



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

Government of India
NITI Aayog
Atal Innovation Mission

June 2017

**Government of India
NITI AAYOG
Atal Innovation Mission**

GUIDELINES FOR SETTING UP OF ATAL TINKERING LABORATORIES (ATL)

1.0 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 Neoteric¹ Innovators*'.

2.0 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).

3.0 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.

4.0 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 support 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.

5.0 Infrastructure

- 5.1. The applicant school would have to provide at least 1,500 Sq. Ft. of built up space. Applicant schools from hilly / Himalayan and island states, UTs would have to provide atleast 1,000 Sq. Ft. of built up space. The existing facilities for meeting rooms and video conferencing among others can be used to supplement the laboratory space.
- 6.0 Applicant schools intending to establish ATLs may visit <http://www.niti.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.
- 8.0 The applications would be screened based on the screening criteria. Shortlisted applicants will then be evaluated based on Selection Criteria (Annexure II).
- 11.0 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.
- 12.0 The above Scheme and guidelines are subject to periodic review/revision in consultation with MHLC of Atal Innovation Mission. .
- 13.0 The Terms and conditions of the scheme are in 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 NITI Aayog 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 NITI Aayog 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, specific time periods can be defined and included in the curricula of different grades to introduce the concept of tinkering laboratories. 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 who would be responsible for managing the day-to-day operations of the laboratory.
13. ATL would also put in place mentors/volunteers for hand-holding and guidance in either an online or face-to-face environment.
14. ATL shall develop network with industries, academia, research, civil society for knowledge sharing and mentoring support.
15. The faculty would ensure safety of the students during the working hours of ATL.
16. 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.
17. 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
18. 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.
19. The applicant school will 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 instalments of the grant, if any.

20. 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.
21. 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.
22. 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.
23. 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.
24. The brand name 'Atal Tinkering Laboratories' will be withdrawn in case of non-performance of these laboratories.
25. In case of any dispute, the same shall be subject to the jurisdiction of the court of Delhi.

SELECTION CRITERIA

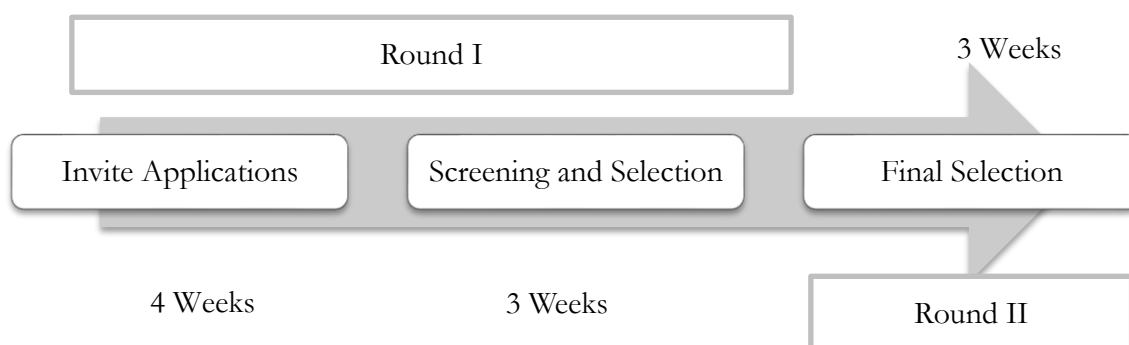
- Applications will be solicited from eligible schools to establish ATL.
- The screening / eligibility criteria for schools are:

| Criteria | Parameters |
|-----------------------|---|
| Infrastructure | <ul style="list-style-type: none"> All weather area (1,500 sq. ft.) All weather area (1,000 sq. ft.) in hilly / Himalayan and island states, UTs Computer Lab with internet facility Steady Electricity connection Science Lab Library and Playground |
| Faculty | <ul style="list-style-type: none"> Dedicated & qualified staff : Maths & Sciences |
| Reach | <ul style="list-style-type: none"> Enrolment – Min. 400 students in Grade VI – X Enrolment – Min. 250 students in Grade VI – X in hilly states Regular attendance of 75% & above of the staff & enrolled students over the past 3 years |

- The parameters to be used for evaluation of schools are:

| Criteria | Parameters |
|---|---|
| Performance of Students | <ul style="list-style-type: none"> % of students scoring 60 – 69.99% in Grade X & XII board exams in previous 3 years % of students scoring 70 – 79.99% in Grade X & XII board exams in previous 3 years % of students scoring 80 – 89.99% in Grade X & XII board exams previous 3 years % of students scoring 90% and above in Grade X & XII board exams in previous 3 years |
| Participation in Extra-curricular Science activity | <ul style="list-style-type: none"> Participation level in Science Innovation fair/ events |
| Partnerships | <ul style="list-style-type: none"> Mentor engagement Alumni engagement |

- Selection Process Time lines:



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: Select District: Select Sub-district: State: Pin Code: |
| 3. School contact details: Official Email Address: Official Contact Number: | 4. Name of the Principal: Mobile Number: Email Address: |
| 5. Name of Proposed ATL In-charge: Mobile Number: Email Address: | 6. UDISE Number: |

BASIC INFORMATION

| | |
|---|---|
| 7. Years since Establishment: <input type="checkbox"/> 0-5 years <input type="checkbox"/> 6-10 years <input type="checkbox"/> 11-15 years <input type="checkbox"/> 16 and above | 8. Type of School: <input type="checkbox"/> Central Government / Central PSU <input type="checkbox"/> State Government <input type="checkbox"/> Local Body (Municipality/ Nagar Nigam) <input type="checkbox"/> Private-aided <input type="checkbox"/> Private-unaided <input type="checkbox"/> Tribal/ Social Welfare Dept. <input type="checkbox"/> Others |
| 9. Board of Affiliation: <input type="checkbox"/> CBSE <input type="checkbox"/> ISC / ICSE <input type="checkbox"/> State Board <input type="checkbox"/> Others | 10. Which Area is Your School in? <input type="checkbox"/> Rural <input type="checkbox"/> Urban |
| 11. Co-educational: <input type="checkbox"/> Yes <input type="checkbox"/> Boys only <input type="checkbox"/> Girls only | 12. Education Grade Offered in School. Tick all Options applicable <input type="checkbox"/> Upper Primary <input type="checkbox"/> Secondary <input type="checkbox"/> Higher Secondary |
| 13. Total Number of Teachers in School: | 14. Total Student Enrolment of the School: |
| 15. Total Student Enrolment (VI to X): | 16. Highest Qualification of Principal: <input type="checkbox"/> Below Graduation <input type="checkbox"/> Graduate |

| | |
|--|---|
| | <input type="checkbox"/> Post Graduate <input type="checkbox"/> M.Phil <input type="checkbox"/> PhD/ Post Doctorate Stream of Qualification of Principal: <input type="checkbox"/> Science <input type="checkbox"/> Maths <input type="checkbox"/> Computer Science <input type="checkbox"/> <input type="checkbox"/> Commerce <input type="checkbox"/> Others |
| 17. Highest Qualification of ATL-in-Charge: <input type="checkbox"/> Below Graduation <input type="checkbox"/> Graduate <input type="checkbox"/> Post Graduate <input type="checkbox"/> M.Phil <input type="checkbox"/> PhD/ Post Doctorate Stream of Qualification of ATL-in-Charge: <input type="checkbox"/> Science <input type="checkbox"/> Maths <input type="checkbox"/> Computer Science <input type="checkbox"/> Commerce <input type="checkbox"/> Others | |
| 18. Select State: <input type="checkbox"/> Plain state <input type="checkbox"/> Hilly / Himalayan state <input type="checkbox"/> Island state Hilly / Himalayan States include Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, Nagaland, Arunachal Pradesh, Assam, Manipur, Tripura, Mizoram, Meghalaya Island States include Andaman & Nicobar Islands and Lakshadweep | |

SCHOOL PERFORMANCE

19. Average attendance of staff for the past three years (as per Academic Year):

| | 2014-2015 | 2015-2016 | 2016-2017 |
|--|-----------|-----------|-----------|
| 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) | | | |

20. Average attendance of students for the past three years (as per Academic Year):

| | 2014-2015 | 2015-2016 | 2016-2017 |
|--|-----------|-----------|-----------|
| 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) | | | |

21. Percentage of students (Grade X) obtaining the following scores in board exams in the previous 3 years :

2014-15 2015-16 2016-17

| | | | |
|------------|-------|-------|-------|
| Below 60% | _____ | _____ | _____ |
| 60-69.99%: | _____ | _____ | _____ |
| 70-79.99%: | _____ | _____ | _____ |
| 80-89.99%: | _____ | _____ | _____ |
| 90-100%: | _____ | _____ | _____ |

22. Percentage of students (Grade XII) obtaining the following scores in board exams in the previous 3 years :

2014-15 2015-16 2016-17

| | | | |
|------------|-------|-------|-------|
| Below 60% | _____ | _____ | _____ |
| 60-69.99%: | _____ | _____ | _____ |
| 70-79.99%: | _____ | _____ | _____ |
| 80-89.99%: | _____ | _____ | _____ |
| 90-100%: | _____ | _____ | _____ |

23. a) Number of Intra-School Science, Technology & Innovation Related Activities / Exhibitions / Fairs / Competitions Organised by your School in 2016-17 (as per academic year):

b) Number of Inter-School Science, Technology & Innovation Related Activities/ Exhibitions / Fairs / Competitions Organised by your School at District/ State / National Level in 2016-17 (as per academic year):

c) Total Number of Awards Won in Inter-School Science, Technology & Innovation Related Activities / Exhibitions / Fairs / Competitions at District/ State/ National Level In 2016-2017 (as per academic year):

This should not include extra-curricular activities like debates, drama, painting competitions, music and dance, and sports etc. However, this will include competitions like CBSE Science Exhibition, IRIS, Imagine Cup etc.

24. Does your school participate in any of the Science exams? Tick all options applicable. If any other, please specify.

| Name of the Exam | Number of students participated in 2016-17 |
|------------------|--|
|------------------|--|

- National Talent Search Examination (NTSE)
- Junior Science Talent Search Examination (JSTS)
- Kishore Vaigyanik Protsahan Yojana (KVPY)
- National Science Olympiad (NSO)
- Other State level:
- None of the above

25. Number of other extra-curricular Scholarships /Awards won:

This should include extra-curricular activities like debates, drama, painting competitions, music and dance, and sports etc.

ATL RELATED INFORMATION

26. Dedicated built-up area available for setting up ATL(in Sq. feet) as per guidelines:

[All weather area (1,500 sq. ft.). All weather area (1,000 sq. ft.) in hilly and island states, UTs.]

Yes No

27. Availability of Infrastructure:

| | Yes | No |
|-------------------------------------|--------------------------|--------------------------|
| a) Steady electricity connection | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Computer Lab with internet | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Science Lab | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Playground | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Library | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Internet speed (2 MBPS or above) | <input type="checkbox"/> | <input type="checkbox"/> |

28. ATL recipient schools are required to open sharing their ATL facility with the community / nearby schools, would you agree with the same?

Yes No

29. Notable STEM alumni engaged with school.

a) Total number :

b) Details of associated alumni (Please mention details of upto 5 alumni):

| Name of the alumni | Frequency of Engagement | Current Affiliation of Alumni | Current Designation | Current Organisation |
|--------------------|-------------------------|-------------------------------|---------------------|----------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Definition: A notable alumni is a person(s) who belongs to technology background or has 10 years of experience or is an award winner, or has won recognition in the area of STEM, or has research publications, won medal at National/ International level.

30. Linkages to mentors.

- a) Total number of mentors school is associated with:
- b) Details of associated mentors (Please mention details of upto 5 mentors):

| Name of the alumni | Frequency of Engagement | Current Affiliation of Alumni | Current Designation | Current Organisation | Contact Number |
|--------------------|-------------------------|-------------------------------|---------------------|----------------------|----------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Definition of academic includes all higher educational institutions and research organisations.

Industry includes all big corporates, small companies, entrepreneurs, innovators, maker-spaces, NGO partners.

Definition of Mentor: Mentor is a person/organisation/ entity that engages with the school on-going basis in conducting guest lectures, hands on sessions, supporting student projects, giving guidance and any other hand holding support if required, on a pro-bono basis.

31. Number of STEM guest lectures organized by your school in academic year 2016-2017 :

32. Why do you think your school should be selected for ATL? (50 words)

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

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

**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)

Package 1: Electronics Development, Robotics, Internet of Things and Sensors

| Category | Name | Description | Suggested Quantity* | Type |
|------------------------------|---|--|----------------------------|-------------|
| Electronics Development | Arduino UNO or compatible Microprocessor and microcontroller | <ul style="list-style-type: none"> Hardware development board with Memory and IO ports | 20 | Consumable |
| Electronics Development | Breadboards & Mini Breadboard | <ul style="list-style-type: none"> Solderless 400 points and 800 points Self-adhesive proto shield | 20 | Consumable |
| Electronics Development | General Purpose solderable Board | <ul style="list-style-type: none"> Boards of each size of A1, A2 and A3 | 10 | Consumable |
| Electronics Development | 16x2 LDC display | <ul style="list-style-type: none"> Dot matrix LDC display with 16 characters x 2 lines | 10 | |
| Electronics Development | USB Cables | <ul style="list-style-type: none"> USB Cable Set (A to B) | 20 | Consumable |
| Electronics Development | 9 Volt battery, multiple resistors and capacitors for electronic projects (various sizes) | <ul style="list-style-type: none"> Amperage Range of resistance Capacity of capacitor | 20 kits | Consumable |
| Internet of Things & Sensors | IR Sensors Obstacle sensor | <ul style="list-style-type: none"> Detection range Detection angle | 10 | Consumable |

| | | | | |
|------------------------------|---|--|----|------------|
| Internet of Things & Sensors | Triple Axis Magnetometer | <ul style="list-style-type: none"> • 3-Axis Magnetoresistive • Sensors • I2C Digital Interface • Integrated 12-bit ADC • Range of -8 to +8 Gauss • 160 Hz Maximum Output Rate | 5 | Consumable |
| Internet of Things & Sensors | Humidity Sensor | <ul style="list-style-type: none"> • Operating range: 20 - 95 % RH • Temperature: 0 - 60 Celsius • Power supply: 1.5V AC(Max sine) • Operating frequency: 500Hz - 2kHz | 5 | Consumable |
| Internet of Things & Sensors | MQ-4 Natural Gas sensor | <ul style="list-style-type: none"> • High sensitivity to Methane, Natural gas • Small sensitivity to alcohol, smoke • Fast response • Stable and long life • Simple drive circuit | 3 | Consumable |
| Internet of Things & Sensors | IR (transmitter) receiver -TSOP 1738 | <ul style="list-style-type: none"> • Switching rate – 38 KHz | 10 | Consumable |
| Internet of Things & Sensors | Ultrasonic Sensor Module HC-SR-04 or compatible | <ul style="list-style-type: none"> • Power supply • Quiescent current • Working current • Effectual angle • Ranging distance • Resolution • Working angle & dimension | 20 | Consumable |
| Internet of Things & Sensors | Triple Axis accelerometer | <ul style="list-style-type: none"> • 3-axis sensing • Small, low profile package • 4 mm × 4 mm × 1.45 mm LFCSP • Low Power : 350 μA (typical) | 5 | Consumable |

| | | | | |
|------------------------------|---------------------------------|--|---|------------|
| | | <ul style="list-style-type: none"> • Single-supply operation: 1.8 V to 3.6 V • Temperature stability | | |
| Internet of Things & Sensors | PIR Motion Detector Module | <ul style="list-style-type: none"> • High digital pulse when motion detected • Low digital pulse when idle /no motion detected • Sensitivity range (upto 6 m) • Power supply: 5V – 12V | 5 | |
| Internet of Things & Sensors | CMOS IR Camera Module - 728x488 | <ul style="list-style-type: none"> • 728 x 488 Resolution • 6V to 20V input • 50mA (at 12V) | 2 | Consumable |
| Internet of Things & Sensors | RFID Reader – Tags | <ul style="list-style-type: none"> • Current :13-26mA / DC 3.3V • Idle Current :10-13mA / DC 3.3V • Sleep Current<80uA • Peak Current<30mA • Operating Frequency: 13.56MHz<30mA • Read range between 20 cm to 1 m | 3 | Consumable |
| Internet of Things & Sensors | RF Modules Tx & Rx 315 MHz ASK | <ul style="list-style-type: none"> • Frequency Range: 433.92/315 MHz • Supply Voltage: 3 – 6 V • Output Power : 4 – 16 Dbm • Low power consumption • Easy application | 5 | Consumable |
| Internet of Things & Sensors | Voice Recognition | <ul style="list-style-type: none"> • Works on 4.5 to 5.5VDC • Digital Interface: 5V TTL level UART interface • Working Current < 40mA • Small size | 1 | Consumable |

| | | | | |
|----------|---------------------------------|--|-----|------------|
| | | <ul style="list-style-type: none"> • Can recognize 5 commands at one time • Can record up to 15 commands | | |
| Robotics | Stepper motor with Driver board | 28BYJ-48 ULN2003 5V Stepper Motor + ULN2003 Driver Board | 5 | Consumable |
| Robotics | DC motor | 3-6 V, 2000 RPM for electric toy car, EK2153 or equivalent | 5 | Consumable |
| Robotics | 4 Wheel robot car chassis kit | Car kit with DC motors, encoder, battery case LINK | 3 | Consumable |
| Robotics | Servo motors | 3 types <ul style="list-style-type: none"> • Positional rotation servo • Continuous rotation servo • Linear servo | 20 | Consumable |
| Robotics | DIY Robotic kits | | 3-5 | Consumable |

Package 2: Rapid Prototyping Tools

| Category | Name | Description | Suggested Quantity | Type |
|-------------------------|--------------------------|---|--------------------|------------|
| Rapid Prototyping Tools | 3D Printer Kit and tools | 1.75 mm PLA Printer, With 180mm ×200mm ×160mm Build Volume, Spatula, Tweezers, Cutter, Screwdriver, Wrench etc. | 1 | Equipment |
| Rapid Prototyping Tools | Filament for 3D printer | 1.75mm PLA filament. 750-1000 g spools | 5 | Consumable |

| | | | | |
|-------------------------|---|-------------------|-------|------------|
| Rapid Prototyping Tools | Set of Arts & Crafts Accessories – eg-stationary items and basic prototyping material | Cardboard, | 5 | Consumable |
| | | foam core boards, | 5 | |
| | | string, | 50m | |
| | | rubberband, | 100 | |
| | | popscicle sticks, | 100 | |
| | | wood glue, | 1 btl | |
| balsawood sheets &rods | assort | | | |

Package 3: Mechanical, Electrical and Measurement tools

| Category | Name | Description | Suggested Quantity | Type |
|------------------|-------------------------|---|--------------------|-----------|
| Mechanical Tools | Hacksaw | Junior | 1 | Equipment |
| Mechanical Tools | Micro Chisel Set | | 1 | Equipment |
| Mechanical Tools | Pliers | <ul style="list-style-type: none"> • External Straight • Nose Circlip Plier • Long Nose Plier • Combination Mini Plier • Wire stripping pliers • Bent nose plier Needle nose pliers | 1 set | Equipment |
| Mechanical Tools | Mini Hack Saw | | 1 | Equipment |
| Mechanical Tools | Ball Pen Hammer | | 1 | Equipment |
| Mechanical Tools | Steel Shaft Claw Hammer | | 1 | Equipment |
| Mechanical Tools | Fiber Glass Nail Hammer | | 1 | Equipment |

| | | | | |
|------------------|-------------------------------------|---|---|-----------|
| Mechanical Tools | Rubber Mallet | | 1 | Equipment |
| Mechanical Tools | C-Clamp | | 5 | Equipment |
| Mechanical Tools | Allen Key Set | | 1 | Equipment |
| Mechanical Tools | Workstation for drilling | | 1 | Equipment |
| Mechanical Tools | 12 piece combination Spanner Set | | 1 | Equipment |
| Mechanical Tools | 12 Piece Open ended Spanner Set | | 1 | Equipment |
| Mechanical Tools | 30 Piece Ratcheting Screwdriver Set | | 1 | Equipment |
| Mechanical Tools | Baby Vice 60 mm | | 1 | Equipment |
| Mechanical Tools | 6 Piece Precision Screw Driver Set | | 3 | Equipment |
| Mechanical Tools | Adjustable Spanner | | 2 | Equipment |
| Mechanical Tools | Wire Strippers | Wire Stripper Cutter Plier With Spring -26x6x20 Cms (LxWxH) | 5 | Equipment |
| Mechanical Tools | Screwdriver | Multi-purpose | 5 | Equipment |
| Mechanical Tools | Tool Set | Multi-purpose | 3 | Equipment |
| Electric Tools | Hot glue gun + Glue Sticks | Range in open space (Standard Conditions) : 100 Meters | 2 | Equipment |

| | | | | |
|-------------------|---|---|----|------------|
| Electric Tools | Soldering Iron Kit Temperature Controlled Soldering Station | Variable Wattage of Soldering Iron: 15-30 watts/230 volts Soldering Iron Temperature Range: 280°C to 450°C | 2 | Equipment |
| Electric Tools | DC Power Supply | 0 - 30 V, 1 A digital DC power supply with variable adjustment | 3 | Equipment |
| Electric Tools | Cables | Micro USB, Mini USB, USB A-USB B, USB - USB. Each 10 pieces | 10 | Consumable |
| Electric Tools | Adapters | DC power Adapter with 5V, 12V. Each 10 | 10 | Consumable |
| Electric Tools | Electric Screw Driver Set | | 1 | Equipment |
| Electric Tools | 1800 W Dual Temperature Heat Gun | | 1 | Equipment |
| Measurement Tools | Return measuring tape 5Mx19mm | | 2 | Equipment |
| Measurement Tools | Stainless Steel 12'' / 150 mm Rule | | 5 | Equipment |
| Measurement Tools | 150 mm / 6'' Digital Vernier Caliper | | 2 | Equipment |
| Measurement Tools | 12'' Spirit Level | | 1 | Equipment |
| Measurement Tools | Digital Pen electric Tester | Voltage | | Equipment |
| Measurement Tools | Digital Multi Meter | <ul style="list-style-type: none"> Digital Multi Meter Voltage Current Resistance-7 functions + 19 ranges to cover | 5 | Equipment |

| | | | | |
|--|--|--|--|--|
| | | DC voltage 200mV to 1kV, <ul style="list-style-type: none"> • AC voltage 200 V - 750 V, • DC current 200 μA - 10 A • Resistance 200 -2 M Ohm and Transistor & diode test. | | |
|--|--|--|--|--|

Package 4: Construction kit, Power Supply, Consumables, Accessories and Safety Equipment

| Category | Name | Description | Suggested Quantity | Type |
|----------------------------|--|--|--------------------|------------|
| Construction kit | STEM Modular Construction kits | | 2 | Equipment |
| Power Supply & accessories | 9 volt battery clips | | 20 | Consumable |
| Power Supply & accessories | Hookup Wires | Red & Black set 100 Meters each | 2 | Consumable |
| Power Supply & accessories | | Jumper Cable: Male-Male Male-Female Female-Female | 400 80 50 | Consumable |
| Power Supply & accessories | Power Strip for power adaptors | | 10 | Consumable |
| Safety equipment | Standard first aid kit | | 1 | Consumable |
| Safety equipment | Fire extinguisher (handy units) | | 1 | Consumable |
| Safety equipment | Safety goggles (with/ without LED torch) | | 10 | Consumable |

MEMORANDUM OF AGREEMENT

Between (Name of School) AND NITI AAYOG

This MEMORANDUM OF AGREEMENT (“MOA”) is entered on _(Date)_ 2017 by and between:

- (i) The think tank of Government of India, NITI Aayog (hereinafter referred to as “NITI AAYOG”, Yojana Bhawan, Sansad Marg, New Delhi - 110001.
- (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

NITI Aayog’s flagship program, Atal Innovation Mission (AIM) including Self-Employment and Talent Utilization (SETU) 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. The Atal Innovation Mission shall have two core functions:

- 1.1.1 **Entrepreneurship promotion:** Wherein innovators would be supported and mentored to become successful entrepreneurs at Incubation Centres and Atal Tinkering Laboratories.
- 1.1.2 **Innovation promotion:** to provide a platform where innovative ideas are generated

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. The objective of this scheme is 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 date of signing (DATE) 2017 initially for a period of 6 years.

ARTICLE 4: TERMS

4.1 Infrastructure and Establishment of ATL

- i) The school shall provide at least 1,500 sq. ft. of built up space (1,000 sq. ft. in hilly areas) to set up the ATL.
- 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.

4.3 Operational Aspects

- i) The school shall identify and appoint adequate number of faculty

members for managing day-to-day operations of the laboratory.

- 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. The school shall ensure safety of the students during the working hours of ATL.
- iv) The grant-in-aid being released should be exclusively spent on the specified purpose for which it has been sanctioned within the stipulated time. 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.
- v) School shall maintain separate accounts for the funds received from AIM. Grant-in-aid money shall be kept in an interest bearing account and the interest earned should be reported to NITI Aayog. The same will be treated as a credit to the organization and will be adjusted towards further installments of the grant-in-aid
- vi) 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 favor of Drawing and Disbursing Officer, NITI Aayog, payable at New Delhi.

4.3 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 the monitoring system.
- iv) The school shall support, operate and run the ATL after the funding from NITI Aayog ceases.

4.4 Other Obligations

- i) The school shall create an ATL webpage for school to upload ATL activities and case studies of school students using the ATL resources to create projects and update it on a timely basis.
- 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.

4.4 Assignment

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

4.5 Amendments

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

4.6 Non-Exclusive Discussions

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.

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. The brand name ‘Atal Tinkering Laboratories’ shall be withdrawn in case of non-performance of these laboratories

ARTICLE 6: DISPUTE SETTLEMENT

6.1 Governing Law and Jurisdiction

This MOA shall be governed by and construed in accordance with the laws of Republic of India. All disputes and differences arising out of or in connection with this MOA shall be the first instance referred to arbitration by three (3) arbitrators, jointly appointed by Parties. The decision and award determined by such arbitration will be final and binding upon the Parties. The arbitration will be conducted in accordance with the Arbitration and Conciliation Act, 1996, as may be in force from time to time. The arbitration proceedings will be conducted in English and the seat of arbitration will be New Delhi.

6.2 Notices

All communications 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:

BOND FORM

(Applicable for schools other than government schools)

(Bond is to be furnished on Rs. 20/- or higher stamp paper and signed in original)

Know all persons by these present that we the
..... (Name of school) and located at
.....(School Address)..... in the State of(Name of
State).... (hereinafter called the “Obligator”) are held and firmly bound to the President of India
(herein 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 we bind ourselves and
our successors and assigns by these presents. The term, obligator or sureties, unless repugnant
to the context, shall mean and include the respective agents, assigns, heirs, successors etc., as
the case may be.

2. SIGNED this day of (month) in the year, 2017

3. WHEREAS on the Obligator’s request the Government has as per Atal Innovation
Mission (AIM) Letter No. _____ dated _____2017 and herein after
referred to as the letter of sanction/ approval, agreed to make in favour of the Obligator for the
purpose of setting up Atal Tinkering Labs at above the school a grant of Rs. Twelve lakhs, the
obligators have agreed to execute this bond in advance, in favour of Atal Innovation
Mission, NITI Aayog for the entire amount of Rs. Twenty lakhs as requested in the proposal
sent to the Government. The obligator is willing to accept the proposed amount or any
other amount approved/ sanctioned by the Government. The obligator is willingly executing
this bond of the proposed amount with the stipulation that obligator will be bond up to
this amount or by the actual amount approved/sanctioned by the Government. The
obligator is also willing to accept all terms and conditions mentioned in the “Letter of
Sanction” to be issued by the Government.

4. Now in consideration of the aforesaid letter of sanction, the obligator herein binds itself
and undertakes to comply with the conditions of the letter of sanction referred to herein and if
the obligator shall duly fulfill and comply with all its conditions mentioned in the letter of
Sanction mentioning the grant then this bond or obligator’s obligation therein shall be void and
of no effect, but otherwise it shall remain in full force, effect and virtue, and the Government
shall be at liberty to enforce this bond against the obligator jointly and/or severally, as it may
deem fit and on its option. These presents further witness that:

a. The decision of the CEO, NITI Aayog, Government of India or the Mission Director of
the Atal Innovation Mission, NITI Aayog, Government of India, administratively concerned
with the matter, on the question whether there has been breach or violation on the part of the
Obligator or any of the terms and conditions mentioned in the letter of sanction, shall be final
and binding on the Obligator.

b. The Obligator shall, in the event of breach or violation of the terms and conditions mentioned in the letter of sanction, 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 (which would be adjusted as per the Government of India notification issued from time to time) from the date of receipt of the said amount by the Obligator up to the date of refund thereof to the Government.

c. The obligator and surety confirm that they have understood the scheme of grant of sanction and they have executed this bond voluntarily and out of their free will.

d. The Government of India has agreed to bear the stamp duty, if any, chargeable on these presents.

5. In witness thereof these presents have been executed on behalf of the School and the Sureties the day and year here in above written and accepted for (Name and Designation) on the day and year appearing against his signature.

**Signed for and on behalf of the School with date
(Name & Signature with School Principal Stamp / Seal)**

**Surety on behalf of School Signed by,
(Name & Signature of the Surety)**

(Fill all the details and get the Page 2 Executed from School Side)

In the presence of:

1.....
(Name & Address of witness) (Signature)
Aadhar Card No/PAN No.....

2.....
(Name & Address of witness) (Signature)
Aadhar Card No/PAN No.....

Accepted for and on behalf of the President of India

UTILISATION CERTIFICATE

| S. No | Letter No. and Date | Amount (in Rs.) | <p>Certified that out of Rs. _____ of Grants-in-aid sanctioned during the year(s) _____ in favour of _____ by Atal Innovation Mission, NITI Aayog vide letter No. dated and Rs. _____ on account of unspent balance of the previous year, a sum of Rs. _____ has been utilised for the purpose of _____ for which it was sanctioned and that the balance of Rs. _____ remaining unutilised at the end of the year has been surrendered to Government (vide letter No. _____ dated _____) / or will be adjusted towards the grants-in-aid</p> |
|-------|---------------------|--------------------|---|
| | | | |
| | Total | | |

payable during the next year _____.

1. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled / are being fulfilled and that I have exercised that following checks to see that the money was actually utilised for the purpose for which it was sanctioned

.

Kinds of checks exercised.

1. Signature _____

2.

3. Designation _____

4.

5. Date _____