सत्यमेव जयते
NITI Aayog

ATAL INNOVATION MISSION

ATL MANUAL

Guidelines for setting up **Tinkering Labs**

2026

FRONTIER REGION PROGRAM



Guidelines for setting up of Tinkering Laboratories under Atal Innovation Mission 2.0 –

Frontier Region Program

‘Atal Tinkering Laboratories’

Government of India, NITI Aayog

Atal Innovation Mission

April 2026

NOTE

Atal Innovation Mission (AIM) is a flagship initiative of Government of India, that promotes innovation and entrepreneurship nationwide by building a comprehensive innovation pipeline. This includes 10,000 Atal Tinkering Labs (ATLs) in schools that nurture curiosity and problem-solving among students from Classes 6 to 12, along with 81 Atal Incubation Centres (AICs), 20 Atal Community Innovation Centres (ACICs), and more than 50 challenges under the Atal New India Challenge (ANIC) to support startups and ecosystem innovation. All the above initiative were taken under AIM 1.0.

AIM has launched Frontier Region Program under AIM 2.0, which seeks to strengthen innovation ecosystems across India's border and aspirational regions by developing customised innovation and entrepreneurship templates for frontier regions such as Jammu & Kashmir, Ladakh, the North Eastern States, and Aspirational Districts and Blocks. As part of this effort, 2,500 new Atal Tinkering Labs are proposed to be established across these regions to expand access to innovation opportunities for school students. Out of these, 500 ATLs will be established in J&K.

The initiative aims to foster curiosity, creativity, and imagination among young minds and inculcating 21st century skills such as Internet of Things, 3D printing, rapid prototyping tools, robotics and miniaturized electronics. AIM is committed to take innovation to the last mile. Jammu & Kashmir, with its immense talent and unique potential, is at the heart of AIM's Frontier Region Program. The collaboration between schools, universities, and incubators here will become a model for the rest of the country.

This manual presents a customised template for setting up 500 ATLs in J&K incorporating modified guidelines, selection criteria, and the applicable terms and conditions for the establishment of ATLs. It also includes enhanced equipment list aligned with current requirements and evolving needs. The document further includes sample application form for eligible schools applying to establish ATLs. The provisions have been structured to ensure clarity, consistency, and ease of implementation across all stages.

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1 GUIDELINES FOR SETTING UP OF ATL

GUIDELINES FOR SETTING UP OF ATAL TINKERING LABORATORIES (ATL)

1. Background

1.1 The Government of India has setup the Atal Innovation Mission (AIM) at NITI Aayog. Realising the need to create scientific temper and cultivate the spirit of curiosity and innovation among young minds, AIM proposes to support establishment of a network of Atal Tinkering Laboratories (ATL) in India. ATL is a work space where young minds can give shape to their ideas through hands on do-it-yourself mode and learn / develop innovation skills. The vision is to *'Cultivate 1 Million children in India as Neoteric[1] Innovators'.*

2. Objectives

2.1 The objective of this scheme is to foster curiosity, creativity and imagination in young minds and inculcate skills such as design mind-set, computational thinking, adaptive learning, physical computing, rapid calculations, measurements etc. Young children will get a chance to work with tools and equipment to understand what, how and why aspects of STEM (Science, Technology, Engineering and Math).

3. Features of Scheme

3.1 ATLs can be established in schools (minimum Grade VI – X) managed by State/Central Government, Local body (Municipality / Nagar Nigam), Private trusts/ society or Tribal/Social welfare department etc.

4. Funding Support

4.1 The applicant schools would be provided financial support in the form of Grant-in-aid for a maximum period of 5 years.

4.2 Key aspects of funding ATLs in schools:

a) One time establishment charge of up to Rs. 10.00 lakh would be provided for each ATL in the first year for instruments, prototyping equipment like do-it- yourself kits, 3D printer, electronic tools, etc. An illustrative list of equipment and kits is at Annexure V. A checklist of mandatory equipment and other infrastructure would be communicated to selected schools. The schools will procure equipment and kits at their end, however the AIM will provide the guidance for the same.

1 *Neoteric means a person who advocates new ideas*

b) An amount of Rs. 10.00 lakh would be provided for each ATL over a maximum period of 5 years for operation of ATLs, maintenance of equipment, purchase of consumables, organising popular science lecture series, innovation events and other scientific activities, competitions and payment of honorariums to the faculty and mentors involved.

4.3 Contributions from philanthropic and other institutions and under Corporate Social Responsibility (CSR) would be encouraged for financing / upgrading ATLs. Local Industry / Institution will be encouraged to support the initiative by creating subject/domain specific exhibits/tinkering laboratory facilities.

5. Infrastructure

5.1 The School shall provide a minimum of 750 sq. ft. of built-up space to set up the ATL. The existing facilities for meeting rooms and video conferencing among others can be used to supplement the laboratory space.

6 Applicant schools intending to establish ATLs may visit http://www.aim.gov.in and submit their application online to the Atal Innovation Mission, NITI Aayog. The prescribed application format is at Annexure III. Additionally, a declaration form on the school letterhead will have to be uploaded online by the school, the format is at Annexure IV. It can also be downloaded from the application form.

7 The applicants would be screened based on the screening criteria. Shortlisted applicants will then be evaluated based on Selection Criteria (Annexure II).

8 Selected Schools will be required to enter into a Memorandum of Agreement (MOA) (Annexure VI) and Bond (Annexure VII) with AIM. The schools managed by Government (Central / States) or local body (Municipality / Nagar Nigam) are exempted from executing the Bond.

9 The above Scheme and guidelines are subject to periodic review/revision in consultation with MHLC of Atal Innovation Mission.

10 The Terms and conditions of the scheme are in Annexure I.

2 TERMS AND CONDITIONS FOR ESTABLISHMENT OF ATL

ANNEXURE I

TERMS & CONDITIONS

1. The purpose of this document is to provide information to the interested applicants for the submission of their application form online through AIM Website. It is neither an agreement nor an offer made by AIM or any guarantee for selection of School for the award of grant-in-aid for establishment of ATL.

2. All communications related to the scheme including announcements of shortlisted applicants and final selection of applicants will be published on the AIM website. AIM will not engage in any individual formal/informal communication with any consulting firm or other agency who is not the applicant for ATL.

3. AIM does not make any representation or warranty as to the accuracy; reliability or completeness of the information in this document and it is not possible to consider any accuracy in particular of each applicant.

4. No applicant shall submit more than one application. Applicants shall not submit any false or inaccurate information in full or part at any particular section in the application prepared by any commercial agency or agent.

5. The issue of these guidelines does not imply that AIM is bound to select an applicant. AIM reserves the right to accept/reject any or all of proposals submitted in response to the document at any stage without assigning any reasons whatsoever.

6. AIM's decision will be final and no explanation or justification for any aspect of the selection process shall be given.

7. Applicants shall bear all costs associated with the preparation and submission of their proposals, and their participation in the selection process.

8. Applicants may seek clarification on the guidelines within five days from the date of issue of guidelines. Any request for clarification must be emailed to md-aim@gov.in.

9. Applicant schools would be required to put in place the requisite physical infrastructure such as laboratory and workshop facilities, computer lab with internet within a period of 3 to 6 months from the date of release of funds. Other desirable facilities including meeting room and video conferencing facility to chat with experts in real time prior to the need arise during establishment can also be set up by the schools, if possible.

10. ATL would contain educational and learning 'do it yourself' kits and equipment on – science, technology, electronics, robotics, open source microcontroller boards, sensors and 3D printers etc. An illustrative list of equipment and kits is described in Annexure V. This list is prepared

based on initial guiding curriculum and shall be updated regularly. The schools are also free to purchase any other equipment or kit, if required to deliver the objectives under ATL Scheme.

11. The timings of ATL should be such that it allows students to come after working hours of the host institution (Applicant) to experiment and tinker. During working hours, mandatory time period of 2-3 hours must be defined and included in the curricula of different grades to introduce the concept of tinkering laboratories, as per the latest notification from Ministry of Education- https://aim.gov.in/pdf/MoE%20DO%20letter%20dt%2018.06.2024%20reg%20ATL%20P eriod%20and%20Curriculum.pdf
    The applicant should also spread awareness about the tinkering and innovation activities and share ATL with surrounding schools and children from the nearby community.

12. Applicant schools would be required to identify and appoint adequate number of faculty members and a dedicated ATL In-charge who would be responsible for managing the day- to-day operations of the laboratory. In the event of any change in leadership and staff, including the transfer or resignation of Principal and ATL In-charge, immediate intimation must be provided to AIM so as to get their database updated in AIM records.

13. The established ATL shall be required to participate and support 'ATL Sarthi' initiative, a cluster-based self-monitoring and evaluation framework, under the guidance of the local institution. The local institution, on-boarded by AIM, shall serve as 'Nodal Agency' to provide institutional support, mentorship, incubation facilities to the ATLs to ensure long term sustainability and performance.

14. The ATL shall ensure inclusive utilization of the facility by providing mandatory access to their ATL to students from at least two (2) nearby non-ATL schools to maximize regional impact and resource sharing.

15. ATL shall mandatorily report their monthly activities at 'MyATL Dashboard', a dedicated portal for reporting all monthly activities by ATLs.

16. ATL shall follow ATL Calendar of Activities, published by AIM, at the start of each academic year. The schools may also refer 'ATL Curriculum' & 'ATL Equipment Manual', developed by AIM, to guide the schools on all frontier technologies & concepts involved in ATLs.

17. The dedicated staff/ATL In-charge, as nominated by the school, must undertake mandatory Teacher training – 'Unbox Tinkering', through a self-paced learning platform developed by AIM.

18. ATL shall also mandatorily participate in flagship challenges and competitions organized by AIM such as School Innovation Marathon, Tinkerpreneur etc. Schools are highly encouraged to participate in other Innovation challenges, organized by International organizations/ Regional organization / State/UT Education Department or any other National Institutions.

19. ATL shall create a dedicated ATL webpage & social media platform to update all ATL activities and case studies of school students using the ATL resources to create projects and update it on timely basis.

20. ATL would also put in place mentors/volunteers for hand-holding and guidance in either an online or face-to-face environment.

21. ATL shall develop network with industries, academia, research, civil society for knowledge sharing and mentoring support.

22. The faculty would ensure safety of the students during the working hours of ATL.

23. In order to foster inventiveness among students, the following activities could be conducted by ATL:

    a) Programs to teach and explain students about different concepts – ranging from ideation, design, proto-typing, networking to physical computing.

    b) Periodic regional and national level competitions.

    c) Periodic exhibitions / fairs / carnivals.

    d) Workshops on problem solving, designing and fabrication of products.

    e) Interactions with relevant stakeholders including industry, academia and students from other schools and colleges and universities.

    f) Screening of films and organising popular STEM and entrepreneurship talks by reputed speakers.

    g) Summer and winter camps.

24. Operation of the ATL would be monitored on a suitable periodic basis by an advisory body comprising of following suggested members:

    a) Principal of the School – Chairman

    b) Faculty-in-charge of the ATL – Convener

    c) Representative from local industry/local community/young innovators/ reputed academia/ alumni – Two Members

    d) Parents of School students – Two Members

25. The advisory body will be constituted by the applicant school. It will meet at least thrice in a year and send its report to AIM.

26. The applicant school will maintain separate accounts for the grant and contributions received from other sources, named as <School Name><ATL>. The funds released should be kept in a bank account earning interest; the interest earned should be remitted through Bharatkosh, or as per any guideline issued by AIM, NITI Aayog.

27. The grant being released should be exclusively spent on the specified purpose for which it has been sanctioned within the stipulated time. Any unspent balance out of the amount sanctioned should be refunded to the Government of India by means of an Account's Payee Demand Draft drawn in favour of Pay and Accounts Officer, NITI Aayog, payable at New Delhi.

28. The advisory body of the ATL is required to upload each of i) annual implementation report providing information on the activities conducted; and ii) Utilization Certificate (Annexure VIII) of the GOI Grant, in the prescribed pro-forma, to Atal Innovation Mission, NITI Aayog at the end of each financial year as well as at the time of seeking further instalments of the grant, if any.

29. Concerned officers of Atal Innovation Mission, NITI Aayog or its authorised representatives may visit the ATL periodically for ascertaining the progress of work and resolving any difficulties that might be encountered in the course of implementation.

30. AIM, NITI Aayog reserves the right to terminate support to the project at any stage, if it is convinced that the grant is not being utilised properly or that appropriate progress in the project work is not being made.

31. The brand name 'Atal Tinkering Laboratories' will be withdrawn in case of non- performance of these laboratories.

32. In case of any dispute, the same shall be subject to the jurisdiction of the court of Delhi.

3 SELECTION CRITERIA

ANNEXURE II

SELECTION CRITERIA

1. Applications will be solicited from eligible schools to establish ATL.

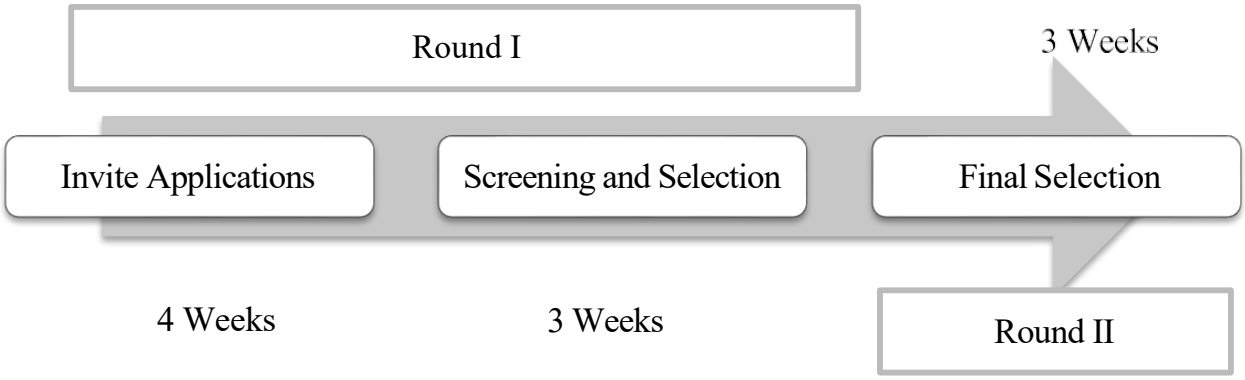
2. The screening / eligibility criteria for schools are:

Criteria	Parameters
Infrastructure	• All weather area (750 sq. ft.) • Computer Lab with internet facility • Steady Electricity connection • Science Lab • Library and Playground
Faculty	• Dedicated & qualified staff : Science, Technology, Engineering, Mathematics, Electronics and Computer Science
Reach	• Enrolment – Min. 200 students in Grade VI – X/ VI – XII • Regular attendance of 60% & above of the staff & enrolled students over the past 2 years

3. The parameters to be used for evaluation of schools are:

Criteria	Parameters
Performance of Students	• % of students scoring 60 – 69.99% in Grade X & XII board exams in previous 2 years • % of students scoring 70 – 79.99% in Grade X & XII board exams in previous 2 years • % of students scoring 80 – 89.99% in Grade X & XII board exams previous 2 years • % of students scoring 90% and above in Grade X & XII board exams in previous 2 years
Participation in Extra-curricular Science activity	• Participation level in Science Innovation fair/ events
Partnerships	• Mentor engagement • Alumni engagement

4. Selection Process Time lines:



4 SAMPLE APPLICATION FORM

ANNEXURE III

FORMAT OF APPLICATION FORM FOR SETTING UP OF ATAL TINKERING LABORATORIES (ATL) - Phase II

(All fields are mandatory)

CONTACT INFORMATION	
1. Name of Applicant School:	2. Complete Address of School: State: District: Pin Code: Block:
3. UDISE number of School:	4. School Contact Details: Official Email Address: Official Contact Number:
5. Principal Details: Name of Principal: Mobile number: Alternative Mobile number: Email Address: Aadhar Number: Aadhar linked Mobile number:	6. Proposed ATL in-charge detail: Name of ATL in-charge: Mobile number: Email address: Aadhar Number: Aadhar Linked Mobile Number:

BASIC INFORMATION	
7. Years since Establishment : ☐ 0-5 Years ☐ 6-10 Years ☐ 11-15 Years ☐ 16 Years and above	8. Type of School : ☐ Central Government / Central PSU ☐ State Government ☐ Local Body (Municipality/ Nagar Nigam) ☐ Private-aided ☐ Private-unaided ☐ Tribal/ Social Welfare Department ☐ Others
9. Board of Affiliation: ☐ CBSE ☐ ICSE / ISC ☐ State Board ☐ International Baccalaureate ☐ Others	10. Category : ☐ Kendriya Vidyalaya ☐ Jawahar Navodaya Vidyalaya ☐ Defence(Army/Navy/AirForce Run, Supported) ☐ Welfare Schools ☐ Others

11. Which area is your school in? : ☐ Rural ☐ Urban	12. Does your school belong to Remote or border area ☐ Yes ☐ No
13. Co-educational? : ☐ Yes ☐ Boys only ☐ Girls only	14. Education Grade Offered in School : (Please select all options applicable) Middle school ☐ class 1 to 8 ☐ class 6 to 8 High School ☐ Class 1 to 10 ☐ Class 6 to 10 Higher Secondary ☐ Class 1 to 12 ☐ Class 6 to 12
15. Highest qualification of Principal : ☐ Below Graduation ☐ Graduate ☐ Post Graduate ☐ M.Phil ☐ PhD/ Post Doctorate	16. Stream of qualification of Principal : ☐ Science (PCB) ☐ Maths ☐ Computer Science ☐ Electronics ☐ English ☐ Commerce ☐ Others
17. Highest qualification of ATL in-charge : ☐ Below Graduation ☐ Graduate ☐ Post Graduate ☐ M.Phil ☐ PhD/ Post Doctorate	18. Stream of qualification of ATL-in-charge : ☐ Science(PCB) ☐ Maths ☐ Computer Science ☐ Commerce ☐ Others

19. Select State/UT :	
☐ Andhra Pradesh ☐ Arunachal Pradesh ☐ Assam ☐ Bihar ☐ Chhattisgarh ☐ Goa ☐ Gujarat ☐ Haryana ☐ Himachal Pradesh ☐ Jharkhand ☐ Karnataka ☐ Kerala ☐ Madhya Pradesh ☐ Maharashtra ☐ Manipur ☐ Meghalaya ☐ Mizoram ☐ Nagaland	☐ Odisha ☐ Punjab ☐ Rajasthan ☐ Sikkim ☐ Tamil Nadu ☐ Telangana ☐ Tripura ☐ Uttar Pradesh ☐ Uttarakhand ☐ West Bengal ☐ Andaman and Nicobar Islands ☐ Chandigarh ☐ Dadra & Nagar Haveli and Daman & Diu ☐ Delhi (National Capital Territory) ☐ Jammu & Kashmir ☐ Ladakh ☐ Lakshadweep ☐ Puducherry

SCHOOL PERFORMANCE		
20. Total Number of teachers in school?	21. Total number of student enrollment in school?	
22. Number of student (6 to 12): Boys: Girls: Total:		
23. Average attendance of staff for the past two years (as per Academic Year) :		
	2024-2025	2023-2024
Total number of Science teachers		
Total number of Maths teachers		
Total number of Computer Science teachers		
Average attendance (%) of Science, Maths and Computer Science teachers (calculated against total working days)		

24. Average attendance of students for the past two years (as per Academic Year) :		
	2024-2025	2023-2024
Total number of students from classes VI to XII/X. (Please mention the total number of students from VI to X if the school doesn't offer XI & XII)		
Average attendance (%) of students (calculated against total working days)		

ATL RELATED INFORMATION

25. Dedicated built-up area available for setting up ATL (750 Sq. feet) as per guidelines:
    - ☐ Yes
    - ☐ No

26. Availability of Infrastructure :

	Yes	No
a. Steady Electricity Connection	☐	☐
b. Computer Lab with internet	☐	☐
c. Science Lab	☐	☐
d. Playground	☐	☐
e. Library	☐	☐
f. Internet speed (2 MBPS or above)	☐	☐

27. ATL recipient schools are required to open & share their ATL facility with the non ATL / nearby schools. Mention the name and UDISE code of 2 non ATL /nearby schools that would be supported by the ATL.
    Please choose one of the following options:
    - ☐ **Option A:** I am willing to support nearby non-ATL schools.
      If yes, provide information of up to two nearby (within 10 KM radius) schools

School Number 1		School Number 2	
School Name		School Name	
School UDISE code		School UDISE code	
Address		Address	

District		District	
Block		Block	
Pin code		Pin code	
Class Categories 1. Middle school • class 1 to 8 • class 6 to 8 2. High school • Class 1 to 10 • Class 6 to 10 3. Higher Secondary • Class 1 to 12 • Class 6 to 12		Class Categories 1. Middle school • class 1 to 8 • class 6 to 8 2. High school • Class 1 to 10 • Class 6 to 10 3. Higher Secondary • Class 1 to 12 • Class 6 to 12	
☐ **Option B:** Thers is no nearby school (within 10 KM radius)			

PAST PERFORMANCE

28. Did the school participate in the Viksit Bharat Buildathon (VBB) 2025?

☐ Yes: ☐ No:

If yes then share your CID:_____

If CID is unknown please share UDISE:_____

If not then did the school participate in any other Innovation event (in the past 5) in

- School Innovation Marathon/ ATL Marathon
  If Yes, Please specify:
  - Year_____
- ATL Tinkerpreneur
  If Yes, Please specify:
  - Year_____
- Any other State/District Level Innovation Hackathon
  If Yes, Please specify:
  - Name _____
  - Year_____
- Any National Level Innovation Hackathon If Yes, Please specify:
  - Name_____
  - Year_____
- Any International Innovation Hackathon
  If Yes, Please specify:
  - Name_____
  - Year_____
- Any Other Innovation Hackathon
  If Yes, Please specify
  - Name_____
  - Year_____

29. Please explain why your school should be selected for an ATL by describing the following:
    - Your school's vision and current goals with regard to STEM and Innovation
    - Your ongoing activities that support these goals (150 words)

30. What activities will you do in the ATL to make your school an innovation hub? (50 words)

INNOVATION CHALLENGE SUBMISSION

Page 1 :

Innovation Challenge Brief

Welcome to the Innovation Challenge! This initiative invites applicant schools to showcase their institution's culture of innovation, creativity, and problem-solving. To demonstrate your school's capability in fostering hands-on, experiential learning, your institution is required to submit an innovation Prototype/Idea developed by your students. Please review the themes and guidelines below before submitting your school's entry.

1. **Challenge Themes**

The school's submitted idea or prototype must align with one of the following themes:

- Vocal for Local: Promoting local products and resources.
- Aatmanirbhar Bharat: Building self-reliant systems, tools, and solutions.
- Swadeshi: Fostering indigenous ideas, knowledge systems, and innovation.
- Samriddh Bharat: Creating pathways to prosperity and sustainable development.

2. **Submission Categories**

Your school may submit the project under one of two categories:

- IDEA: A well-researched, innovative concept addressing a specific problem.
- PROTOTYPE: A physical or digital model (STEM or non-STEM) demonstrating the proposed solution.

3. **General Guidelines**

- Team Structure: The project should be developed by students of your school from Classes VI to XII.
- Submission Format: The school must submit the entry in the form of a 2-minute video Link uploaded on YouTube/Google Drive
- Ensure the video link permissions are set to 'Public' so our evaluators can access it. Inaccessibility to the video may cancel your application.
- Your video link and problem statement must clearly explain the following:
  - The problem the students are solving
  - The innovative solution/prototype
  - How the solution works
  - Its possible impact
  - Future of scale (if any)
  - If any existing solution is already available in market

Page 2 :

1. Theme Selection

Please select the theme your team has chosen for this challenge:

- ☐ AATMANIRBHAR BHARAT (Building self-reliant systems, tools, and solutions)
- ☐ SWADESHI (Fostering indigenous ideas, knowledge systems, and innovation)
- ☐ VOCAL FOR LOCAL (Promoting local products and resources)
- ☐ SAMRIDH BHARAT (Creating pathways to prosperity and sustainable development)

2. SUBMISSION CATEGORY

- ☐ IDEA
- ☐ PROTOTYPE

3. Define Your Problem Statement (Max 50 words)

Problem Statement: _____

Identify and clearly describe the problem you are aiming to solve. Your problem statement must clearly align with your chosen theme and explain the core issue the idea or working prototype addresses.

4. VIDEO LINK OF IDEA / PROTOTYPE

Video URL: _____

Please provide a link (YouTube/google drive) of a 2-minute video. Ensure the link permissions are set to 'Public' so our evaluators can access it.

Important: Your video must clearly explain the following four elements:

i. The problem the team is solving

ii. The innovative solution/prototype

iii. How the solution works

iv. Its possible impact

v. Future of scale (if any)

* NOTE If your school participated in the Viksit Bharat Buildathon (VBB) 2025, you may submit any one video link of Prototyope/Idea, provided it meets all the criteria and guidelines outlined above.

DECLARATION
1. Upload Declaration on School Letterhead (Download the format): *
2. I declare that there is no ATL facility or any other Innovation/ STEM lab in my school premise as on the date of application
3. I hereby confirm that our institution possesses a minimum of 750 sq. ft. of dedicated space required for the setup and operation of an Atal Tinkering Lab (ATL)
4. Declaration: " I/Principal/Headmaster on behalf of my school hereby declare that all the information provided in this application is true, complete, and correct to the best of my knowledge. I understand that if any information is found to be false, misleading, or incorrect, our application may be rejected, and I shall be held liable for the same."

5 SAMPLE DECLARATION

ANNEXURE IV

FORMAT FOR DECLARATION

(Only on School Letter Head)

To
Mission Director,
Atal Innovation Mission (AIM),
NITI Aayog,
Sansad Marg,
New Delhi – 110001

Subject: Declaration

Dear Sir,

Our school, _____[*write name of school*] hereby declares that we have read and understood all the terms and conditions of the Atal Tinkering Laboratories Scheme. The information submitted in the application form by our school is complete and to the best of my knowledge and belief; there is nothing that has been concealed or suppressed.

We also confirm that we have the requisite space of _____[*write the area in Sq. Ft*] in a_____ [*write down either plain or hilly*] state to setup the ATL in our school premises.

Thanking you.

With Regards,

[*Signature of the Principal with the school stamp*]
(*Write Name of Principal*)
Principal

6 LIST OF EQUIPMENT

ANNEXURE V

ILLUSTRATIVE LIST OF EQUIPMENT AND KITS IN ATAL TINKERING LABORATORIES (ATL)

*(*Suggested Quantity is for a class of 20-30 students, could be scaled up as needed)*

Sl. No	Category	Purpose	Approximate Price
1	Standard Equipment	a. Up to Rs. 7,00,000/- (Rupees Seven lakhs only) for procurement of ATL equipment as per the ATL equipment list	Up to Rs.7,00,000/- (Rupees Seven Lakhs Only)
2	Refurbishment, Furnishment and Branding	a. Refurbishment of the ATL in terms of electrical fittings, painting, whitewash, etc	Up to Rs. 1,30,000/- (Rupees One Lakh Thirty Thousand Only)
		b. Procurement of furniture - tables, chairs, storage boxes, etc.	
		c. Printing of banner/board, signage etc. can be undertaken by the schools.	
3	ICT Infrastructure (for Standard ATLs)	2 laptops, 1 desktop computers with upgraded specifications and 1 projector	Up to Rs. 1,70,000/- (Rupees One Lakh Seventy Thousand Only)
	TOTAL		Up to Rs. 10,00,000/- (Rupees Ten Lakh Only)

C1 : Electronics Development, Robotics, Internet of Things, Sensors

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Microcontroller Development Board	16-bit microcontroller or higher, operating voltage 5 V DC, input voltage 7–12 V DC (recommended), clock frequency minimum 16 MHz, flash memory minimum 32 KB, SRAM minimum 2 KB, EEPROM minimum 1 KB, minimum 14 digital I/O pins, minimum 6 PWM output pins, minimum 6 analog input channels, supports UART, SPI and I²C communication interfaces, USB interface for programming and power, programmable through an open-source IDE, compatible with standard expansion shields/ modules, supports USB and external DC power supply. Accessories: Case shell enclosure, compatible USB cable (length - 6 inch or more)	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Compact Small sized Microcontroller Development Board	Small sized compact breadboard-compatible form factor, 8-bit microcontroller or equivalent, operating voltage 5 V or 3.3 V DC, clock frequency minimum 16 MHz, flash memory minimum 32 KB, SRAM minimum 2 KB, EEPROM minimum 1 KB, minimum 8 digital I/O pins, minimum 4 PWM output pins, minimum 2 analog input channels, supports UART, SPI and I²C communication interfaces, USB interface for programming and power, programmable through an open-source IDE, supports USB and external regulated power supply	10	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Wireless IoT Microcontroller Development Board	16-bit microcontroller or higher, operating voltage 5V or 3.3 V DC, clock frequency minimum 160 MHz, flash memory minimum 4 MB, SRAM minimum 320 KB, integrated IEEE 802.11 b/g/n Wi-Fi (2.4 GHz), Bluetooth Classic and Bluetooth Low Energy (BLE) support, minimum 20 GPIO pins, minimum 6 analog input channels, minimum 8 PWM output pins, supports UART, SPI, I^2C and I^2S communication interfaces, USB interface for programming and power, programmable through open-source development platforms, integrated PCB antenna or external antenna support, hardware security features for secure communication, suitable for IoT, wireless automation and cloud-connected applications.	15	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Single Board Computer Development Kit	Single board computer with 64-bit quad-core processor operating at minimum 2.4 GHz or higher , minimum 8 GB RAM, dual-band IEEE 802.11ac Wi-Fi, Bluetooth 5.0 or higher, Gigabit Ethernet port, minimum two USB 3.0 ports and two USB 2.0 ports, dual Micro-HDMI ports supporting dual 4K display output, USB Type-C power input , minimum 20-pin GPIO header, PCIe expansion interface, MIPI CSI camera interface, MIPI DSI display interface, compatible enclosure/case, USB Type-C power adapter, Micro-HDMI to Standard HDMI cable, minimum 32 GB Class 10/ UHS-I/A2 MicroSD card preloaded or compatible with supported operating system, minimum 7-inch capacitive multi-touch display compatible with the board, wireless keyboard and mouse, active cooling solution including heatsink and cooling fan, compatible camera module with connecting cable. It should be a complete kit suitable for embedded systems, artificial intelligence, computer vision, robotics, IoT, edge computing, programming and STEM education.	4	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Breadboards & mini breadboard	Solderless 400 pin breadboard	30	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Breadboards & mini breadboard	Solderless 800 pin breadboard	20	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	General Purpose solderable Board	FR2 A Grade Material (140 x 90 mm)	30	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	General Purpose solderable Board	FR2 A Grade Material (80 x 55 mm)	30	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Berg Strips	Female Berg Strip, 2.54mm pitch, 40 pin single row, breakable pin	30	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Berg Strips	Male Berg Strip, 2.54mm pitch, 40 pin single row, breakable pin	30	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	16x2 LCD display	Dot matrix LCD display. 16 characters X 2 lines + I2C Module	20	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	USB Cables	USB Cable Set (A to B, 12 inch or more)	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	USB Cables	USB Cable Set (Mini, 12 inches or more)	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	USB Cables	USB Cable Set (Type C, 12 inches or more)	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Battery	12V 2500 mAh rechargeable battery with 2 chargers. Equivalent or better	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Battery	9V 2500 mAh rechargeable battery with 2 chargers. Equivalent or better	10	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Resistor Kit	One kit contains - 30 carbon film resistors of 20 different resistance values each assorted, packaged together and labelled. Wattage: 0.125W to 1W Values: 0Ω, 1.5Ω, 4.7Ω, 10Ω, 47Ω, 100Ω, 220Ω, 330Ω, 470Ω, 680Ω, 1kΩ, 2.2kΩ, 3.3kΩ, 4.7kΩ, 10kΩ, 22kΩ, 47kΩ, 100kΩ, 330kΩ, 1MΩ	1	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Capacitor Kit	One kit contains - 20 electrolytic capacitors of 10 different capacitance values each. Assorted kit packaged together and labelled. Values: 10pF, 22pF, 100pF, 1nF, 10nF, 100nF, 1µF, 10µF, 100µF, 1000µF	1	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Linear Voltage Regulator	7805	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Linear Voltage Regulator	7812	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Linear Voltage Regulator	7809	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Linear Voltage Regulator	AMS117 - 3.3v	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Linear Voltage Regulator	AMS117 - 5v	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Water Pump module	DC9V 3W Submersible Water Pump	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Piezoelectric Plate	Normal Copper based 4 cm Diameter approx.	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	8*8 LED Matrix Module	Max7219 Dot LED Matrix Module. MCU Control LED Display Module	10	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Bluetooth module	HC 06 Bluetooth module Voltage Rating: 5 V	15	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	7 Segment Led Display Module	LED 4-Digit Display Module Voltage Rating: 2.4V to 5.5V 4-Pin interface: Vcc, Gnd, Data, Clock	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	GSM Module	SIM800 GPRS Transfer Board Micro Sim Gsm Core TTL Port Module for Arduino	2	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	GPS Module	GY-NEO6MV2 new GPS module	2	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Laser Diode Emitter Module	650 nm 5mW Mini Laser Dot Diode Module	10	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	LDR Module	5mm/12mm, Photosensitive LDR Light Sensor Module	30	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Keypad	Universal 16 Key Switch Keypad	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Joystick Module	2-axis joystick with push button function	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Active Buzzer	Small 5 volt	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Active Buzzer	Big 9 volt	20	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Motor driver Module - L293D	L293D Module	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Sound Playback Module	UM66T, ISD1820 or equivalent	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC Plastic Gear motor with wheel	9V, 150RPM, Side Shaft BO (Battery operation) Motor	12	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC Plastic Gear motor with wheel	9V, 300RPM, Side Shaft BO (Battery operation) Motor	12	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC Plastic Gear motor with wheel	9V, 150RPM, Double Shaft BO (Battery operation) Motor	12	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC Plastic Gear motor with wheel	9V, 50RPM, Double Shaft BO (Battery operation) Motor	12	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC Plastic Gear motor with wheel	9V, 300RPM, Double Shaft BO (Battery operation) Motor	12	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC Plastic Gear motor with wheel	9V, 50RPM, Double Shaft BO (Battery operation) Motor	12	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Wheels	Pack of 4	5	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Node MCU	Node MCU Module	6	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	ESP32 Module	ESP32 Module	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	ESP32 CAM Module	ESP32 CAM WiFi Module Bluetooth with OV2640 Camera Module	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC Vibration Motor with Wire	Operating Voltage: 1.5 to 3V	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Alligator Connectors	Multi-Colour Alligator Connectors - 12 inch	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Battery clips with DC Jack	9-volt battery clips with DC Jack	40	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Hook-up Wires	Red & Black set 400 Meters each	1	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Jumper Cable (Ribbon cable)	Male-Male (1000 pcs)	1	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Jumper Cable (Ribbon cable)	Male-Female (600 pcs)	1	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Jumper Cable (Ribbon cable)	Female-Female (400 pcs)	1	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	RGB LEDs	Regular 5mm 3–5-volt Range	300	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	LEDs (Red)	Regular 5mm 3–5-volt Range	1000	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	LEDs (Green)	Regular 5mm 3–5-volt Range	1000	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	LEDs (Blue)	Regular 5mm 3–5-volt Range	1000	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	LEDs (Yellow)	Regular 5mm 3–5-volt Range	1000	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	LEDs (White)	Regular 5mm 3–5-volt Range	1000	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Timer IC - LM 555	LM 555 Timer IC.	15	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Diodes and Transistors Kit	One Kit Contains - 25 Assorted Basic Diodes of 4 different types each. Types: NPN Transistor - 2N3904, BC547 PNP Transistor - 2N3906, BC557 Silicon Diode - 1N4148, Power Diode 1N4004/4001. Equivalent or better. Wattage: 1W, Current rating: 1A Assorted kit packaged together and labelled.	3	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Button Switch Set	One Kit Contains - 100 buttons of different types. Types: Push, toggle, rotary, selector and slide switch. Assorted kit packaged together and labelled.	3	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Capacitive Touch Switch Module	Digital Capacitive touch switch module -TTP223B Voltage Range: 2V to 5V DC.	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Triple Axis Magnetometer MPU6050	3-Axis Magneto resistive Sensors I2C Digital Interface Integrated 12-bit ADC Range of -8 to +8 Gauss 160 Hz Maximum o/p rate	10	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	IR Sensors, sensor module	LM393 Detection distance: 2 - 30 cm Detection angle: 30 - 40°	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Humidity & Temperature Sensor DHT22	Operating range: 20 – 95 % RH Temperature: 0 - 60 Celsius Power supply: 1.5V AC (Max sine) Operating frequency: 500Hz - 2kHz	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	MQ Series Sensor	MQ - 2 Smoke Detection	3	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	MQ Series Sensor	MQ-3 Alcohol - Ethanol Sensor	3	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	MQ Series Sensor	MQ-4 Methane Natural Gas Sensor	3	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	MQ Series Sensor	MQ-5 Methane Liquified Gas Sensor	3	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	MQ Series Sensor	MQ-6 Liquified Petroleum Gas Sensor	3	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	MQ Series Sensor	MQ-7 High Sensitivity CO Carbon Monoxide Sensor Detector	3	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	MQ Series Sensor	MQ-8 Hydrogen Gas Sensor	3	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	MQ Series Sensor	MQ-135 Air Quality Sensor	3	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	IR transmitter/ receiver	TSOP 1738 Switching rate: 38 KHz Voltage Rating: 5V	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Ultrasonic Sensor Module HC-SR-04 or compatible	Working Voltage - DC 5V Working current - 15 mA Working Frequency - 40 Hz Range - 1 cm to 4 m Effectual Angle - <15° Measuring Angle - 30° Resolution - 0.3 cm	40	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Triple Axis accelerometer ADXL335	3-axis sensing Small, low-profile package 4 mm × 4 mm × 1.45 mm LFCSP Low Power: 350 µA (typical) Single-supply operation: 1.8 V to 3.6 V Temperature stability	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	PIR Motion Detector Module	High digital pulse when motion detected Low digital pulse when idle /no motion detected Sensitivity range (up to 6 m) Power supply: 5V – 12V	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Pulse Rate Heart Sensor	Pulse Rate Sensor Finger Based (finger or earlobe) Working voltage 3-5V	4	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Relay Module	5V 10A - 2 Channel Relay Module. Compatible with Arduino.	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Relay Module	5V 10A - 4 Channel Relay Module. Compatible with Arduino.	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Big Sound microphone module	Large Electret capsule sound module	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Soil Moisture Sensor module	FC-28 with LM293 comparator Operating Voltage: 3.3V to 5V.	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Rain Drop Sensor	Rain Sensitive, Rain Drop Detection Sensor Module. Voltage Range: 3.3V to 5.5V. Size: 5mm X 40mm or equivalent.	6	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Metal Touch Sensor Module	KY-036 or equivalent metal touch sensor module	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Flex Sensor	Flex Sensor. Size - 2.2 Inches	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Temperature Sensor	LM35 Full range temperature sensor. Voltage Range: 4V to 30V. Error: ±0.5°C	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Force Pressure Sensor	Force sensitive resistor with a square, 1.75x1.5” sensing area	4	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Colour Recognition Sensor	TCS3200 Colour Recognition Sensor	4	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Water Flow Sensor	Arduino Compatible Water flow sensor. 5V DC Input.	4	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Water Solenoid Valve	Arduino Compatible Water flow sensor. 9 V DC Input.	4	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Sound Sensor	Sound Sensor Module, Microphones module	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	IR Sensors Array module for Line Following	8 IR Sensors Array module for Line Following Operating Voltage: 5V	5	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Power Bank	10000 mAh 5-volt Power Bank	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	RFID Reader & Tags	Current :13-26mA / DC 3.3V Idle Current :10-13mA Sleep Current<80uA Peak Current<30mA Operating Frequency: 13.56MHz<30mA Read range between 20 cm to 1 m	6	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	RF Modules Tx & Rx 315 MHz ASK	Frequency Range: 433.92/315 MHz Supply Voltage: 3 – 6 V Output: 4 – 16 Dbm Low power consumption Easy application	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Stepper motor with Driver board	9V A4988	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Stepper motor with Driver board	12V A4988	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC motor	12V DC Gear 150 RPM	20	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC motor	12V DC Gear 50 RPM	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	L298P Motor Driver	L298P Motor Driver Shield or relative Driver Shield	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Robotics DIY Kit	Robotics DIY kit with programmable intelligent brain/ brick.	3	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Mechanical (Modular) Construction kit	Metal/plastic mechanical construction kit compatible with electronic equipment.	5	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Drone Kit	ESP 32 based Programmable DIY Drone kit	1	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Aerospace Kit		1	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Bio-Medical Kit		1	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Agri-Tech Kit		1	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Water/ Sanitation Kit		1	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Solar Energy Experiment Kit		2	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Load Cell Sensor 1Kg (with connecting wires)	Phaeton Load Cell Sensor 611E 01 200KG Weighing Aluminum Alloy Model: 611E Measuring Range: 200 kg Output Sensitivity: 1.2±0.2mV/V Dimensions: 58x20x12mm	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC Regulated Power Supply 0-30V, 5 Amp	WANPTEK WPS305H DC Adjustable Power Supply - 30V/5A Output Voltage Range: 0–30V Output Current Range: 0–5A Output Power: 150W USB Output: 5V/2A Display Type: LED (voltage and current) Power Supply Type: Switching regulated Modes: CV (constant voltage) and CC (constant current) Protection: Over-voltage, over-current, short-circuit, over-temp Cooling: Intelligent temperature-controlled fan Input Voltage: 110V/220V AC (switchable)	1	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DPDT switches		20	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	ATtiny85 microcontroller board	ATTINY85 USB Development Board Support for the Arduino IDE 1.0 + (OSX/Windows/Linux). Power via USB or External Source or 7-16 v to 5 v (automatic selection). The Onboard, 150 ma 5 v Regulator. Built-in USB and serial were debugging). 6 I/O Pins (2 inform the for USB only if your program actively communicates over USB, otherwise you can use all 6 even if you are programming via USB). 8 k Flash Memory (about 6 k after bootloader). The I2C and SPI (vis USI). The Power LED and the Test/Status LEDs.	5	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Hall effect sensor Module	A3144 Hall Effect Magnetic Sensor Module Digital Output Hall-effect sensor. Operating voltage: typically, 5V. Output Current: 25mA. It can be used to detect both the poles of a magnet.	5	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Peltier module - 40x40mm Thermoelectric Cooler 6A	TEC1-12706 40×40mm 6A Thermoelectric Peltier Cooler Model number: TEC1-12706 Operating Voltage: 12V Maximum Voltage Umax (V): 15.4V Maximum Current Imax (A): 6A Maximum Power: 92 W Maximum Temperature: 138°C Power Cord: 200mm	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	400 mAh 3.7V single cell Rechargeable LiPo Battery	WLY502040 3.7V 400mAh 1S LiPo Battery – Micro Rechargeable Battery Pack for Wearables / Micro Drone / IoT Capacity (mAh): 400 Dimension: 5mm X 20mm X 40mm Max. Charge/Discharge Rate (C): 1C Model No: WLY502040 Applications: Wearables / Micro Drone / IoT	15	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Flame sensor	Waveshare Flame Sensor Spectrum range: 760nm ~ 1100nm Detection angle: 0 – 60 degrees Power: 3.3V ~ 5.3V Operating temperature: -25℃ ~ 85℃ Dimension: 27.3mm * 15.4mm Mounting holes size: 2.0mm	4	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	1.3-inch Yellow-Blue OLED Display Module	GoldenMorning 1.3 Inch I2C OLED Display Module 4pin- WHITE Size: 1.3 inch Resolution: 128 x 64 Controlling Chip: SSH1106 Driving Voltage: 3.3-5V Operating Temperature: -40~70 celsius Interface Type: IIC Light Colour: White	5	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Advance Metal Chassis for 4-wheel Robot (Red)	Red 2WD Aluminium Smart Robot Car Chassis Kit DIY Drive: 2WD Frame:1.5mm aluminium alloy structure, lightweight and high strength Working voltage: 4.5~6V Wheel Diameter:60mm	10	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	AR/VR headsets (Unity, Unreal Engine compatible), haptic feedback devices, ARCore/ARKit tools	Up to 120 Hz refresh rate for smooth motion rendering, inside-out positional tracking with integrated hand tracking and colour passthrough for mixed reality applications, high-performance XR-grade processor suitable for standalone VR/ AR experiences, storage of min 128GB, approximately 2–3 hours battery life depending on usage, standalone wireless operation with optional PC connectivity via USB-C, suitable for interactive learning, simulations, immersive training and collaborative virtual environments.	1	
C1: Electronics Development, Robotics, Internet of Things, Sensors	R307 Biometric Sensor Module	R307S Optical Fingerprint Reader Sensor Module Operating voltage (v): 4.2 ~ 6 VDC Current consumption: ≤75mA Verification Speed: 0.2 sec Scanning Speed: 0.3 sec Character file size: 256 bytes Template size: 512 bytes	4	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	EV (Electric Vehicle) Kit		1	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Coin Cells	Panasonic CR2032 3V Lithium Coin Battery – pack of 1 Battery Type: Lithium Coin Cell Nominal Voltage (V):3 Nominal Capacity (mAh):225 Operating Temperature (°C):30 to 60 Overall Dimension Height: 3.2 mm Diameter: 20 mm Shelf Life:10 year(s) Weight (g): 3.1 g Shipping Weight: 0.01 kg Shipping Dimensions: 8 × 6 × 2 cm	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	9V Alkaline Battery	9V Original HW High-Quality Battery-5Pcs. Battery Type: HW or equivalent Nominal Voltage (V):9 Dimensions (L x W x H) mm:4.5 x 2.2 x 1.5, PP3 Weight (g):178 Discharge Time:270hm, 9hours Jacket Material: Metal Discharge Terminal Type: Press Stud Terminal Shipping Weight:0.18 kg Shipping Dimensions:9 × 3 × 9 cm	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DF Player	DFRobot Fermion DFPlayer Pro MP3 Player with 128MB Storage Item Type:Accessory Power Supply (V):3.3 to 5 Operating Current (mA):>20 Storage:128MB Communication Mode:UART Operating Temperature (°C):-20 to 70 Operating humidity:5%RH~95%RH Length (mm):24.5 Width (mm):23 Shipping Weight:0.015 kg Shipping Dimensions:9 × 7 × 3 cm	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Turbidity Sensor	Turbidity Sensor with Module Operating Voltage: 5VDC. Current: 30mA (MAX). Operating temperature: -30 ° C to 80 ° C. Compatible with Arduino, Raspberry Pi, AVR, PIC, etc. Measuring Range: 0 ~ 1000 NTU.	2	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	SD Card Reading Writing Module for Arduino	Pinouts: GND, VCC, MISO, MOSI, SCK, CS; SPI standard interface 4 M2 2.2mm screw installation holes Interface electrical level: 3.3V / 5V Current: 0.2~200mA Working voltage: 4.5~5.5V Power supply: 4.5V – 5.5V, 3.3V voltage regulator circuit board Size: 45mm*28mm (L*W)	5	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Micro SD Card Reader Module	Power supply: 4.5V – 5.5V, 3.3V voltage regulator circuit board Positioning holes: 4 M2 screws positioning hole diameter of 2.2mm Control Interface: GND, VCC, MISO, MOSI, SCK, CS Size: 45 x 28mm Net weight: 6g	5	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DS18B20 Waterproof Temperature Probe (Sensor) – Black (1m)	Item Type: Probe Model: Water Proof Temperature Probe Rated Voltage (V):3 to 5.5 Measuring Temperature (°C): -55 ~ +125 °C Probe Diameter:6mm Probe Length (mm):50mm Resolution:9 ~ 12 bit Query time:750 msec Cable Length (m): 1 Shipping Weight:0.08 kg Shipping Dimensions:7 × 5 × 3 cm	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	ESP 32 CAM Module	ESP32-CAM-MB WIFI BLUETOOTH DEVELOPMENT BOARD WITH OV3660 CAMERA MICRO USB CONNECTION TO SERIAL Microcontroller: ESP32 dual-core 32-bit microcontroller, Xtensa LX6 CPU Wireless Connectivity: Wi-Fi 802.11b/g/n (2.4 GHz). Bluetooth Connectivity: Bluetooth Classic (BT) and Bluetooth Low Energy (BLE) support Camera Module: OV3660 image sensor	5	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	**HX711 Load Cell Amplifier Module**	(Output Sensitivity: 1.0 ± 0.1 mV / V. Two selectable differential input channels. On-chip active low noise PGA with the selectable gain of 32, 64 and 128. On-chip oscillator requiring no external component with optional external crystal. On-chip power-on-reset. Measurement Resolution: 24 bits.) HX711 24-Bit Dual Channel Load Cell Amplifier Weight Sensor Operating Voltage (V):5 ~ 10 Current consumption(mA) normal operation < 1.5mA Operating Temperature (°C): -40 ~ +85 Length (mm):34.3 Width (mm):20 Height (mm):3 Weight (g):5 Shipping Weight:0.01 kg Shipping Dimensions:10 × 8 × 6 cm	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	Real Time Clock DS1307 RTC I2C Module	Tiny RTC Real Time Clock DS1307 I2C IIC Module for Arduino (Without cell) Operating Voltage: 5V Two wire I2C interface Hour: Minutes: Seconds AM/PM Leap year compensation Accurate calendar up to the year 2100 Consumes Less than 500nA in Battery-Backup	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	DC5V Humidifier USB Spray Module - 108KHz	DC5V Humidifier USB spray module DIY incubation experiment equipment 108KHz Product name: 108KHz 20mm USB Humidifier Work Voltage: DC 4.5V~5.0V Work Power:2W Work Frequency:108KHz(+/-3KHz) Power Type: Female USB Socket Diameter without rubber ring:16mm Diameter with rubber ring:20mm Spray Diameter:5um Spray hole:740 holes Spray speed:50ml/h Work Temperature:0℃~85℃ Work Humidity:10%~90%RH Driver Size:35*19*15mm	5	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Ball Caster Wheel	Various sizes	20	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	LM358 Gain Amplification Module Operational Amplifier	XD-21 LM358 Gain Amplification Module Operational Amplifier Module Operating Voltage (VDC):5 to 12 IC Chip: LM358 PCB Size (L x W) mm:34 x 14 Weight (g):3 Shipping Weight"0.005 kg Shipping Dimensions:8 × 7 × 3 cm LM358 chip onboard. 100 gains of the circuit design. 10K onboard adjustable resistance, you can adjust the magnification. Onboard power indicator. The chip has led major pin can be directly input and output signals.	10	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	XL4015 5A DC-DC Step Down Adjustable Power Supply Buck Module LED with Heatsink	XL4015 5A Step Down Adjustable Power Supply with LED Voltmeter Output Current (mA):5000 Output Power (W):75 Model No:XL4015 Input Voltage (V): 5 – 38 DC Output Voltage (V):1.25 ~ 36 (adjustable), 1.25 to 36 Conversion efficiency:0.96 Load Regulation: S (I) â‰¤ 0.8% Length (mm):61 Width (mm):38 Height (mm):13 Weight (g):30 Shipping Weight:0.1 kg Shipping Dimensions:18 × 5 × 3 cm	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	PMS7003 Sensor Module PM2.5 Air, Particle Dust Sensor (with connecting Cable)	PM2.5 Air Quality Sensor and Breadboard Adapter Kit - PMS5003 with 1 x 1.25mm Pitch 8-pin Cable 20cm long 1:1 Cable Range of measurement: 0.3~1.0 ; 1.0~2.5 ; 2.5~10 μ m Effective Range: 0~500 μ g/m³ Maximum Range: * ≥1000 μ g/m³ Resolution: 1 μ g/m³ Standard Volume: 0.1L DC Power Supply: Typ:5.0 / Min:4.5 / Max: 5.5V Active Current: ≤100 mA Standby Current: ≤200 μ A Working Temperature Range: -10~+60 ℃ Working Humidity Range: 0~99% Storage Temperature Range: -40~+80 ℃ Sensor Module Dimensions: 50 × 38 × 21mm Weight (incl. cable and adapter): 42.2g	2	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	PAM8403 Mini 5V Digital Amplifier Board with Switch Potentiometer	PAM8403 – Powerful and small Class D amplifier mounted on a 28 x 20 mm breakout board. Includes a super smooth potentiometer combination volume / on-off knob. Also includes header pins. Mini speakers – 2 pcs. 4 ohm, 3w, 31 mm x 70 mm. The same speakers found in flatscreen TV's and monitors. 0.5 mm cord – Includes 50 cm (19 in) headphone style cord and plug for easy phone or Raspberry Pi connection. Material: Metal Size: 35 x 30 x 12 mm / 1.38 x 1.18 x 0.47 inch	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	WS2812B Addressable RGB LED Strip - 5V - 60 LEDs / 5 meter - Inbuilt chip	Chip Type: WS2812B LED Type: RGB Size: 5050 Water Proofing: IP20 No. of LEDs per meter of strip: 60 Adhesive surface: Yes Color: 256 grayscale levels LED package colour White LED case on black flexible PCB Operating Voltage: +5V DC	1	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	2 Way Quick Push Type Lock Electric Wire Connectors		20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Ball Bearing Two Trees Miniature	id=4mm; od=13mm	20	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Ball Bearing Large	8x22x7 mm	5	Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	MicroSD Card - 16 GB	SanDisk 16GB Micro SD Class 10 Memory Card Brand: SanDisk Memory Size: 16 GB Card Type: MicroSD Speed: Up to 98 MB/s (read speed) Format: FAT32	5	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C1: Electronics Development, Robotics, Internet of Things, Sensors	AI & Machine Learning Kit	Official Arduino Tiny Machine Learning Kit AKX00028 Starter Bundle Nano 33 BLE Sense, OV7675 Camera & Custom Shield for Hands-On Projects Powerful Arduino Nano 33 BLE Sense LITE Board inside 32-bit ARM Cortex-M4 CPU running at 64 MHz Microcontroller: nRF52840 Security: ECC608 crypto chip High-quality OV7675camera module inside	2	Non-Consumable
C1: Electronics Development, Robotics, Internet of Things, Sensors	Bio Tech Kit		1	Non-Consumable

C2: Rapid Prototyping Tools

Category	Name	Specification	Suggested Quantity	Type
C2: Rapid Prototyping Tools	3D Printer Kit and tools	Printer Type: FDM (Fused Deposition Modelling), Minimum Dimensions: 250x250x250 Enclosed Build Size or 4 litre Build Volume., Nozzle: 0.3mm to 0.4mm nozzle diameter, slicing software should be free or Open source, LCD Screen UI that display print metrics, Good Heated Print bed. Material Compatibility - PLA, ABS, and derivatives of PLA, Ninjaflex Quality Anti-bacterial/fungal Cover. Repair Kit - with spare springs, screws, keys, tweezers, etc.	1	Non-Consumable
C2: Rapid Prototyping Tools	Dedicated UPS/Power back up	Dedicated UPS/Power Back up with 2-hour battery backup. 1500 VA	1	Non-Consumable
C2: Rapid Prototyping Tools	Filament for 3D printer	1 Kg Grams TPU 5 kg PLA Filament in 5 different colours	1	Consumable
C2: Rapid Prototyping Tools	Filament Storage Box	3D Printing Filament Storage Box for Keeping Filament Dry	5	Non-Consumable
C2: Rapid Prototyping Tools	3D Pen	D Printing Pen LT-3 Series Charging Voltage (V): 5 Charging Current: 1A Battery Type: Lithium Battery Nozzle Diameter (mm): 1.0 Filament Diameter (mm): 1.75	5	Non-Consumable
C2: Rapid Prototyping Tools	3D Pen Filament	Multicolour Pack of 10	5	Consumable

Category	Name	Specification	Suggested Quantity	Type
C2: Rapid Prototyping Tools	MDF Board Plain/ Balsa Wood Sheets	Various thickness from 1.5 mm to 8 mm	10	Consumable
C2: Rapid Prototyping Tools	Acrylic Sheet	Acrylic Sheets of different thickness from 2 mm to 6 mm and 5 different colours (incl Transparent)	8	Consumable
C2: Rapid Prototyping Tools	Set of Arts & Crafts Accessories – e.g.- stationary items and basic prototyping material	Cardboard and Kappa board Sheets	5	Consumable
C2: Rapid Prototyping Tools	Set of Arts & Crafts Accessories – e.g.- stationary items and basic prototyping material	Foam core boards	5	Consumable
C2: Rapid Prototyping Tools	Set of Arts & Crafts Accessories – e.g.- stationary items and basic prototyping material	20m spool of thick strings various colour	5	Consumable
C2: Rapid Prototyping Tools	Set of Arts & Crafts Accessories – e.g.- stationary items and basic prototyping material	Rubber band	100	Consumable
C2: Rapid Prototyping Tools	Set of Arts & Crafts Accessories – e.g.- stationary items and basic prototyping material	Popsicle sticks	100	Consumable
C2: Rapid Prototyping Tools	Set of Arts & Crafts Accessories – e.g.- stationary items and basic prototyping material	Wood glue – 500 ml	2	Consumable
C2: Rapid Prototyping Tools	Balsa Wood Sticks and Blocks		5	Consumable

C3: Mechanical, Electrical and Measurement Tools

Category	Name	Specification	Suggested Quantity	Type
C3: Mechanical, Electrical and Measurement Tools	Hacksaw Frame	Size: 12 inches	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Hacksaw blades	Size: 12 inches	10	Consumable
C3: Mechanical, Electrical and Measurement Tools	Mini Hacksaw Frame	Size: 6 inches	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Mini Hacksaw blades	Size: 6 inches	10	Consumable
C3: Mechanical, Electrical and Measurement Tools	Pliers: 4.5-inch size	External Straight	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Pliers: 4.5-inch size	Long Nose Plier	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Tweezer Set	6 Pc Non-Magnetic Tweezer Set Size - 6 inches	1	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C3: Mechanical, Electrical and Measurement Tools	Ball Pein Hammer	Ball Pein Hammer Weight - 0.75kg	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Steel Shaft Claw Hammer	Claw Hammer Steel Shaft Weight - 0.75kg	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	C-Clamp	Metal Clamp: 3-inch size	2	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Allen Key Set	10 Piece Ring Imperial Allen Hex key	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Drill Machine Set	Drill Machine with accessories Hammer/Screw and clockwise/anticlockwise modes. Power: 500W Chuck capacity - 1 to 10 mm Drill Bits - Masonry, Metal, Wood	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Drilling Workstation	Drill Press, Drill Holder and Rotary Tool, Compatible with Drilling machine provided	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Spanner Set	12-piece combination Spanner Set Range - 4 mm to 30 mm	1	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C3: Mechanical, Electrical and Measurement Tools	Vice Normal	Table top vice	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Wrench	Adjustable Universal Wrench	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Wire Strippers	Wire Stripper Cutter Plier With Spring -26 x 6 x 20 cm (L x W x H)	10	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Screwdriver	40 pc multi-purpose screwdriver set	2	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Air Blower	500 W or more. Variable speed blower	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Drill Bit Set	High Quality 13 Pcs HSS Drill Bits Set for Wood, Iron, Aluminium, Plastic etc.	1	Consumable
C3: Mechanical, Electrical and Measurement Tools	File set	6 pc file set Working length - 6 inch	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Mini File set	6 pc mini file set Working length - 3 inch	1	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C3: Mechanical, Electrical and Measurement Tools	Flexible Cutting Mat	A3 Size with Marked Pattern and Grids (18" X 12")	10	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Plastic Storage Drawer/Organiser for electronic components	Number of Drawers: 60 or equivalent Drawer size (l*w*d) (inch) : 2*2*5	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Plastic Storage Drawer/ Organiser Pckg 4 Suprabin Storage Organizer	Large Size	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Plastic Storage Drawer/ Organiser Pckg 4 Suprabin Storage Organizer	Medium size	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Pegboard	Peg board System to mount tools on wall with attachments. Size: 3ft*2ft	2	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Hot glue gun	Works with standard 0.5inch glue sticks. Temperature - 230 to 280 degree Celsius.	5	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C3: Mechanical, Electrical and Measurement Tools	Soldering Kit	Variable Wattage of Soldering Iron: 15-30 watts/230 volts De-Soldering Pump, Soldering Flux (Paste) 100 grams, DE-soldering Copper Braid (Solder Wick) - 1.5m*2mm Compatible Soldering Tip - Bevel, Chisel, Conical - 5 each per kit. Soldering Wire: 20/22 AWG soldering Wire with rosin core flux (100 Grams)	4	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Soldering Iron	Variable Wattage of Soldering Iron: 15-30 watts/230 volts	6	Consumable
C3: Mechanical, Electrical and Measurement Tools	Adapters	DC power Adapter Type C (5V, 2A)	10	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Adapters	DC power Adapter (12V, 2A)	10	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Adapters	DC power Adapter (5V, 2A)	10	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Dual Temperature Heat Gun	1800 W Dual Temperature Heat Gun	1	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C3: Mechanical, Electrical and Measurement Tools	Soldering Helping hand	Specifications: Adjustable crocodile holding clamps/clip. Soldering iron holder. LED light. Magnifying lens.	4	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Return measuring tape	Return measuring tape 5Mx19mm	2	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Stainless Steel Rule	Stainless Steel 12” / 150 mm Rule	5	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Digital Vernier Calliper	150 mm / 6” Digital Vernier Calliper	2	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Spirit Level	12” Spirit Level	1	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	DIY Paper Microscope	DIY Paper microscope. Magnification range - 100x to 2000x	5	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Digital Pen electric Tester	Voltage tester	1	Non-Consumable

Category	Name	Specification	Suggested Quantity	Type
C3: Mechanical, Electrical and Measurement Tools	Silicone Soldering Mat	Magnetic Heat Insulation Silicone Working Mat 36*26CM Dimensions: 36*26cm Thickness: 7~15mm Material: Silicon Made of high-quality materials, durable Make your repair work easier and cleaner. Made of high-density silicone, waterproof and dustproof. high temperature resistant,	4	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Digital Multi Meter	Voltage Current Resistance-7 functions + 19 ranges to cover DC voltage 200mV to 1kV," AC voltage 200 V - 750 V, DC current 200 µA - 10 A Resistance 200 -2 M Ohm and Transistor & diode test.	2	Non-Consumable
C3: Mechanical, Electrical and Measurement Tools	Corded Electric Jigsaw - 500W - With Different types of Bladed		1	Non-Consumable

C4: Power Supply, Accessories and Safety Equipment

Category	Name	Specification	Suggested Quantity	Type
C4: Power Supply, Accessories and Safety Equipment	Glue Sticks	11 mm x 200mm Hot Melt Glue Stick	20	Consumable
C4: Power Supply, Accessories and Safety Equipment	Nuts and Bolts and screw	Specs - M4X12mm M4X20mm M5X16mm M5X25mm M6X20mm M3X10mm M3X16mm	20	Consumable
C4: Power Supply, Accessories and Safety Equipment	Cable Tie	Medium Cable Tie Pack - Pack of 100	2	Consumable
C4: Power Supply, Accessories and Safety Equipment	Sand Paper	Grit Values - 80, 100, 120, 200, 300. 5 Nos of each	1	Consumable
C4: Power Supply, Accessories and Safety Equipment	Power Strip Adaptors (Extension Board – BIS certified)	Standard Quality Extension with 5 Amp safety fuse. 5 or more sockets in each extension. 5-meter length of each extension.	5	Non-Consumable
C4: Power Supply, Accessories and Safety Equipment	LED Bulb & Bulb Holders	Regular Hanging Bulb holder	10	Non-Consumable
C4: Power Supply, Accessories and Safety Equipment	Electric Wires	Twisted Red black pair - 20 meters 1.5 mm2	1	Consumable
C4: Power Supply, Accessories and Safety Equipment	First-Aid Kit	Standard Medical First Aid kit in portable container.	2	Consumable
C4: Power Supply, Accessories and Safety Equipment	Fire extinguisher (handy units)	Powder Type Fire Extinguisher 2KG	2	Consumable
C4: Power Supply, Accessories and Safety Equipment	Safety goggles (with/ without LED torch)	Polycarbonate Safety goggles Clear lens with no tint	30	Non-Consumable
C4: Power Supply, Accessories and Safety Equipment	Safety Gloves Pairs	Latex Coating Gloves (Medium Size)	20	Non-Consumable
C4: Power Supply, Accessories and Safety Equipment	Safety Mask	Filtering efficiency ranging 80 percent when tested against 0.3-micron sodium chloride particle	20	Consumable

7 MEMORANDUM OF AGREEMENT

ANNEXURE VI

MEMORANDUM OF AGREEMENT

Between_____(Name of School) AND NITI AAYOG

This MEMORANDUM OF AGREEMENT ("MOA") is entered on _(Date) ("**Effective Date**") by and

between:

i) National Institution for Transforming India (NITI Aayog), NITI Bhawan, Sansad Marg, New Delhi – 110001, the think tank of Government of India, NITI Aayog (hereinafter referred to as "NITI Aayog".

ii) ..... (Name of School) with their ATL Application Unique ID..... (Unique ID), established and existing under the laws of India with its legal address at..... (Full Address) .... "(hereinafter referred to as The School)".

WHEREAS NITI Aayog has initiated a program for setting up Atal Tinkering Laboratories in select schools across India.

WHEREAS the School has been selected for the above program through a selection process.

AND WHEREAS ..... (SCHOOL NAME) and NITI Aayog have decided to enter into a MOA setting out the working arrangement that each party agrees are necessary for implementation of the program as under:

ARTICLE 1: BACKGROUND AND PURPOSE

1.1 Atal Innovation Mission Background

NTH Aayog's flagship program, Atal Innovation Mission (AIM) is Government of India's endeavour to promote a culture of innovation and entrepreneurship. Its objective is to serve as a platform for promotion of world-class Innovation Hubs, Grand Challenges, Start-up businesses and other self-employment activities, particularly in technology driven areas.

1.2 Atal Tinkering Laboratories

With a vision to cultivate one million children as innovators, AIM is funding establishment of Atal Tinkering Laboratories (ATLs) in schools across India. Through its Frontier ATL Program, customized templates for specific ecosystems will be created with the objective to foster curiosity, creativity and imagination in young minds; and inculcate skills such as design mindset, computational thinking, adaptive learning, physical computing etc.

1.3 Background of School

[Write 3 lines about school here]

.....

.....

... .

1.4 Purpose

The School has been selected to establish ATL under AIM.

ARTICLE 2: AREAS OF COLLABORATION

The School will collaborate under Atal Innovation Mission to establish, operate and support ATL in India within the school premises with financial support from NITI Aayog.

ARTICLE 3: DURATION

This MOA shall be valid after its signature from the Effective Date of _(DATE)_ initially for a period of 6 years.

ARTICLE 4: TERMS

4.1 Infrastructure and Establishment of ATL

i) The School shall provide a minimum of 750 sq. ft. of built-up space to set up the ATL located within its geographical limits.

ii) The school shall establish ATL by setting up requisite physical infrastructure such as laboratory and workshop facilities, tinkering equipment, computers with internet within a period of 3-4 months from the date of release of funds. Other desirable facilities including meeting room and video conferencing facility to chat with experts in real time can also be set up by the schools, if possible.

iii) All the assets acquired or created from the grant-in-aid shall be the property of the Government of India and should not be disposed-off or encumbered or utilised for purpose other than those for which the grant-in-aid has been sanctioned without the prior permission of the NITI Aayog.

4.2 Financial Support

i) NITI Aayog shall provide financial support in the form of grant-in-aid of Rs. 20 lakh. Out of the grant amount of Rs. Twenty lakhs, Rs. Twelve lakhs (Rs. 10 lakhs for establishment of ATL, procurement of the equipment, instruments, kits, etc. and Rs. 2 lakhs towards meeting O&M expenses, organizing science fairs, carnivals, etc.) shall be disbursed to the schools in the first year itself. The remaining Rs. eight lakhs shall be disbursed to the School in equal installments over a period of next four years for O&M expenses.

ii) The School shall operate a separate interest-bearing account for receipt and utilization of the Grant-in-aid. Interest earned on the Grant-in-Aid shall be refunded to Bharatkosh, or as per guideline issued by AIM, NITI Aayog.

iii) The Grant-in-Aid must be utilized as per sanction terms within the stipulated time. Any unspent balance out of the disbursed Grant-in-Aid should be refunded to the Government of India by means of an Account's Payee Demand Draft drawn in favour of Pay and Accounts Officer, NITI Aayog, payable at New Delhi.

4.3 Operational Aspects

i) The School shall identify and appoint adequate number of faculty members for managing day-to-day operations of the ATL.

ii) The School shall develop network with industries, academia, research, civil society for knowledge sharing and mentoring support.

iii) The School shall provide access to students after the working hours of the host school and allow students from other schools and nearby areas to access the ATL that shall include least two (2) nearby non-ATL schools. The School shall ensure safety of the students during the working hours of ATL.

iv) In the event of a change of control such as in legal structure, management, leadership, including the transfer or resignation of the Principal or the ATL In-charge, the incoming successor shall automatically assume all responsibilities, liabilities, and obligations related to the ATL initiative and the School shall cause incorporation of such pre-condition in all such events of change of control. The School shall promptly inform NITI Aayog about effecting such change of control with all supporting legal documents and the successor shall assume the authority to execute, sign, and stamp all relevant documents required for the continued operation and compliance of the ATL. Failure to do so will affect fund utilization and further fund release.

v) In the event of a change in the registered name of the School, provided that such alteration does not result in any Change of control as specified above, it shall promptly intimate NITI Aayog for necessary update of official records. Failure to do so will affect fund utilization and further fund release.

vi) The School will be required to submit Fund Utilisation Certificates (UCs) for the grant-in-aid at the end of each financial year as well as at the time of seeking further installments of the grant-in-aid, if any.

4.4 Monitoring

i) The School shall constitute an advisory body to monitor the operations of ATL on a suitable periodic basis. The advisory body may comprise of following suggested members:

- Principal of the School -Chairman
- Faculty-in-charge of the ATL- Convener
- Representative from local industry/local community/ young innovators/ reputed academia/ alumni - Two Members
- Parents of School students - Two Members

ii) The advisory body shall meet atleast three to four times in a year and send annual implementation report providing information on the activities conducted to NITI Aayog at the end of each financial year.

iii) NITI Aayog will put in place a monitoring framework with minimum performance requirements for ATLs. The School shall subscribe itself to such monitoring framework and for providing relevant operational data and performance metrics.

iv) The School shall support, operate and run the ATL after the funding from NITI Aayog ceases.

v) The School shall be required to participate and support 'ATL Sarthi' initiative, a cluster-based self-monitoring and evaluation framework, under the guidance of the local institution. The local institution, on-boarded by AIM, shall serve as 'Nodal Agency' to provide institutional support, mentorship, incubation facilities to the ATLs to ensure long term sustainability and performance.

4.5 Other Obligations

i) The School shall create an ATL webpage and upload ATL activities and case studies of school students using the ATL resources to create projects and update it on a timely basis and mandatorily report its monthly activities at 'My ATL Dashboard', a dedicated portal.

ii) The School shall conduct regular activities such as –

- Monthly programs to teach and explain students about different concepts – ranging from ideation, design, proto-typing, networking to physical computing.
- Schools to invite other schools to participate in ATL associated events.
- Schools to ensure community participation in ATL
- Periodic regional and national level competitions.
- Periodic exhibitions / fairs / carnivals.
- Workshops on problem solving, designing and fabrication of products.
- Screening of films and organising popular STEM (Science, Technology, Engineering and Mathematics) and entrepreneurship talks by reputed speakers.
- Summer and winter camps
- Participate and compete in other STEM related events at the national or international level.
- Refer 'ATL Curriculum' & 'ATL Equipment Manual', developed by AIM, to guide the schools on all frontier technologies & concepts involved in ATLs.
- Place mentors/volunteers for hand-holding and guidance in either an online or face-to-face environment for the ATL.
- Impart mandatory Teacher training – 'Unbox Tinkering', through a self-paced learning platform developed by AIM to staff/ATL In-charge, as nominated by the School.
- Participate in flagship challenges and competitions organized by AIM such as School Innovation Marathon, Tinkerpreneur etc. and other Innovation challenges.

iii) The School shall define and include in the curriculum of different grades, teaching period of 2-3 hours per week to introduce the concept of tinkering laboratories, spread awareness as per the latest notification from Ministry of Education: https://aim.gov.in/pdf/MoE%20DO%20letter%20dt%2018.06.2024%20reg%20ATL%20Period%20and%20Curriculum.pdf

4.6 Assignment

i) The School shall not assign any part of this MOA to any other person without prior approval of NITI Aayog.

4.7 Amendments

i) No alterations, additions or modification hereto the terms of this MOA shall be valid and binding unless the same are reduced to writing and signed by both the School and NITI Aayog.

4.8 Non-Exclusive Discussions

i) The School and NITI Aayog acknowledge and agree that the discussions in relation to the Areas of Collaboration are being undertaken on a non-exclusive basis and either Party shall be free to enter into or consummate transactions similar to the Areas of Collaboration in India or elsewhere.

5. ARTICLE 5: TERMINATION

NITI Aayog reserves the right to terminate support to the school at any stage, if it is convinced that the grant-in-aid is not being utilized properly or that appropriate progress is not being made. In addition, the brand name 'Atal Tinkering Laboratory' shall be withdrawn in case of non-performance of ATL, any documented discrepancy, irregularity, or mismanagement regarding the administration of the grant-in-aid, non- compliance with the stipulated operational guidelines or failure to comply with prompt information or reporting requirements.

6. ARTICLE 6: GOVERNING LAW AND JURISDICTION

6.1 Governing Law and Jurisdiction

This MOA shall be governed by and construed in accordance with the laws of Republic of India. Any and all proceedings arising out of or in connection with this MOA will be subject to the exclusive jurisdiction of the courts in Delhi.

6.2 Notices

All communications and notices hereunder shall be in writing and shall be deemed given if delivered personally or mailed by registered or certified mail (return receipt requested) to the Parties at the address specified below:

If to Name of school:

Attention of: Principal

Address: (School Name & Address with Phone Number, Email ID of School and Principal Direct Phone Number/Mobile No)

If to the NITI AAYOG:

Attention of: Mission Director

Address: NITI AAYOG, Sansad Marg, 110001

Fax: +911123096607

Email: md-aim@gov.in

For and on behalf of

(SCHOOL NAME)	NITI Aayog
By:	By:
Print Principal Name:	Name:
Title: Principal, (SCHOOL NAME)	Title:
Date: (DATE)	Date

8 BOND FORM

ANNEXURE VII

BOND FORM

(Applicable for schools other than government schools)

Procedure for execution of the Bond and other related details are given below:

i) The Performance/Surety Bond will be executed by the authorized representative/ signatory (AR) of the school providing the services under the MOA for the purpose of setting up Atal Tinkering Labs and on a non-judicial stamp paper of Rs.100/- (Rupees One Hundred only).

ii) The Bond has to be signed by the AR and both the witnesses; one of whom at least has to be an independent witness.

iii) The Bond is to be attested by the Notary Public.

Know all persons by these present that.....(Name of School) and located at .....(School Address)..... in the State of .... (Name of the state)..... (hereinafter called the "Obligor" which term shall, unless excluded by or repugnant to the context be deemed to include its successor, permitted assigns and all persons entitled to and capable of disposing of the assets and properties of the Obliger) duly authorized vide power of Letter of Sanction and the accompanying MOA dated ---------- and ----------, (head of the School) (hereinafter called the "Surety" which term shall, unless excluded by or repugnant to the context be deemed to include its successor, permitted assigns and all persons entitled to and capable of disposing of the assets and properties of the Surety) are held firmly bound to the President of India here in after called the Government, in the sum of Rs Twenty Lakhs , well and truly to be paid to the President on demand and without demur, for which payment the Obligor and the Surety bind ourselves by these presents in terms and manner for performance of the activities and to attain the agreed upon milestones under the Letter of Sanction and the accompanying MOA by the Obligor.

1) Whereas the Obligor and Surety agree to execute a bond in terms and manner contained herein after and signed this ..... day of .....in the year .....

2) Whereas on the Obligator's request the Government has as per Atal Innovation Mission (AIM) under NITI Aayog has sanctioned funding in favour of the Obligor for the purpose of setting up Atal Tinkering Labs at above the School a grant not exceeding Rs. Twenty lakhs in tranches based on specific conditions and on condition not to divert or misuse the grant.

3) Now in consideration of the aforesaid Letter of Sanction and the accompanying MOA ---------- and ---------- respectively (collectively known as "Sanction"), the condition of the above written obligation is such that if the Obligor duly fulfill and comply with all its conditions mentioned in the sanction, then this bond of obligation shall be void and of no effect, but otherwise it shall remain in full force, effect and virtue, and NITI Aayog shall be at liberty to enforce this bond against the Obligor or the Surety jointly and/or severally, as it may deem fit and on its option.

4) These presents further witness that:

That decision of the CEO, NITI Aayog Govt. of India, on the question whether there has been breach or violation on the part of the Obligor or any of the terms and conditions mentioned in

a) the aforesaid Letter of Sanction and the accompanying MOA dated ---------- and ---------- respectively, shall be final and binding on the Obligor.

b) The Obligor herein agrees and undertakes to abide by the conditions of the Sanction and that the liability hereunder shall not be impaired or discharged by reason of time being granted or by any forbearance, act or omission of NITI Aayog or any of its authorized person.

c) The Obligor or the Surety shall, in the event of breach or violation of the terms and conditions mentioned in the Sanction, shall refund to the Government on demand and without demur the entire amount of Rs. Twenty lakhs or such part thereof as may be mentioned in the Notice Demand issued by the Government along with the interest thereon at the rate of 11.50% compounded annually from the date of receipt of the said amount by the Obligator up to the date of refund thereof to the Government.

d) The Obligor and the Surety assure and confirm that they have understood the Sanction and the obligations mentioned therein and they have executed this bond voluntarily and out of their free will.

5) THE BOND shall in all respects be governed by the laws of India for the time being in force and shall be subject to the exclusive jurisdiction of the Courts in Delhi.

In witness thereof these presents have been executed the day and year here in above written and accepted for (Name and Designation) on the day and year of the corresponding signature.

Signed for and on behalf of the Obligor with date (Stamp/Seal)

(Name and Designation)

6) Signature of the Surety (Name and Designation of Surety with Identity Card such as Aadhaar/ Voter/ PAN/ ID card No (attach copy))

7) In the presence of:

i) ....
(Name & Address of witness) (Signature)
Aadhaar/ Voter/ PAN/ ID card No (attach copy).....

ii) ....
(Name & Address of witness) (Signature)
Aadhaar/ Voter/ PAN/ ID card No (attach copy).....

8) Accepted for and on behalf of the President of India by the authorized signatory of NITI Aayog as Obligee.



For any queries contact
md-aim@gov.in