



ATAL

TINKERING LAB



DELHI PUBLIC SCHOOL

GUIDELINES FOR ATAL TINKERING LAB

Apprehending the requisite to generate a scientific disposition and nurture the essence of inquisitiveness and innovation among young minds, the Government of India has setup Atal Tinkering Laboratories (ATL) under the Atal Innovation Mission (AIM) at NITI Aayog. ATL is a work space where young minds can lend contour to their thoughts through hands on do-it-yourself (DIY) approach and thereby acquire innovation skills. The resolve behind this substantial intention is to engender a group of 'Neoteric Innovators'.

Fully equipped with the state of art paraphernalia, the ATL will be core for bringing achievable ideas to realization using a cross curricular approach. It would provide a constructive platform for innovative research.

THE LAB OBJECTIVE

The core intention of the lab is to nurture inquisitiveness, ingenuity and resourcefulness in the young generation and instil talents such as design mind-set, computational intellect, adaptive erudition, physical computing etc. Young children will get an opportunity to deal with DIY tools and paraphernalia to understand innumerable aspects of STEAM (Science, Technology, Engineering, Art and Math).

The lab will

- ⌘ Provide an accessible space to disseminate and display STEAM education and also create an opportunity to significantly improve context-based STEAM teaching
- ⌘ Define and supplement topics for further education and training integrated in the curriculum
- ⌘ Develop and Implement innovative programs in partnership with community , industry, educators and expert faculty thus generating the vital link for significant inventiveness

- ✂ Cater access to enhanced communication and experimentation capability
- ✂ Generate a source of Continuous Professional Development for educators

THE IMPACT OF ATL ON ITS LEGATEES

SCHOOL -

- ✓ Construct research platforms wherein the students, the scientists, the industry and the community interact and contribute substantially to each other
- ✓ Generate opportunities for inquisitive, scientific and innovative temperament
- ✓ Open new avenues in associated vocations

STUDENTS -

- ✓ Augment academic outcome by providing space for investigatory endeavours
- ✓ Develop a disciplined approach towards utilizing the STEM concept in an integrated manner

TEACHERS -

- ✓ Contribute towards continuous professional development
- ✓ Provide opportunity to become STEM curriculum experts
- ✓ Disseminate knowledge and resources from STEM education

OPERATIONAL PROCEDURE OF ATL

- ✓ The Lab should be introduced to the local schools by organising special events.
- ✓ All experimentation to be conducted under the guidance of the ATL Advisory Board

- ✓ During the working hours, specific time periods to be allocated in grades VI to XII (from the host school) to introduce the concept of tinkering laboratories and allow students to experiment on projects approved by the advisory board.
- ✓ ATL activities for selected projects to be conducted during Wednesday club, Thursday Activity, Assembly periods and on Saturdays.
- ✓ Students from other local schools as well as the host school can experiment and tinker after the working hours of the school.
- ✓ On Saturdays the lab is made available for all during the approved working hours.

REPORTING SCHEDULE

- ∞ The advisory body shall meet thrice in a year to plan the agenda for the session and to compile its report for submission to the AIM Directorate.
- ∞ Meetings to be held on the first Saturday of April, September and March
- ∞ The advisory body of the ATL shall upload the following in the prescribed proforma, to Atal Innovation Mission, NITI Aayog at the end of each financial year as well as at the time of seeking further installments of the grant,
 - 1) annual implementation report providing information on the activities conducted and
 - 2) Utilization Certificate of the GOI Grant,
- ∞ The lab I/C shall maintain separate accounts for the grant and contributions received from other sources. The funds released should be kept in a bank account earning interest; the interest earned should be reported to the AIM, NITI Aayog and the same will be treated as a credit to the organization and will be adjusted towards further installments of the grant, if any.

ACTIVITIES TO BE CONDUCTED UNDER THE ATL

In order to foster ingenuity among students, the following activities are to be conducted in the ATL:

1. Monthly programs to teach and explain students about different concepts – ranging from ideation, design, proto-typing, networking to physical computing.
2. Display of work done by student groups selected for working on a pertinent theme at the end of the session, amalgamating the *STEAM CONCEPT* during Thursday activity periods in the month of February
3. Science club / Electronic club to prepare models / presentations on an identified theme in the month of December
4. Popular STEM and entrepreneurship talk by reputed speakers / eminent faculty from diverse fields to be organised in both the semesters.
5. Periodic screening of STEM films
6. Host a regional / national level competition (Robo fest etc).
7. Summer Workshops on problem solving, designing and fabrication of products.

THE LAY OUT

ATL would be a hub for Project-Based Learning and Performance-Based Assessment of students thus the space would be an engaging and stimulating arena.

The lab has the following features

- ⌘ An interdisciplinary cum multidisciplinary teaching area cum a laboratory where experiential learning shall take place
- ⌘ Flexibility of Design

- ✓ table top work shelf for small groups with both a white board and soft board, computer with internet facility and all the other necessary paraphernalia for experimentation
- ✓ common instrumentation on a central work shelf
- ✓ teaching area to equipped with enhanced communication capability for interactive online sessions with proficient faculty appropriate storage area

ATL ADVISORY BOARD

	DPS, LUDHIANA
Chairperson	Ms. Balmit Kaur
Teacher I/c _Convener	Ms. Jasmeet Kaur
Representative from local industry/community/young innovator/academia/alumni	<ul style="list-style-type: none"> ✓ Dr. Joginder Singh (Retd Professor and Head Dept. of Math, Stat and Physics, PAU) ✓ Dr. Arvind Dhingra Assistant Professor, Guru Nanak Dev Engineering College, Ludhiana.
Parents of school students	<ul style="list-style-type: none"> ✓ Mr. Harinder Sehra (B.E. Electronics instrumentation, MBA) ✓ Dr. Anil Sood (Head - Agro ecosystem and crop modelling division, Punjab Remote Sensing Centre, PAU)
Mentor	<ul style="list-style-type: none"> ✓ Mr. Munsih Jindal Founder & CEO - Hover Robotix Founding President - MENTORx

ANNUAL REPORT FOR ATL

⌘ EVENTS & TRAININGS

- ✓ ATL Community Day organized in the month of April
- ✓ Tinkerfest - A workshop for unleashing the entrepreneurship and inventiveness of budding scientists in month of July
- ✓ Srjna Teach Fest for teachers training in month of July
- ✓ Advance level teachers Training by Srjna in the month of October
- ✓ Srjna Teachfest in month of March

∞ PROJECTS PILOTED IN THE LAB

- ✓ *Automatic Attendance System*
- ✓ *Speech Assistive Device*
- ✓ *Mall Parking System*
- ✓ *Electronic Dice*
- ✓ *Border Communication System*
- ✓ *Car Seat Belt connection with Ignition*
- ✓ *Water Level Indication System*
- ✓ *Line following Vehicle*
- ✓ *Spy Drone*
- ✓ *Coin Sorter*
- ✓ *Kitchen Gas leakage Detector*
- ✓ *Garbage Collector*
- ✓ *Automatic Bicycle lock*
- ✓ *Automatic Home security System*
- ✓ *Electricity Generation using Bicycle Generator*
- ✓ *Traffic light project*
- ✓ *Street Light*
- ✓ *LED Lamp*
- ✓ *Unique Identification System*
- ✓ *Generator*
- ✓ *Magazine holder*
- ✓ *Two minute Timer Lamp*
- ✓ *Automatic Door Bell with Object Detection*
- ✓ *Parking Indicator*
- ✓ *Sound Lock*

- ✓ *Gesture controlled wheel chair*
- ✓ *Shower Regulator*

§ OUR ACCOMPLISHMENTS

- ✓ *Automatic Attendance System* designed by students of Class XII was represented at the *National Level CBSE Science Exhibition*
- ✓ The *Speech Assistive Device* designed by Gurkirat Singh of class VIII was adjudged as the winner in the Beginner's category (Classes VI- VIII) in *Srjna Impact - 2019; Project of the Year*.
- ✓ Received the *Stem Quiz School of the Month Award* in the "*STEM Q OCT 2019*"
- ✓ Shortlisted amongst top 100 schools at *National Level* in the *ATL Water Challenge* organized by Scrap Labs.