



ASSOCIATION OF SCIENCE, TECHNOLOGY & INNOVATION



INTRODUCTION

The Association of Science, Technology and Innovation (ASTI) is made up of educators, scientists, industry representatives and individuals who are committed to advancing the role of the scientific community by inspiring the nation's youth to participate in its programmes; and excel in the world of science and other related themes. ASTI is a not-for-profit, non-governmental organization (NGO) with the objective of empowering young children through various science-based and, skills-development projects.



OUR VISION

To be the premier association in Malaysia for the promotion of education and understanding of scientific knowledge, technological advancement and innovative projects - both locally and internationally.

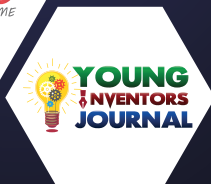
OUR MISSION

ASTI provides leadership in scientific education and technical support to improve and create greater awareness in all areas of science through the generation, dissemination and exchange of information and services.



OUR PROJECTS

ASTI provides platforms that empower young children to grow and excel in their scientific interests. We encourage their discoveries of scientific principles through practical applications for effective learning and retention of knowledge. In achieving our vision, we have experimented with various projects that have led to the following successful programmes that have gained international traction:





SCIENCE FAIR FOR YOUNG CHILDREN (SFYC)

Science Fair for Young Children (SFYC) is a programme held annually among Tamil schools in Malaysia to encourage and strengthen the learning of science for these school children. SFYC is an event that helps enrich and demonstrates Tamil school students' talents from a very young age; and prepare them for future learning with enhanced experiences in science. It is conducted at three levels – at the school level, zone level and national level.



The Key Achievements of SFYC in the 14 years since our inception include:

- Having trained at least 700 teachers each year for the past 14 years.
- Garnering from 30 to 80 thousand participants at SFYC annual events.
- More than 1,000 of past young Science Fair participants have taken part and won in other national and international competitions yearly.
- The success of SFYC has been covered by over 30 news publications yearly.





The Young Inventors Challenge (YIC) is an 'inventive' competition organized by ASTI annually since 2013. YIC aims to encourage secondary school students from 13 to 17 years old to experience the merits of teamwork firsthand, and find innovative solutions to everyday science-related problems.

ASTI has held this event for the past seven consecutive years. YIC is one of ASTI's projects that promotes science, technology and innovation among secondary and high school students locally and internationally.

Each year, we send out invitations to these schools to submit their proposals on innovative ideas and inventions. These proposals are reviewed and shortlisted. The shortlisted teams will undergo ASTI's in-house online training; and the young inventors are then given approximately four months to develop their projects. They are then invited to exhibit their works at the Grand Finale event held in Malaysia.

Among the many achievements of YIC for the past seven consecutive years are:

-  The phenomenal participation growth includes international schools from the Philippines, Thailand, Indonesia, Singapore, Brunei, Vietnam, Timor Leste and China.
-  In 2017, 2018 and 2019, YIC received international recognition from the Malaysian Ministry of Education.
-  YIC continually reaches out to participants from more countries.
-  YIC was shortlisted from over 1509 educational educators from 39 countries by QS rating agency for the Reimagine Education Award in London.





Creative and Critical Thinking Camp and Workshops (CCT) was designed to inculcate and introduce the concept of thinking creatively and, critically when making choices in life. Both methods of logic and empirical reasoning are introduced through lectures and fun activities. The participants are given the freedom to express and explore interesting questions through creative and critical thinking exercises.

In 2019 we have completed a few CCT workshops and one Camp session as follows:

-  Two-day CCT Workshop for 13 students from the Philippines Science High School Cordillere Administrative Region Campus on the 2nd and 3rd July 2019 at University Malaya, Kuala Lumpur, Malaysia.
-  One-day CCT Workshop for 50 students from SJKT (Tamil Primary School) Jenjarom, Kuala Langat, Selangor, Malaysia on 18th November 2019.
-  Two-day CCT Workshop for 27 students from SJKT (Tamil Primary School) Effingham, Petaling Jaya, Selangor, Malaysia on 20th and 21st November 2019.
-  3-day / 2-night Camp for 30 students at Green View Farm, Semenyih, Selangor, Malaysia; on 6th to 8th December 2019.

The successes of this programme since its inception in 2013 include:

-  The development of over 30 modules that are effective in training young minds to think creatively and critically.
-  The participation growth of the programme has led to its running at four levels – primary, lower secondary, upper secondary and tertiary.



**3-day / 2-night Camp for 27 students at Green View Farm, Semenyih, Selangor, Malaysia; on 6th to 8th December 2019.*





ASTI LEAP CHALLENGE (ALC)

ASTI Leap Challenge (ALC) aims to expose young people to the world of science and logical thinking, particularly in the areas of invention and innovation. With ALC, the teachers and students from potential schools are trained to conduct their own school level ASTI Leap Challenge (SL-ALC). This project includes three training sessions, followed by a competition organised at each participating school.

Although this programme is fairly new with the pilot project debuting in 2016, ASTI has garnered participation from a total of 182 students from 37 schools in Penang, Kedah and Johor in 2016 and 2017.

In 2018, at Phase 2, we welcomed 55 schools from the same states including new participants from East Malaysia, namely from Miri, Sarawak. In 2019, four schools from Phase 2 continued conducting SL-ALC and seven schools from Simpang Renggam Zone (Johor, Malaysia) attended a one-day training session organised by ASTI.

🏆 We are especially proud of two schools that participated in the ALC pilot in 2016 (SMK Seri Kota Puteri 2 and SMK Taman Mount Austin), going home with the Platinum and Bronze awards respectively at our Young Inventors Challenge event in 2017.

🏆 Many more of our past ALC participants have taken part in other national competitions and won various accolades and awards.





Entrepreneurs ASTI ENTREPRENEURS

All ASTI's projects are designed as an educational tool where our participants learn from the tasks they undertake. In the Young Inventors Challenge (YIC), our aim is to develop inventors, not inventions.

However, we have noticed another important skill that could be further developed in these students as many of their creative ideas do not move past the conception, designing and prototype phase. Some students do not possess the necessary entrepreneurial skills to turn their unique idea into marketable ventures; they are not aware on how to proceed with a business plan and carve out proposals as these are uncharted waters for them.

Upon this realisation, we created the ASTI-Entrepreneurs (ASTI-E). We ran the following pilot recently under this banner:

- ASTI in collaboration with Kolej Tingkatan Enam Zainul Abidin (KTEZA) have conducted the “Youth Biz Starz” Competition for sixth form students from 16 schools in Penang, Malaysia. These students participated in a one-day workshop, followed by a Business Plan pitching competition.





SCIENCE FAIR FOR YOUNG CHILDREN ALUMNI INITIATIVES

ASTI has launched the SFYC Alumni Initiative which aims to create a support network of past SFYC participants. The objectives of this initiative are:



To build a framework of scientific-based thinking for students to understand the subject better.



To increase the students' ability to understand and absorb our school syllabus better in science subjects.



To further build the students' self-confidence through the general development of their social skills that include effective communication and sharing of ideas.

ASTI plans to set up the SFYC Alumni Initiative in each state at various SJKTs (Tamil Primary Schools), in order that the students may return to their alma mater and contribute to newer student population as they keep in touch with the teachers.

The first programme conducted under this banner was our Science Fair for Young Children Champions League (SFYC-CL) – made up of the winners of various international competitions.





The past participants of Science Fair for Young Children (SFYC) have gone on to win international awards in England, South Korea, Indonesia, Taiwan, China, Hong Kong, Canada, Russia and many other countries.

ASTI has also organised an appreciation ceremony for the winners of these various international competitions in 2018 through a special "SFYC Champions League Programme", followed by an appreciation lunch and prize-giving ceremony. This programme was fully funded by YB Dr Xavier Jayakumar, Minister of Water, Land and Natural Resources of Malaysia.

In the SFYC Champions League, the students were given guidelines on how to commercialise their product. The main aim was to train young people to pursue the business and/or commercial perspective on their inventions. Their products were evaluated by 30 real-life entrepreneurs and business people; and the top three inventions were given a cash prize of RM1,000 each with a certificate of award. All the other teams were given certificate of achievement and medals.





The Young Scientific Explorer (YSE) aims to introduce science to the young in a fun and creative way to promote and help develop their interest in the subject. YSE is a programme focused on experiential learning – we make it flexible enough to garner interest from students with varied capabilities, of all levels. ASTI believes that this is the way to teach science effectively for a deeper and better understanding of the subject. To date, YSE has reached out to almost 5,000 young people.

In 2019, Setia Eco Templer organised a mini Science Fair on 23rd March 2019 at its Sales Gallery. ASTI was invited to conduct our YSE programme through Six Fingerz Events Company. We contributed to this event by setting up a science experiment booth for children. We showcased 10 experiments based on scientific concepts to young children and walked them through the experiments.



On the Wings of Fire Series is a programme created to empower and equip teachers, with

the confidence and skills needed for them to face the requirements of a new generation of students.

ASTI's Teachers Conference 2016 is the first initiative under this programme. Currently ASTI is in the midst of developing modules and materials for 21st Century Skills to train the teachers on its effective implementation in schools. The first part of the 21st Century Skills Online Training Video is ready to be published.

There were a total of four workshop sessions conducted for the lecturers from the Institute Pendidikan Guru Malaysia (IPGM) on Creative Thinking and Critical Thinking. Each workshop session was held for two days.

Workshop sessions 1 (Creative Thinking) and 2 (Critical Thinking) were held in IPGM Cyberjaya, Malaysia attended by 67 lecturers. Workshop session 3 (Creative Thinking) was held in IPGM Sabah and a total of 48 lectures attended the event. The same batch of participants were invited to participate in workshop session 4 (Critical Thinking) in IPGM Sarawak.





(ASTI Progressively Learning and Understanding Science)

The A-PLUS programme brings together secondary school students to explore, learn and understand key scientific concepts according to their school syllabus. ASTI provides a venue that offers a safe and fun, yet challenging environment, for students to learn via the experiential method at the A-PLUS workshops.

ASTI aims to help build the foundation of these concepts, so that students understand what they are learning in their own classrooms. This programme was developed based on the latest research in brain science, to promote deeper learning abilities.

A-PLUS was initiated in 2018 as a pilot programme and three workshops were successfully completed by May 2018. A total of 11 students participated in the workshops.

In March 2019, we started A-PLUS Workshops at the SJKT (Tamil Primary School) Taman Permata that was completed in September 2019. A total of 28 students participated and gained knowledge and experiences from this workshop.





The Young Inventors Journal (YIJ) is a scholarly publication hosted by ASTI which consists of full length original research papers, conference papers, short communications, review papers, and perspectives. YIJ is a free online research journal that is earmarked towards the younger generation to increase their interest, get involved and immerse themselves in learning science, technology and innovation. We hope to expose the young generation to new ideas and inventions through this journal.

ASTI organised a paper-writing competition with the general theme of "How to Conserve and Save Water" under this programme, targeted at students aged between 13 and 18 years old.

We hope to tackle issues from a different angle – through the eyes of young thinkers. We extended invitations to young people to submit their well-researched papers. This paper-writing competition was held in collaboration with the Ministry of Water, Land and Natural Resources of Malaysia.

We received 44 paper submissions from 83 registrations with abstracts, for both the individual and group categories. The three shortlisted teams and students presented in front of the esteemed judges on the YIJ Paper Presentation Day 2019.



www.younginventorsjournal.com



ASTI in collaboration with various media outlets has produced many regular articles for the public. Among them are:



The Arivan Angam – a collaboration between ASTI and Uma Publications, in which we publish 10 successful stories of Science Fair for Young Children for Sutti Mayil, a monthly Tamil magazine for school children.



Also with Uma Publications – ASTI produces articles for a monthly magazine called Mayil Magazine for the masses from Jan 2019 to October 2019. The human interest or topical articles are aimed at raising awareness of Science, Technology and Innovation to the general public





ASTI, in collaboration with the Tamil Malar Newspaper, published a total of 12 articles from Feb 2019 to August 2019 in the paper in relation to “Future of Jobs and How to be Relevant in the Future”.





ASTI advocates for teamwork and lead by example. We collaborate tirelessly with various organisations on projects that are related to science, technology and innovation. Among them are:

-  The Science Film Festival in collaboration with Goethe Institute. The Science Film Festival 2019 came up with the theme of "Humboldt and the Web of Life". As a partner, ASTI invited students from Sekolah Menengah Sri Cahaya and the Oxburg Academy to participate in the Opening Ceremony of the Science Film Festival 2019.
-  Science Immersion Camp with various partners both locally and internationally. In 2019, we completed two days of Creative and Critical Thinking Workshop for 13 students from the Philippines Science High School Cordillere Administrative Region Campus on 2nd and 3rd July 2019 at University Malaya.



Klang Valley City Nature Challenge with The Rimba Project (RIMBA) also known as University Malaya's Rimba Ilmu Botanic Garden. ASTI's role in this collaboration with the Rimba Project was to initiate invitations to primary and secondary schools within the Klang Valley. We approached 22 schools, nine of which participated in the workshop held in Rimba Ilmu Botanic Garden, University of Malaya, Kuala Lumpur, on the 17th and 25th April 2019. The same schools took part in this competition that was held from 26th until 29th April 2019. A total of 24,939 observations on 2,395 species, were made by 475 students who participated in the competition.



Education Tour of Government School Students under the Director of School Education, Ministry of School Education Tamil Nadu, to Malaysia and Singapore. In an effort to cultivate knowledge exchange among the Tamil Nadu's younger generation as well as exposing students to the Malaysian cultures, ASTI alongside the Ministry of Education Tamil Nadu organised and completed "Know Malaysia Education Exchange Programme" for students from Tamil Nadu to share its Culture and Language in the knowledge exchange event between both countries. A group of 25 youth from India accompanied by two teachers arrived in Kuala Lumpur, Malaysia, to participate in the "Know Malaysia Education Programme" from 5th to 14th May 2019.

Our lists of collaborations are exhaustive. We are committed to continuously promote the education of science through interesting, thoughtful and genuine methodologies.

MONTHLY NEWSLETTER

ASTI produces monthly newsletters to constantly update its members, stakeholders and friends with recent activities and project progress. The newsletter is simple and designed for quick reading of five minutes or less.





CONTRIBUTION FORM

- ☐ Science Fair for Young Children (SFYC)
☐ Young Inventors Challenge (YIC)
☐ Creative & Critical Thinking Camp (CCT)
☐ ASTI LEAP Challenge (ALC)
☐ Young Inventors Journal (YIJ)

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