

PM SHRI KENDRIYA VIDYALAYA PASCHIM VIHAR

ATAL TINKERING LAB ACTIVITIES

The Atal Tinkering Lab (ATL) at **PM SHRI Kendriya Vidyalaya Paschim Vihar** provides students with opportunities to explore Science, Technology, Engineering and Mathematics (STEM) through hands-on learning and innovation-based activities. Various ATL activities were conducted to develop students' creativity, problem-solving ability, scientific temperament and practical skills.

The activities encouraged students to learn by doing and helped them understand the practical applications of concepts taught in the classroom.

Activities Conducted

1. 3D Model Designing Using 3D Printer

Students were introduced to the process of designing and fabricating three-dimensional objects using a **3D printer**. They learned about the basic process of creating a digital model and converting it into a physical object through additive manufacturing. The activity helped students understand concepts such as 3D modelling, slicing, layer-by-layer printing and the practical applications of 3D printing in education, engineering and product development.

Learning Outcome:

Students developed an understanding of modern manufacturing technology and learned how digital designs can be transformed into physical prototypes.



2. Demonstration of Drone

A demonstration of a **drone** was conducted to introduce students to unmanned aerial technology. Students observed the functioning and movement of the drone and learned about its major components, including motors, propellers, battery, controller and sensors.

The demonstration also introduced students to applications of drones in photography, agriculture, surveillance, disaster management, delivery services and other fields.

Learning Outcome:

Students gained a basic understanding of drone technology, flight control and its real-world applications.



3. View through Telescope

Students were given an opportunity to observe distant objects through a **telescope**. The activity helped them understand the basic principles of optical instruments and astronomical observation.

Students learned how telescopes help in observing distant celestial and terrestrial objects and developed curiosity about astronomy and space science.

Learning Outcome:

The activity encouraged students to explore astronomy and understand the importance of optical instruments in scientific observation.



4. Electric Circuit Connection using Breadboard

Students performed practical activities related to **electric circuit connections using a breadboard**. They learned how electronic components can be connected without soldering and experimented with simple circuits.

Students were introduced to components such as batteries, LEDs, resistors, connecting wires and switches. They learned the importance of correct polarity and proper circuit connections.

Learning Outcome:

Students developed basic practical skills in electronics and understood the functioning of simple electrical circuits.



5. Making a Small Electric Vacuum Cleaner – Mega Tinkering Day

As part of the **Mega Tinkering Day**, students participated in an activity to make a **small electric vacuum cleaner**. The activity involved using simple materials and electronic components to develop a functional working model.

Students learned how a small DC motor can be used to create suction and how different components can be combined to develop a useful device. The activity promoted creativity, teamwork and problem-solving.

Learning Outcome:

Students understood the practical application of motors and basic electrical components while developing their own working model.





Certificate of Appreciation

This certificate of appreciation is presented to
PM SHRI KENDRIYA VIDYALAYA PASCHIM VIHAR

for participating in Mega Tinkering Day on 12th August 2025.
We thank you for your enthusiastic participation in the celebration
of the spirit of tinkering and scientific curiosity
among our students.


Deepali Upadhyay
Program Lead
Atal Innovation Mission

Overall Learning Outcomes

The ATL activities provided students with valuable experiential learning opportunities. Through these activities, students:

- Developed practical knowledge of electronics and electrical circuits.
- Gained exposure to 3D printing and digital fabrication.
- Learned the basic principles and applications of drone technology.
- Improved their ability to design, build and test working models.
- Enhanced creativity, teamwork and problem-solving skills.
- Understood the practical relevance of STEM concepts in everyday life.

Conclusion

Under the PM SHRI scheme different Atal Tinkering Lab activities conducted at **PM SHRI Kendriya Vidyalaya Paschim Vihar** provided students with an enriching platform for experiential and activity-based learning.

Such activities help students move beyond theoretical learning and encourage them to **imagine, design, experiment, innovate and create**. The ATL activities plays an important role in nurturing young innovators and developing the scientific temperament required for the future.