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The Association of Science, Technology and Innovation (ASTI) is a non-profit organization (NGO) formed in 2012 that aims to increase interest in STEM and innovation through hands-on learning experiences. The projects and programmes are designed to be educational tools where participants can learn through completing tasks with the help of teachers and/or mentors.



ASTI Vision

To be the premier Malaysian Association - for the promotion of education and understanding in scientific knowledge, Technological advancement and Innovative projects in both Malaysia and the World.



ASTI Mision

The Association of Science, Technology and Innovation (ASTI) provides leadership in scientific education and technical support to improve and grow awareness in all areas of science through the generation, dissemination and exchange of information and services



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Science Fair for Young
Children (SFYC)

2

Young Inventors
Challenge (YIC)

3

ASTI Feynman
Challenge (AFC)

4

ASTI Leap Challenge (ALC)

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Young Inventors Journal (YIJ)

6

Young Technopreneurs Challenge (YTC)

A large red circle with a white outline of a human head in profile, facing right. Inside the head is a white gear icon. Below the head, the words "MAIN PROJECTS" are written in large, bold, yellow and white capital letters. The circle is surrounded by yellow and orange decorative elements, including a large yellow circle on the right and a yellow curved shape at the bottom right. There are also yellow and orange speech bubble-like shapes at the top and bottom of the red circle.

**MAIN
PROJECTS**

ASTI FEYNMAN INSTITUTE (AFI)

1

ASTI Progressively Learning and Understanding Science (APLUS)

2

ASTI STEM Academy (ASA)

ASTI ALUMNI PROJECTS

1

SFYC Alumni

2

ASTI Science Dictionary

3

ASTI Careers Initiative

ASTI AWARDS

1

ASTI Innovation in Community Award

2

Ramanujan Award





COLLABORATIVE PROJECTS

- Science Film Festival
- Davidson Invention Challenge, DIC
- The Future Education Design Challenge
- ASTI Entrepreneurs Initiatives
 - YouthBiz Starz
 - Young Entrepreneur Scheme UK

ASTI PUBLIC SHARING INITIATIVES



ASTI Knowledge Sharing Initiative

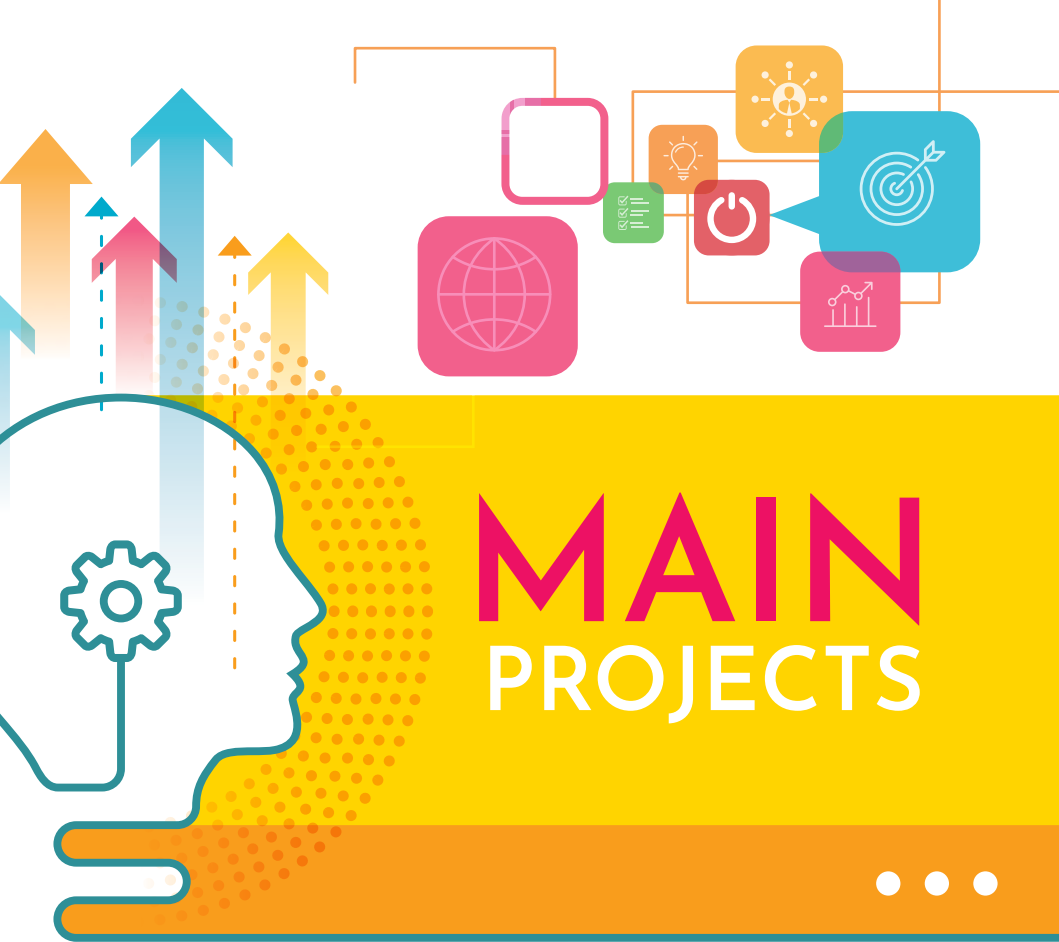


ASTI Socrates Dialogue



Young Scientific Explorers





MAIN PROJECTS



Science Fair for Young Children (SFYC)

Science Fair for Young Children (SFYC) is our first project in Malaysia for the younger generation to increase their interest in science. In SFYC, the learner is totally involved and immersed in the learning of science and exercise their scientific skills through science-based activities which are fun and exciting. Moreover, this project also helps to develop students' awareness and concern on scientific issues in their daily life. ASTI believe that the best way to learn science is by doing experiments and drawing inferences from them, rather than just reading and remembering the facts and figures.

Besides organising the Science Fairs at state and national levels, the SFYC organising team also empower and encourage the schools to hold their own school level science fairs (SLSF) or Home-Based Science Fairs (HBSF).

Levels of Participation:

- School Level/ Home Based,
- Zone Level,
- National Level

Participation Requirement:

- 3-5 students in a team

Target Group:

- SJKT Students

Focus Area:

- Science Experiments and the Scientific Method



Young Inventors Challenge (YIC) is an international programme that requires secondary school students to collaborate and come up with an invention/innovation to address specific issues they have identified. The purpose of the programme is to help build and encourage a sense of creativity and inventiveness among young people to be future problem solvers of the world. Additionally, YIC helps young inventors experience the inventive cycle, from conceptualization to product or prototype, to make a positive change in society. ASTI started this program in 2013 as a pilot and the response has been remarkable ever since, winning multiple awards.

Levels of Participation:

- International Level

Participation Requirement:

- 2-5 students in a team

Target Group:

- Secondary school students aged 13 to 17 years old

Focus Area:

- Inventions/ Innovation, Problem Identification & Solving Skills related to Sustainable Development Goals (SDGs)



ASTI Feynman Challenge (AFC) is a project that was designed in 2020. It was conducted on-line so that it could be completed at home with minimal resources.

Levels of Participation:

- National Level
- International Level

Participation Requirement:

- 2 - 5 person per team

Target Group:

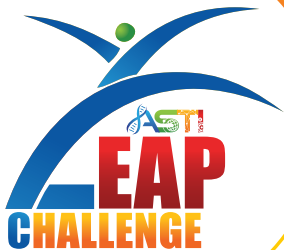
- **Category 1:** Age of 10-12
- **Category 2:** Age of 13-17,
- **Category 3:** Above 18
(category determined by the oldest person appearing in the video).

Focus Area:

- Feynman Technique for Learning, Science Communication, Deep understanding of scientific principles.

AFC is for all levels of the community which includes students, families, refugees, orphanages, etc. In AFC, students work as a team with a minimum of 2 people per team. The teams can be made up of teachers, parents and children, brothers and sisters, friends and study buddies.

The teams are to invent something (tool/ method) to explain a scientific principle that they have learnt in school. The invention or method can be a simple tool/ method using day-to-day objects they would find at home. The team must then record a video with their explanation of the scientific principle.



Levels of Participation:

- School Level

Participation Requirement:

- 3 - 5 person per team

Target Group:

- Secondary school students aged 13 to 17 years old

Focus Area:

- Problem solving and building solutions via invention and innovation, Thinking Skills, Project Based Learning.

ASTI Leap Challenge (ALC) focuses on experiential learning and hands-on activities to build confidence among young people, especially in the world of problem solving and building solutions via invention and innovation. The programme is focused to be run at the school level and uses the Project Based Learning (PBL) approach. With ALC, the teachers and students from potential schools are trained to conduct their own school level ASTI Leap Challenge (SL-ALC).

SL-ALC will help students develop their creative, critical thinking and problem-solving skills. ALC can also be conducted for specific communities and is a good way to introduce STEM and innovation to them. The project comprises of 3 trainings followed by a competition.



YOUNG INVENTORS JOURNAL

Levels of Participation:

- National Level
- International Level

Participation Requirement:

- Individual or team of 3-5 writers

Target Group:

- All Ages with a focus mainly for 18 to 40 years old

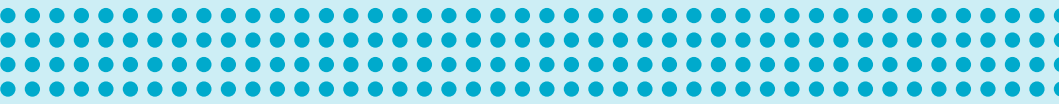
Focus Area:

- Research and academic writing, Creative and Critical Thinking, Problem Solving

YIJ is an online research journal that empowers people to write well researched papers detailing a solution for a problem they themselves have identified and feel strongly about.

Most journals aim to push the frontiers of knowledge. YIJ goes further as it aims to push the writers' own frontiers, both in knowledge and imagination. YIJ hopes to help the next generation to explore new ideas and inventions in a systemic, disciplined manner and express it in a written form.

The writers need not be affiliated to any organization; papers can be submitted for review any time of the year. YIJ also organizes regular paper writing competitions which are themed around important issues and causes.





The target group and age category for the YTC are as follows:

- **Category 1** : Secondary school students aged 15-17 years old
- **Category 2**: 18-30 years old (The category will be determined by the oldest person in the team)

Focus Area:

- Introduction to commercialisation and entrepreneurship.
- Develop Entrepreneurial skills.

Young Technopreneurs Challenge (YTC) is a competition for business plan and technology-based entrepreneurship that focuses on ideas and inventions with commercialization potential. YTC is designed to help participants develop entrepreneurial skills, and is conducted in two phases. The first phase is registration, followed by briefing and business plan submission. In the second phase, shortlisted business plan teams will be invited for a half day online workshop, followed by an online pitching session, after which winners will be determined. YTC will introduce concepts like financial planing, value proposition, marketing, planing and business pitching to students.



ASTI
feynman
institute

Recognizing the problem of learning disruptions caused by the Covid-19 pandemic, ASTI started these special projects to run from 2022 under the umbrella of the ASTI Feynman Institute.





The Covid pandemic has caused many students to fall behind in their studies, particularly in science and mathematics. In recognizing the potential long-term effects of this disruption, ASTI created the ASTI STEM Academy (ASA), a portal to help students from Year 1 to 6 evaluate their current understanding of various topics through regular self-assessments based on the Malaysian syllabus. These assessments, in the form of quizzes, are available on ASA's website on a monthly basis and can be taken by students in English, Malay and Tamil languages.

The results of these quizzes can be used by students, parents, and teachers to identify areas that need immediate attention and take remedial action.

Participation Requirement:

- Individual

Target Group:

- Year 1 to Year 6 (Age 7 to 12) Following the Malaysian Syllabus.
- Other levels to be developed in the future

Focus Area:

- Mathematics and Science
Self-Assessment



**Participation Requirement:**

- Individual or School Participation

Target Group:

- Year 1 to Year 6
- Form 1

Focus Area:

- Learning scientific concepts through experimentation, analogies and hands-on activities



(ASTI Progressively Learning and Understanding Science)

A-PLUS is a project run as workshops that focus on experimentation and activities, based on the Malaysian syllabus for years 1 to 6 and Form 1. The teachers from interested schools are trained to conduct these workshops for their students during school or after school hours. The students to learn scientific concepts and principles through activities and experimentation, rather than just memorizing facts and figures for exams.

The workshops are designed to condense the concepts that would normally be taught in a year into a 1-3 day activity based workshop, so that students can learn these concepts more effectively when they learn them in the classroom. APLUS can also help students catch up with topics they may have missed during the pandemic lockdown.

ASTI Alumni Projects





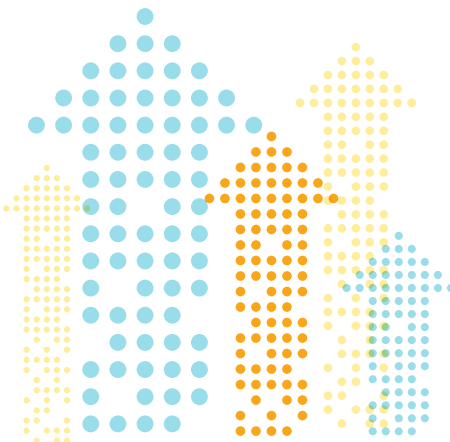
Target Group:

- Past participants of Science Fair for Young Children. Alumni initiatives will also be launched for other ASTI projects soon.

SFYC Alumni

Science Fair for Young Children, SFYC, is ASTI's biggest programme, held annually among Tamil schools in Malaysia to encourage and strengthen the learning of science among school children. However, we have not been able to keep in touch with students who have participated in SFYC in the past. To address this, we have started an alumni initiative for past participants of SFYC. All past participants of SFYC are thereby invited to be members and participate in various initiatives.

This Project is mainly designed to help students culturally adjust to secondary school life. Moreover the Alumni will be updated with current SFYC developments and for the continued self-development.



ASTI Science Dictionary

ASTI's Science Dictionary for Form 1- Form 3 aims to assist students, particularly those in Form 1, 2 and 3 to understand key scientific terminology they learn in school. The dictionary is primarily aimed at students from Tamil-medium schools who may find it difficult to study science in Malay or English in secondary school. The key terms were selected from text books and other reference books in Malaysia. ASTI believes that understanding these science terminologies will provide a strong foundation to understanding the subject better.

Target Group: Form 1, 2 and 3 students





ASTI CAREER'S Initiative

In a fast changing world, the young person needs to be aware of the many career paths available to them. ASTI hopes to help young people chart theirs from an early age via its Knowledge Sharing Initiative programmes that include internships, lectures, mentorship, research and others..

ASTI Product Discounts



ASTI works with various organisations and education providers to give discounts for our Alumnis.





ASTI Awards



ASTI Innovation in Community Award was launched in 2014 to recognize the contributions of an individual or a group of people in helping community projects in Science and/or Technology and/or Innovation. In 2015, we decided to rename the award to The Abdul Kalam Innovation in Community Award in recognition of Dr. APJ Abdul Kalam, the former president of India and his contribution to STEM learning and youth empowerment.



The Ramanujan Award is presented to honour teachers who have participated in SFYC and have contributed to their students' achievement in science in their schools and in their community, as well as in other national and international science and innovation based competitions.



S R I N I V A S A
R A M A N U J A N



ASTI regularly partners with other organisations to run collaborative projects.





The Science Film Festival (SFF) is an international programme organized by the Goethe-Institut, of Germany in various countries. ASTI has been a partner to SFF since 2014, and has organized many events in conjunction with previous SFFs. ASTI regularly organizes a Virtual Quiz Competition in order to encourage Primary and Secondary School students in Malaysia to watch the Science Film Festival Videos.



The Davidson Invention Challenge (DIC) with Cambridge University is designed to introduce UK schools to innovation and inventing to help solve problems. ASTI helped design the programme and developed the modules for DIC.

TheFuture.Education *Design Challenge*

ASTI is a promoting partner of an initiative called the Entrepreneurship and Future of Education Think Tank. Organized by Lehigh University and the Nasdaq Entrepreneurial Center, the initiative hosts "TheFuture.education Design Challenge" to encourage students to share their ideas and innovations in designing the future of inclusive entrepreneurial education.





Level of Participation:

- *National and International Level*

Participation Requirement:

- *Depending on the requirements of the partner Institution*

Target Group:

- *All Ages with a focus on younger age groups*

Focus Area:

- *Introduction to commercialisation and entrepreneurship. Develop Entrepreneurial skills*

ASTI's initiatives focuses on STEM and Innovation; as such, ASTI has been privileged to witness many creative and unique inventions throughout the years.

The next frontier of learning and development is entrepreneurship. To further help ASTI's participants on their voyage of discovery, we started a new initiative called the **ASTI-Entrepreneurs (ASTI-E)** to spearhead ASTI's venture in the area of entrepreneurial learning.



To date ASTI has worked with other organisations to run entrepreneurial programmes at their institution such as with the Six form College in Penang for Six form students in Penang called YouthBiz Starz. It also piloted the Young Technopreneurs Challenge (YTC) which is now one of ASTI's main projects.



Young Entrepreneur Scheme UK



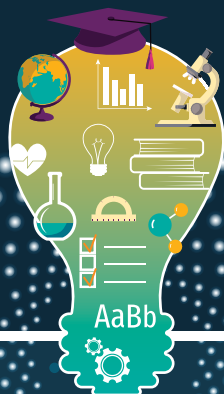
The Association of Science, Technology, and Innovation (ASTI), had launched the Young Entrepreneurs Scheme (YES) in Malaysia as the Malaysian Partner for the Scheme. It called for registration and business ideas from PhD students and postdoctoral researchers from universities in Malaysia for 2021. ASTI has received a total of 5 business plans from various universities in Malaysia. Team AgriBio4Crops from University of Malaya and Team Tesmasoil from University of Nottingham Malaysia were shortlisted to compete directly with universities from UK.





Various Promotional Collaborations

ASTI works with various stakeholders and providers of knowledge-based products by promoting their events and initiatives that may be of interest to ASTI's networks of learners and volunteers. Examples of such initiatives include Cuber Invent Lab™: FREE WEBINAR on EDUCATION 4.0, the 9th International Conference on Science and Mathematics Education by The Regional Centre for Education in Science and Mathematics RECSAM, and many more.



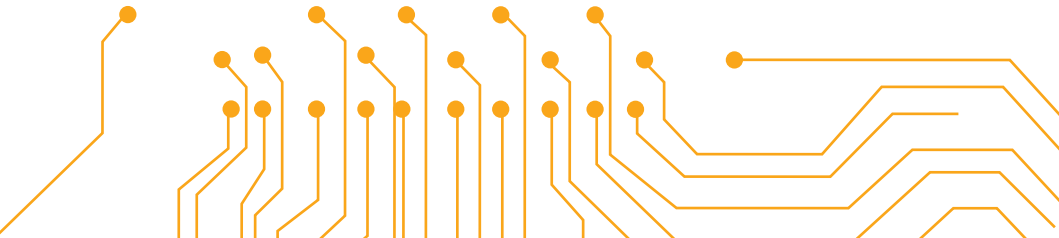
ASTI

Public
Sharing
Initiatives





ASTI aims to provide a platform for experts to share their knowledge through written or lectures format and knowledge sharing sessions. The platform is designed for professionals to share their knowledge with each other and also for experts to share their knowledge with young learners. To date, ASTI has had knowledge sharing initiatives with experts from National Aeronautical Space Agency - NASA, The National Science Foundation NSF (USA) and many more.





The Socrates dialogue is a method developed by the Athenian philosopher Plato. It uses logic and reason to break down the essence of an idea and seek out the deeper meaning of things. The goal is to understand the issue in question at a deeper level by asking probing questions and focusing on first principles. The aim is to simplify the process and help understand key concepts that are important. ASTI organises ASD around various themes.



The Young Scientific Explorer (YSE) is an outreach programme for the public and aims to introduce science to the younger generation in a fun and creative way to promote and help develop their interest in the subject. YSE is a programme focused on experiential learning – it is made flexible to garner interest from students of all levels. To date, YSE has reached out to almost 5,000 young people at various locations including schools, shopping malls, etc.





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)
☐ Other : _____

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☐ RM 5,000 ☐ RM 10,000 ☐ RM 15,000 ☐ RM 20,000

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