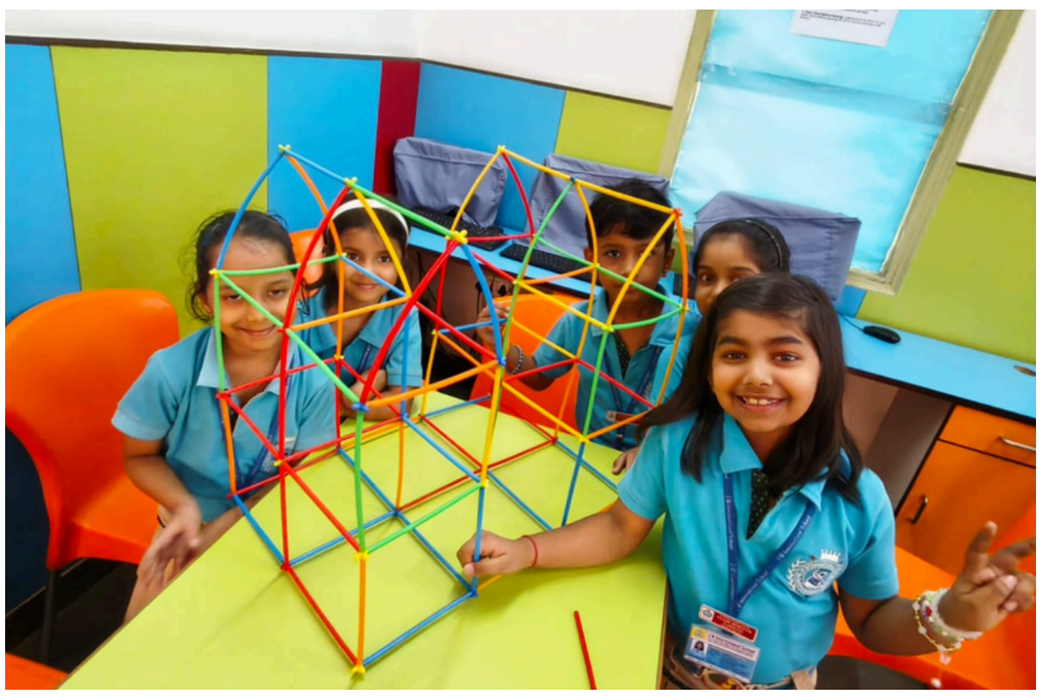
Activities Included:

RGB Light Activity: Students used the Smart Circuit Kit to explore RGB lights and understand basic light and circuit connections.

Rocket: They designed a rocket using the Fun Linker Kit, developing their creativity and construction skills.

Hospital: Students built a hospital model using the Linkage Kit and explored basic mechanical structures through hands-on learning.







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AUGUST 2026

GLIMPSE OF ACTIVITIES

Class 3

Students explored mechanical concepts through hands-on activities using the Discovery Motion Kit. The sessions focused on understanding motion, movement, and basic mechanical structures through engaging activities.



Activities Included:

Basic Car: Students built a basic car and explored how mechanical components work together to produce movement.

Giant Wheel: They constructed a giant wheel and observed how mechanical components create rotational motion.



Waving Robot: They created a waving robot and learned how mechanical components can be used to produce movement.





FUN FACT

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GLIMPSE OF ACTIVITIES

Class 4

Students explored mechanical concepts through hands-on activities using the Discovery Motion Kit. The sessions focused on understanding motion, mechanical mechanisms, and their practical applications through engaging activities.

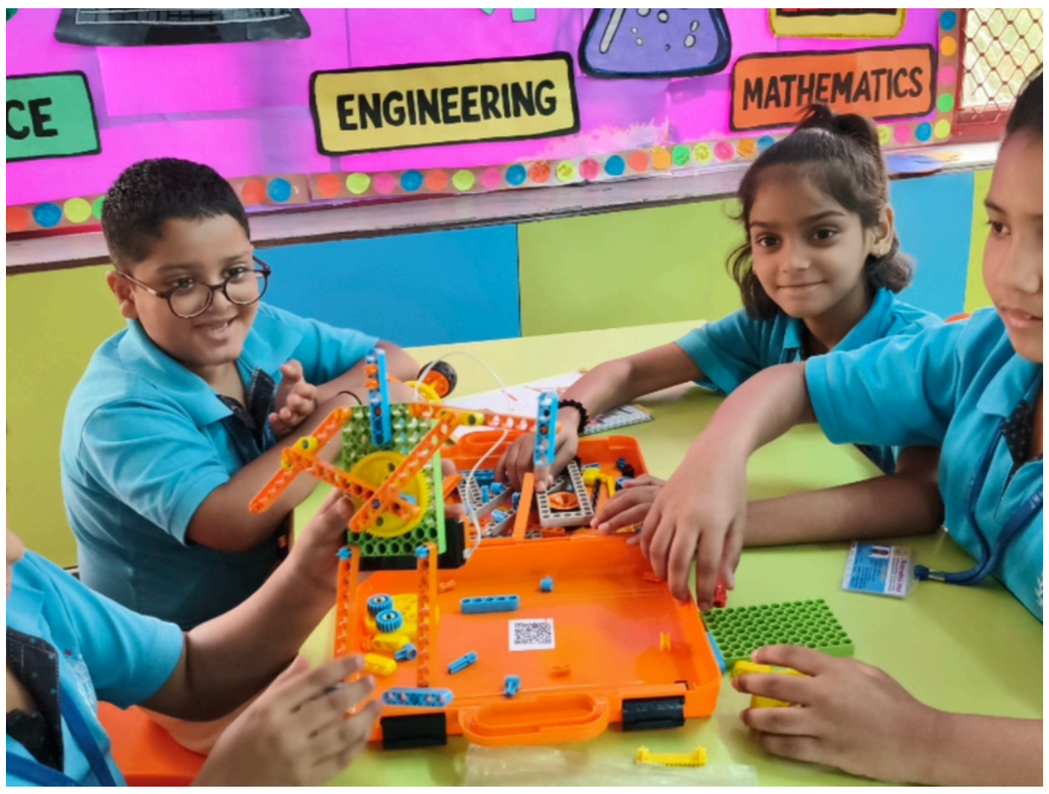
Activities Included:

Giant Wheel: Students built a giant wheel and explored the concept of rotational motion through hands-on learning.

Power Press Machine: They constructed a power press machine and learned how mechanical components work together to produce pressing motion.

Powder Pounding Machine: Students built a powder pounding machine and explored the conversion of motion through a simple mechanical mechanism.









FUN FACT

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GLIMPSE OF ACTIVITIES

Class 5

Students explored mechanical systems and motion through practical model-building activities using the Discovery Motion Kit. The sessions helped them understand how gears and different mechanisms can be used to create and control movement.

Activities Included:

Swing: Students built a swing model and explored the movement and working of its mechanical structure.

Scissors Lift: They assembled a scissors lift model and observed how its mechanical structure produces lifting motion.

Crank and Slider: Students worked with a crank-and-slider mechanism to understand how rotary motion can be converted into linear motion through a working model.









FUN FACT

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GLIMPSE OF ACTIVITIES

Class 6

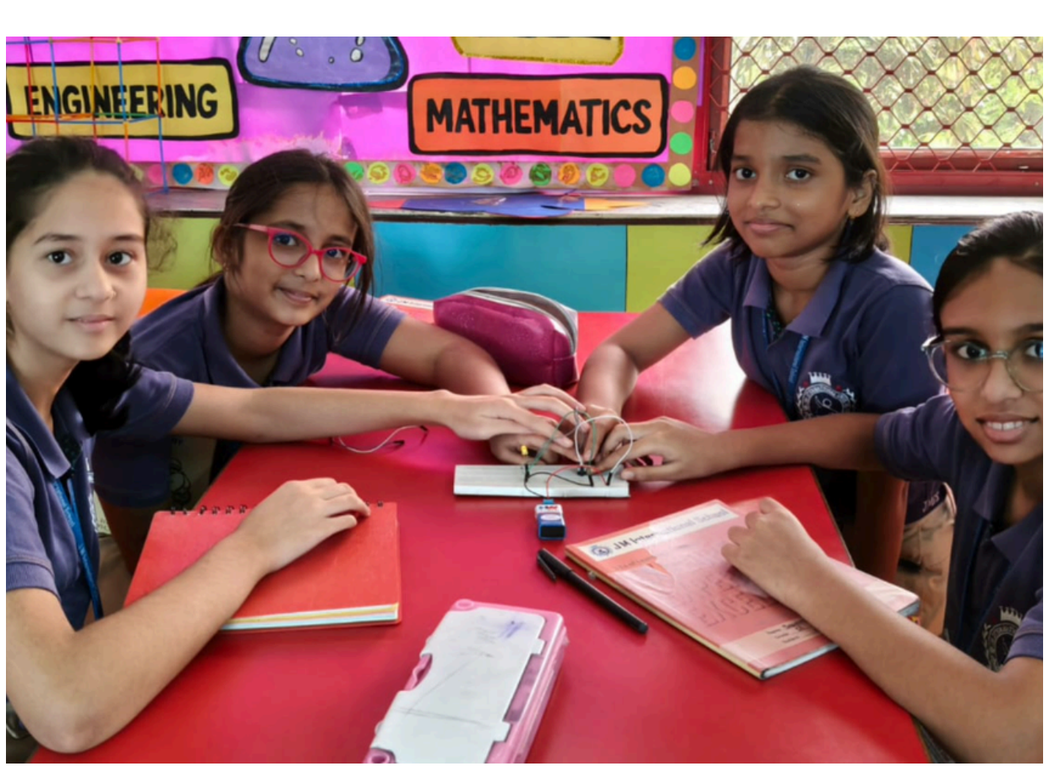
Students explored basic electronics and microcontroller concepts through hands-on activities using the Smart Circuit Kit and Arduino Nano. The sessions focused on building circuits, understanding display components, and learning about the functions of different Arduino pins.

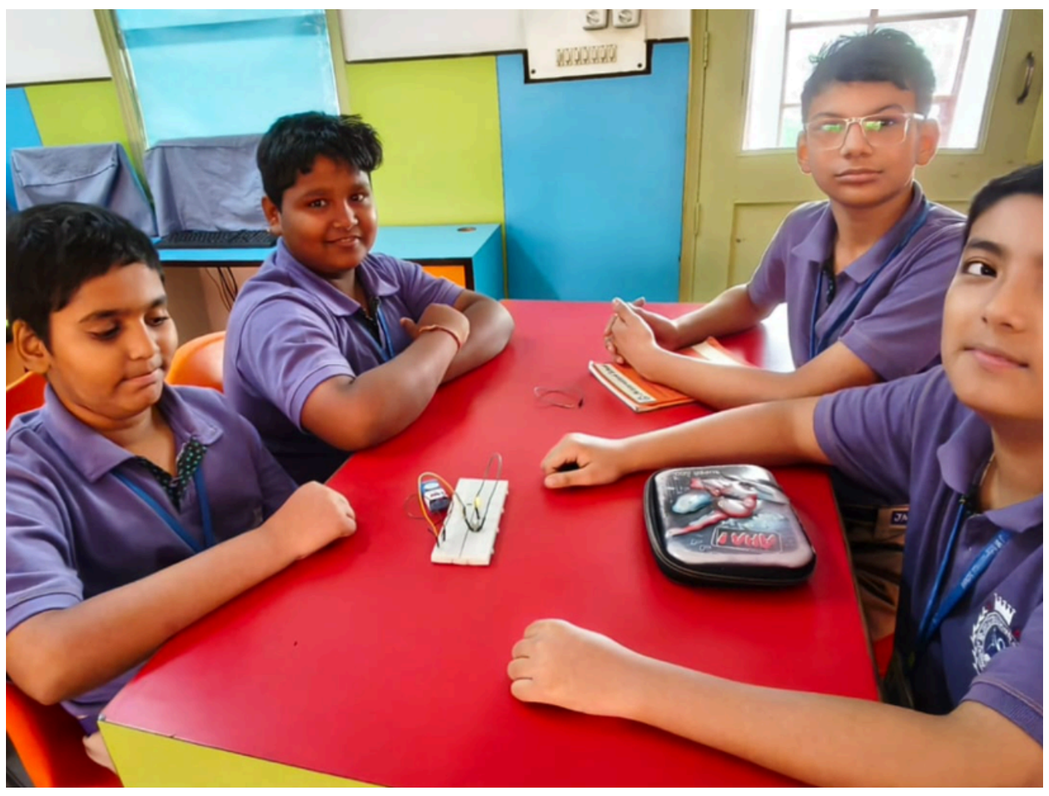
Activities Included:

RGB Mood Light: Students assembled an RGB light circuit on a breadboard using a battery and jumper wires and explored different lighting effects.

7-Segment Display: They explored the structure, connections, and working of a 7-segment display through practical demonstration.

Introduction to Arduino Nano: Students were introduced to the Arduino Nano and learned about its different pins and their respective uses.









FUN FACT

Industrialization boosted productivity by up to 800%, driving economic growth and raising living standards.

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GLIMPSE OF ACTIVITIES

Class 7

Students developed their understanding of Arduino programming and circuit control through practical activities using the Arduino Nano. The sessions focused on coding, digital displays, switch-based control, and automated lighting systems.

Activities Included:

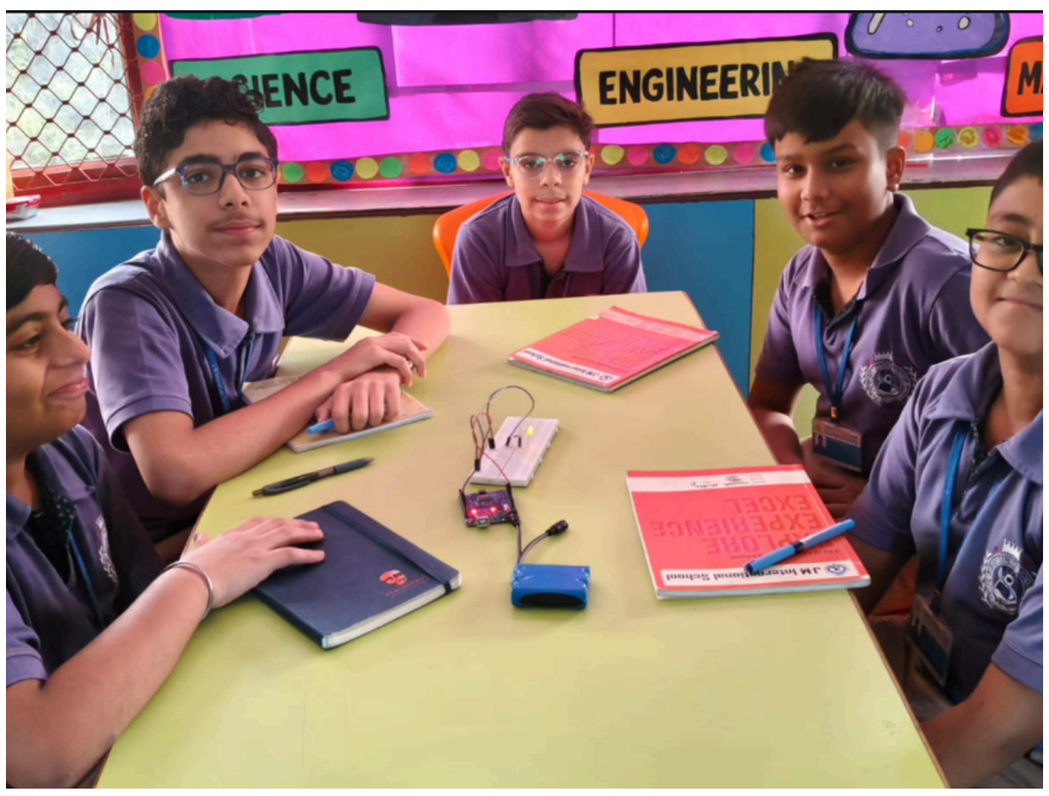
Arduino IDE: Students were introduced to the Arduino IDE software and learned the basics of writing and uploading code.

7-Segment Display: They interfaced a 7-segment display with Arduino and implemented a countdown sequence to understand digital display control.

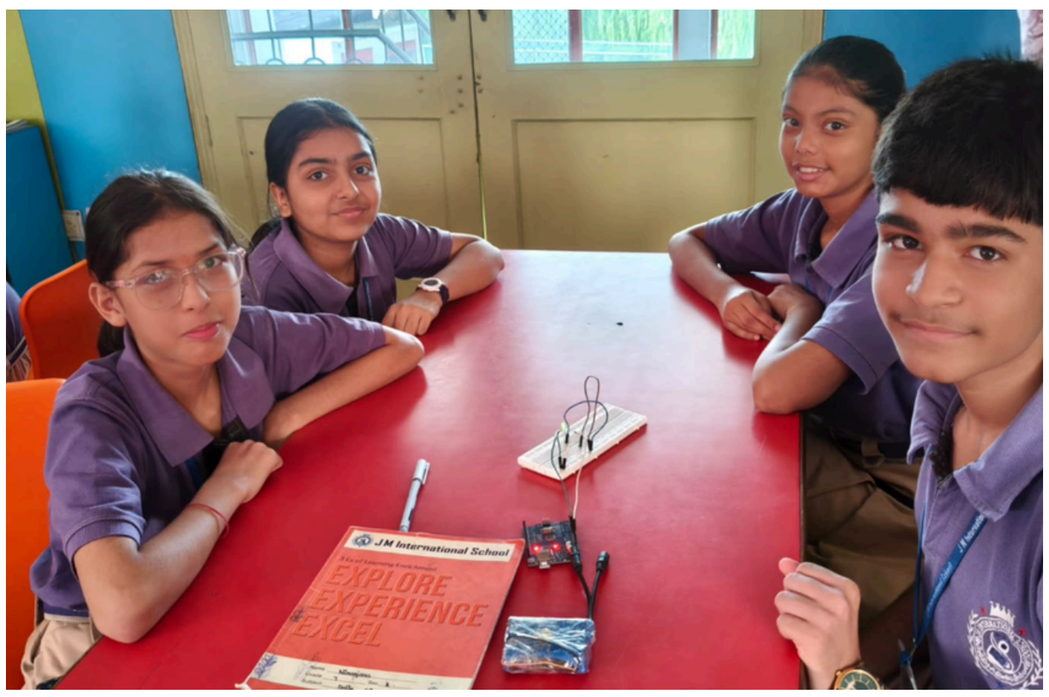
Switch with Arduino: Students explored how a switch works with Arduino and learned to use it as an input for controlling a circuit.

Automatic Street Light: They built an automatic street light using Arduino Nano and explored how lighting can be controlled based on surrounding light conditions.









FUN FACT

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GLIMPSE OF ACTIVITIES

Class 8

Students strengthened their understanding of Arduino programming and automation through hands-on activities using the Arduino Nano. The sessions focused on coding, sensor-based control, and understanding Arduino pin specifications through practical demonstrations.

Activities Included:

Introduction to Arduino IDE: Students explored the Arduino IDE software and learned the basics of writing and uploading code.

Automatic Street Light: They created an automatic street light using an LDR and Arduino while learning how to implement the required code through the Arduino IDE.

Alternate LED Flashing: Students programmed two LEDs to flash alternately using the Arduino Nano and used the activity to understand different pin specifications and their functions.









FUN FACT

Industrialization boosted productivity by up to 800%, driving economic growth and raising living standards.

GLIMPSE OF PROJECTS

List of Projects

- Basic gear car.
- Giant Wheel .
- Waving Robot.
- 7-segment display using Arduino.
- Automatic Street Light.
- Mood Light.









FUN FACT

Integration of renewable energy sources in industries has lowered carbon emissions by an average of 20% in the last decade.



THANK YOU

CONTACT US

STEMROBO Technologies Ltd
B-32 Sector-63, Noida-201301
1800 120 500 400
Visit our website– www.stemrobo.com