



தேசிய
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இளம் ஆய்வாளர்களின்
அறிவியல் விழா அறிக்கை
**NATIONAL
SCIENCE FAIR FOR
YOUNG CHILDREN**

2013
REPORT



National Science Fair for Young Children
2013 Report

Compiled by:
Umahsankariah Muthu Naikar
Vanitha Vasu
Thinaheswary Gunashakaran
Sivaraj Arumugam

Design, Layout & Editing:
Ragavan Pandian (Freelance Designer)

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CONTRIBUTORS

YAB Dato' Sri Haji Mohammad Najib bin Tun Haji Abdul Razak
YAB Tan Sri Muhyiddin Hj. Mohd Yassin
Ministry of Education
Ministry of Finance
YB Datuk Seri Dr. S. Subramaniam
YB Tuan P. Kamalanathan
Datuk Ravin Ponniah
Prof Dato' Dr Tamil Selvan Muthusamy
Datuk Tharuma Rajah
Datuk Dr. Palan

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Hay Group

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GlaxoSmithKline (GSK)
Nestle Malaysia

ZONES CONTRIBUTORS

1 Malaysia India Student Movement
Mr. Chella
Mr. M.L. Maran
Mr. Visu
Mr. O.G. Shanmugam
Mr. I.R. Devan
Mr. Sadish Kumar
1 Malaysia Development Berhad
Youth Mc
Penang State Government
Indah Water
Perak State Government
Pusat Khidmat Ahli Parlimen Hulu Selangor (PUSKAP)
DHRRA Malaysia
Amanah Raya
Timbalan Perdana Menteri
Ministry of Federal Territories
Headmaster Council NSDK
YB Datuk Seri Dr S. Subramaniam
Mr. Soros Kim
Mr. Nila Raja
Dato J. Randhir Sigh
Mr. Thenarsoo
YB Tuan P. Kamalanathan
Putera MIC Johor
Pahang State Government
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Working Group Committee of SFYC 2013

Founder	: Dr. Mohamed Yunus Mohamed Yasin
Advisory Board Members	: Dr. Subramaniam Gurusamy : Mr. Nadaraja Kalimuthu : Major Dr. Vikneswaran Munikanan : Mr. CM Vignaesvaran : Mr. Saravanan Vimalanathan : Mr. CM Vignaesvaran Jeyandran
Project Director I	: Mr. Saravanan Vimalanathan
Project Director II	: Ms. Umahsankariah Muthunaikar
Project Manager	: Ms. Vanitha Vasu
Senior Executive Officer	: Ms. Thinaheswary Gunashakaran
Executive Officer	: Mr. Sivaraj Arumugam
Assistant Project Officer	: Ms. Vija Letchumy Rajoo
National Judging Coordinator	: Mr. Kumaran Arumugam
Committee Members	: Mr. Mugunthan R. Mani : Mr. Joseph William : Mr. Prevrnavan Amirtham : Ms. Chitra Perumal : Mr. Soola Verroman Subramaniam : Mr. Edwin Anand Raj

Zone Coordinators

Zone 1 - Kedah & Perlis

Mr. Sadhis Kumar

1 Indian Student Movement

Zone 2 - Pulau Pinang

Mr. Edwin Anand Raj

Youth MC

Zone 3 - Perak

Mr. Suresh Kuppusamy

DHRRR Malaysia

Zone 4 & 5 - Selangor & Kuala Lumpur

Ms. Chitra Perumal

DHRRR Malaysia

Zone 6 - Negeri Sembilan

Mr. Joseph William

MGB Negeri Sembilan

Zone 7 - Melaka

Mr. Anandan Shanmugam

ASTI

Zone 8 - Johor

YB Raven Krishnasamy

Putera MIC

Zone 9 - Pahang & Kelantan

Mr. Jayashri Selvendran

PERINNBAM

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Abbreviations

CCI	Centre for Community Initiatives
DHRRA Malaysia	Development of Human Resources in Rural Areas, Malaysia
GMI	German-Malaysian Institute
ISRO	Indian Space Research Organisation
MITC	Melaka International Trade Centre
MISI	Malaysian Indian Science Intellectuals
MCEF	Malaysian Community & Education Foundation
MIYUGA	Melaka Indian Young Undergraduates Graduates Association
MGB	Majlis Guru Besar
NSFYC	National Science Fair for Young Children
NGO	Non Governmental Organization
NLFCS	National Land Finance Co Operative Society
PERINNBAM	Pertubuhan Kebajikan dan Amal India Baru Malaysia
PR	Public Relations
PPT	Power Point Presentation
Q&A	Question and Answer
SLSF	School Level Science Fair
SFYC	Science Fair for Young Children
TNB	Tenaga Nasional Berhad
USM	Universiti Sains Malaysia
UTHM	Universiti Tun Hussein Onn Malaysia
UKM	Universiti Kebangsaan Malaysia
UM	Universiti Malaya
WGC	Working Group Committee
Youth MC	Pertubuhan Graduan Belia India



Executive Summary

The Science Fair for Young Children is a premier project in Malaysia for the younger generation to increase their interest in science. Our children need to be totally involved and immersed in the learning of science and exercise their scientific skills through science based activities which are fun and exciting. Therefore science fairs are ideal in accomplishing the objective by giving students an opportunity to learn science and develop their scientific thinking in greater depth. The Science Fair for Young Children is an event that helps enrich and demonstrate Tamil school students talents at a young age and to prepared them for future enhanced learning experiences in science.

This year's Science Fair for Young Children is a group effort by the Association of Science, Technology & Innovation (ASTI), Malaysian Community & Education Foundation (MCEF), HM Council, Putera MIC, Development of Human Resources in Rural Areas Malaysia (DHRRRA Malaysia), Negeri Sembilan's HM Council, Youth MC and PERINNBAM. As our official broadcaster, Astro Vaanavil and print media partner, Malaysian Nanban fulfilled their role and purpose with utmost professionalism.

The programme was supported by the Prime Minister's Department, Malaysian Community & Education Foundation (MCEF), Vijayaratnam Foundation, the Hay Group and many other organisations. We would like to take this opportunity to thank YAB Dato' Sri Haji Mohd Najib bin Tun Haji Abdul Razak, the Prime Minister of Malaysia, for being a great supporter and approving a generous funding for this year's Science Fair for Young Children.

We are also grateful to all our other funders, donors, Tamil School Headmasters, Teachers, PIBGs and all those who helped make this event an overwhelming success.

The Mission of SFYC has always been clear and simple – to engage and educate Tamil school students about the quality of science, science related topics or capsules that will fascinate them with the wonders of scientific discovery and spark their interest in future scientific endeavours. In addition, SFYC was formed to empower the students in the learning process and provide them with the needed tools in their endeavour to satisfy their curiosity during their path of discovering scientific truths. They are also encouraged to put forward their ideas to the public through presentation of the project during the event. This also serves as a platform which helps boost their confidence and their communication skills of transferring their knowledge to others.

This year, we have successfully organised Science Fairs at 3 levels; the School Level, Zone Level and National Level. The School Level Science Fair was held from February to September 2013. The response to the School Level Science Fair this year was overwhelming as we achieved our target with 423 schools taking part. An estimated 98,000 students have participated in School Level Fairs.

The Zone Level Science Fair was held in the months of May and June 2013. A total of 282 schools participated in the fair which was held in 9 zones across Malaysia. The presentations by the students during the fair were wonderful considering their age and much of them being from rural areas.

The 60 finest schools were selected to participate in the National Level Science Fair which was held from 19th July until 21 July 2013 at the German Malaysian Institute, Bangi, Selangor. The three day national event was very successful with the attendance of over 5000 people. The event was attended by YB Datuk Seri Dr.S.Subramaniam the Minister of Health Malaysia, and YB Tuan P.Kamalanathan, the Deputy Minister of Education. The top 3 winners of the Innovation Category, top 3 winners of the Conference Paper Presentation and the top 10 winners of the Science Fair Category were appreciated on stage.

According to our Research and Development (R&D) survey report, this year, the involvement and commitment of our young scientists was extraordinary as more than 90% of those who were surveyed said that they really enjoyed the SFYC. A total of 1655 were surveyed which includes students, teachers and visitors. The headmasters, teachers and parents indicated they really wanted the event to continue to be organised every year. Also according to the Tamil school science teachers the involvement of the students in classroom teaching during the science subject had improved greatly. The SFYC students were more eager to be involved in classroom activity and this is an indication that the SFYC had achieved the objective in cultivating the scientific learning skills amongst students. A more detailed study of the effectiveness of Science Fair is currently underway.

The success of the SFYC 2013 was the cumulative effort of the SFYC Working Group Committee (WGC), coordinators, event committee and all other volunteers who fulfilled their commitment with great enthusiasm. Moreover, the continued involvement of Tamil school headmasters, teachers and parents was crucial as they are the pillars of this event. Our Post-mortem showed that it can be further improved by having more professionals with a science background in the WGC and also in the Zone Level organising team.

Therefore, there is a need for more publicity and further improvement in the marketing approach through mass media and social media as this will help source more parents and the general public who want to be involved in projects like the SFYC. The issue is also currently being addresses by engaging more University lecturers and students.

With greater adult participation, the primary school students in turn will be more motivated and encouraged to participate in the SFYC and also to be involved in other scientific activities.

'Realise Your True Potential'
'Create Your Own Futures'





1 INTRODUCTION

1.1 Summary

The best way to learn science is by doing experiments and drawing an inference from it rather than just reading, understanding and remembering the contents. Science students especially the young should be encouraged to learn science by doing projects that will bring to "life" underlying scientific concepts. By doing this they can understand the concept clearly and adopt them in their daily life.

Recognising this urgent need, a group of community based non-profit organisations developed the Science Fair for Young Children, or SFYC, an annual event that has been spurring primary school children to discover the joys of science since 2007. SFYC is organised jointly with the Tamil schools with over 15,000 children participating every year at the school, zone and national levels.

Besides organising the fair at Zone and National Levels, the SFYC organising team also encourages the schools to hold School Level Science Fairs (SLSF). The organisers are of the opinion that School Level Science Fairs and Zone Level Science Fairs have a better impact and benefit to students interested in science. Each school was given prizes to organise their own SLSF and training was provided on how to organise these fairs.

This year, a total of 423 schools successfully organised the School Level Science Fairs in their schools and 282 schools nationwide participated in these fairs which were held in 9 zones. The National Level event was held from 19 - 21 July 2013, at the German-Malaysian Institute (GMI) in Bangi. The total expenses for organising the Schools, Zones and National Level Science Fairs amounted to **RM 695,873.84**.

1.2 Background

Science is the systematic study of nature and there is an infinite amount of knowledge to be gained from this. While scientific facts are important, if the basic methods employed to discover or learn about them are not followed it could, hamper scientific progress.

We use our five senses to see, taste, smell, feel and hear, and explore the world around us. As Edwin Hubble, the American astronomer who first demonstrated the existence of galaxies outside the Milky Way once said, - *“equipped with his five senses, man explores the universe around him and calls the adventure Science”*. Our senses are the gateway keys to the world of science.

Students learn science with greater interest when it is more 'hands-on' or experimental, whereby they are led on a path of discovering scientific truths as they seek to satisfy their curiosity.

Science Fairs are ideal as they give students an opportunity to learn a scientific concept in greater depth, while simultaneously allowing them to:

- Use scientific methods to develop an understanding of controls and variables;
- Take an open and creative approach to problem solving;
- Sharpen their writing skills and their ability to work in a team, to plan and execute tasks;
- Develop their public speaking skills as they present projects to schoolmates and judges;
- Compete and be recognised for academic achievement-- the judging process also provides students with the invaluable experience of developing poise and thinking on their feet.

In 2003, a team was set up to organise the Young Scientific Explorers, and a group of volunteers visited schools to demonstrate simple yet exciting projects to students followed by a trip to the National Science Centre. Upon its success, and recognising the benefits of a science fair, we initiated the SFYC in 2006.

A team comprising of scientists and educationists was formed and tasked with developing the concept, materials and the supporting structure to implement a pilot project. The following year, the first SFYC was held at the Dewan Tunku Canselor, University Malaya and it was a big success with 49 teams from Selangor and Wilayah Persekutuan taking part. The enthusiasm shown by the participating students was simply electrifying!

The SFYC was then expanded nationwide in 2008 with 197 teams from eight states participating. The final event was held at the National Science Centre, and was graced by the Chief Secretary of the Education Ministry, Tan Sri Dr. Zulkurnain bin Haji Awang.

In 2009, a total 207 teams participated in the State Level Science Fairs and the 60 best teams were selected for the national event which was staged at the Kelab Kilat (TNB Hall), in Kuala Lumpur.

The following year, 285 teams successfully took part in the State Level events in 9 states nationwide and the national event was held at the AIMST University with participation of the 60 best teams. The state level science fair 2011, 2012 and 2013 was staged in 9 states nationwide with 274, 269 and 282 schools taking part respectively. The national event of 2011, 2012 and 2013 was held at the German-Malaysian Institute (GMI) with 60 top teams taking part.



1.3 Objectives of SFYC 2013

- To review and improve the resource materials—the 'SFYC Folder'—provided to students, teachers and co-ordinators of SFYC; to add new science projects to the sample projects already available.
- To train science teachers from schools on 'hands-on' science, science projects and encourage them to organise school level science fairs.
- To encourage more schools to organise School Level Science Fairs.
- To empower co-ordinators to organise the Zone Level Science Fairs.
- To organise a National Level Science Fair for the 60 best science projects.
- To encourage the students to participate in National and International Science Competitions/ Exhibitions/Fairs.
- To introduce an Open Category Competition on innovation



1.4 Methodology

The School Level Science Fair was organised by the working group and the secretariat. Last year's booklet was revised based on the comments from teachers on randomly selected schools. A special training session was conducted in all the 9 zones. During the training the booklet and VCD were distributed to the representatives from each school. The purpose was to encourage the schools to organise their own School Level Science Fair by giving them as much moral and technical support as possible.

Milestones for SLSF 2013

Table 1.1: Milestones of SLSF 2013 (October 2012 – October 2013)

Item	Time Frame
School Level Science Fairs Meetings	Oct 2012
Booklet & Resource Materials Preparation	Oct- Nov 2012
Coordinators Meeting & Presentation on SLSF to Coordinators	Dec 2012
School Level Science Fairs Soft Launching	Dec 2012
Sending of Letter to schools	Dec 2012 - Jan 2013
School Level Science Fairs Teachers Training	Jan- Feb 2013
School Level Science Fairs in Schools	Feb- Sep 2013
Closing of School Level Science Fairs	Sep 2013

The task of conducting the Zone and National Level Science Fairs was given to the Working Group and the Secretariat. For the Zone Level Science Fair, the handbook was revised based on the feedback from participants of previous years. The handbook was then compiled as a folder and also in VCD format. The VCD was distributed to the participating schools during the teachers' training and workshops.

Milestones SFYC 2013

Table 1.2: Milestones of SFYC 2013 (October 2012-October 2013)

Item	Time Frame
SFYC 2013 Workshop	Oct 2012
Identify Partner NGOs and State Coordinators	Oct - Nov 2012
Form SFYC Working Group Committee	Nov 2012
Develop Detailed Implementation Plan for SFYC 2013	Nov 2012
Train Coordinators on conducting State Level Science Fairs	Dec 2012
State Level Resources, Materials & Experiment Review & Finalization	Nov 2012 - Jan 2013
State Level Training & Workshop for Teachers	Feb - Mar 2013
State Level Science Fairs	Apr - May 2013
National Level Science Fair	Jun 2013
Post-Mortem of SFYC 2013	Jul - Aug 2013
SFYC 2013 Final Report Preparation	Aug - Oct 2013

1.5 Zone Categorisation



Figure 1.1: Zone Categorisation of SFYC

Table 1.3: Number of Tamil Primary Schools in Malaysia

Zone	States	Total Tamil Schools
Zone 1	Kedah & Perlis	59 Schools
Zone 2	Pulau Pinang	28 Schools
Zone 3	Perak	134 Schools
Zone 4	Selangor	97 Schools
Zone 5	Wilayah Persekutuan, Kuala Lumpur	15 Schools
Zone 6	Negeri Sembilan	61 Schools
Zone 7	Melaka	21 Schools
Zone 8	Johor	70 Schools
Zone 9	Pahang & Kelantan	38 Schools
TOTAL		523 Schools

1.6 Organisations In Consortium

This year's Science Fair for Young Children is a group effort by:

- Association of Science, Technology and Innovation (ASTI) as the secretariat ,
- Malaysian Community & Education Foundation (MCEF),
- TAMIL SCHOOLS Head Masters Council,
- Putera MIC,
- Development of Human Resources in Rural Areas Malaysia (DHRRRA Malaysia),
- Negeri Sembilan's Headmaster Council,
- 1 Indian Student Movement,
- Pertubuhan Graduan Belia India (Youth MC)
- Pertubuhan Kebajikan dan Amal India Baru Malaysia (PERINNBAM)
- ASTRO served as our official broadcaster
- Malaysian Nanban as our official print media partner

The details of the organisation structure and the responsibilities of each group are shown in figure 1.2 and Table 1.4.

The organisation structure is as follows:

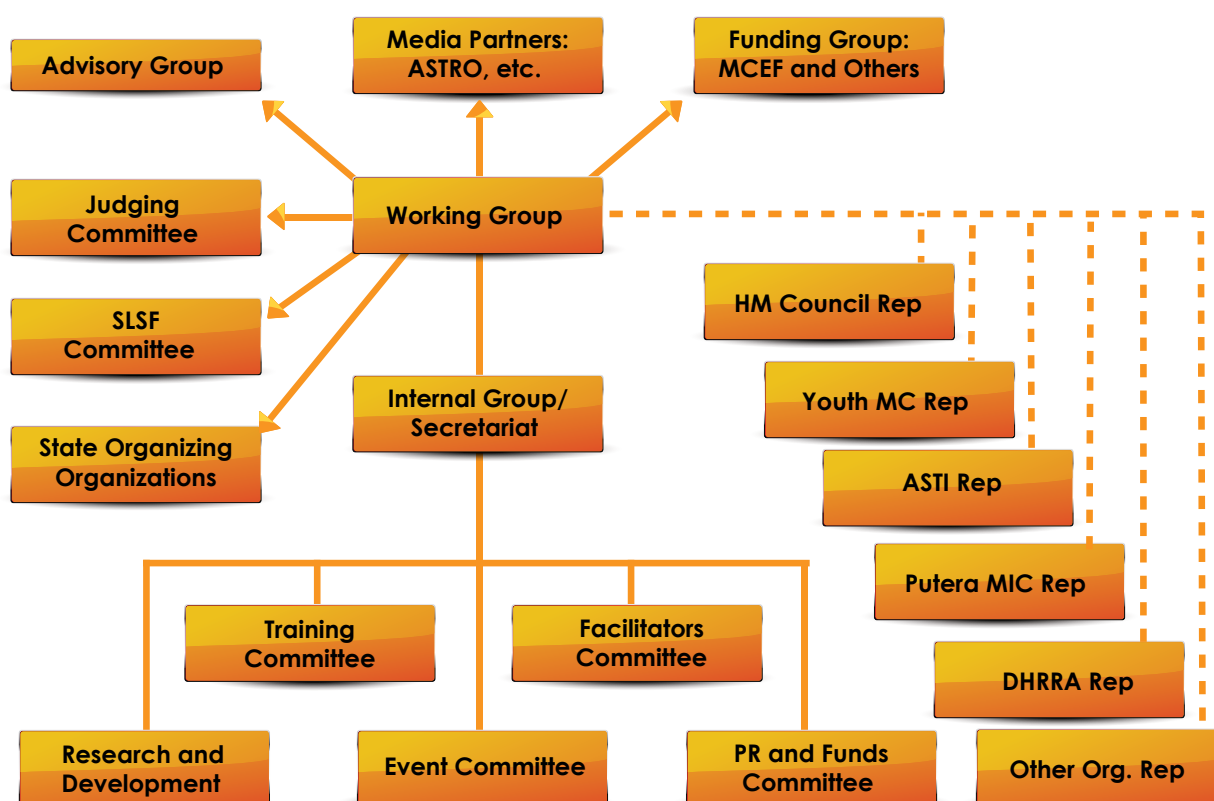


Figure 1.2: The Organisation Structure of the Science Fair for Young Children 2013

Table 1.4: Responsibilities of Each Group

Groups	Members	Job Function
Advisory Council	Advisors: Dr.Mohd Yunus Mohd Yasin Dr.Subramaniam Mr.Elanjelian Maj.Dr. Vikneswaran	<ul style="list-style-type: none"> • Policy Making body • Meet Twice a Year and when needed • Intellectual Property (IP) owner SFYC • Take over the SFYC after the Working Group Committee Dissolves
Working Group Committee (WGC)	Partner organisation representatives, Project Advisor(s), and Project Director, who will be the chairman.	<ul style="list-style-type: none"> • Implementation body • Decision making on implementation • Financial approval at WGC level • Delegate and monitor the project • Guide the Internal Group • Meet every fortnight
Internal Group	Project Director, and SFYC Project Officers	<ul style="list-style-type: none"> • Plan and implement SFYC 2013 • Prepare weekly progress reports by each department for the Working Group's consideration • Meet every week • Provide all administrative support for the SFYC. • Organize Working Group and Internal Group meetings, prepare minutes and reports • Co-ordinate with the Facilitators and Judging Groups, and provide assistance as needed • Provide information on the progress to the relevant groups • Report to the Project Director • Core coordinator in the implementation of the projects
Judges Committee	Volunteers selected to serve in the National SFYC	<ul style="list-style-type: none"> • Review the judging manual and upgrade the judging instruments • Work with state coordinators to identify suitable judges for the state level science fairs • Meet state level judges as needed, provide training and guidance
Schools Level Science Fair Committee	Volunteers Chaired By the Project Advisor	<ul style="list-style-type: none"> • Provide materials for the running of the School Level Science Fair. • Conduct road shows and training in the respective states. • Work with the Zone coordinators to make the programme a success.

Groups	Members	Job Function
State SFYC Organisers	State Level Partner organisations and Coordinators	<ul style="list-style-type: none"> • The State committees will be given a free hand to run their own science fair within the broad guidelines set by the Working Group. Seed funding will be given to the state committee, provided the Key Performance Indicators (KPI) are met. • The State committees that fail to meet the KPI will not be provided with any funds, and the fair may not be held in the said state. The seed funding, as per the proposal, will be returned to the donors. • The State committees are required to recruit sufficient volunteers to serve as facilitators and organising team members. • The State committees are encouraged to seek their own means of funding to cover the expenses incurred, based on their plan. • The respective schools may request to change the zones if there are good reasons (e.g. Distance to the State Committee's HQ). The acceptance of their request is at the full discretion of the Working Group.
Facilitators Group Implementation Committees	Teachers and Volunteers (University students)	<ul style="list-style-type: none"> • Help in organizing Zone Level and National Level Fair

1.7 Achievements of the Project

The progress of the Science Fair over the last 6 years is as follows:

Table 1.5: Progress of the Science Fair over the last 7 years

Year	Zones	No. of Schools Participated	No. of Teams Participated	No of Students Participated
2007	Selangor and Wilayah Persekutuan Only	44 Schools	49 Schools	49 x 5 Students=245
2008	National Level (6 Zones)	180 Schools	197 Schools	197 x 5 Students =985
2009	National Level (6 Zones)	188 Schools	207 Schools	207 x 5 Students =1,035
2010	National Level (9 Zones)	263 Schools	285 Schools	285 x 5 Students =1,425
2011	National Level (9 Zones)	274 Schools	274 Schools	274 x 5 Students =1,370
2012	National Level (9 Zones)	269 Schools	269 Schools	269 x 5 Students =1,345
2013	National Level (9 Zones)	282 Schools	282 Schools	282 x 5 Students = 1,410

This year, the Zone Level Science Fair was conducted in 9 zones, with 282 Tamil schools taking part. 60 schools were shortlisted to take part in the National Level Science Fair 2013 which was held at the German-Malaysian Institute (GMI), Bangi from 19 - 21 July 2013. The performance of schools that had organised School Level Science Fairs and participated in the Zone Level Science Fairs, was much better than all the other schools at the National Level Science Fair.

The organisers were pleasantly surprised and are happy to acknowledge that the participating students from each zone had improved their presentation and public communication skills during their presentation at the National Level Science Fair. The students, through hands-on experiments, brought science to life as they tackled investigative questions which helped them develop and demonstrate their interests and knowledge in science.

Over the years, the organisers have noted improvement in the thinking process of the Tamil school students who participate in the SFYC and noticeably among them are:

- Students approached problems using scientific methods.
- Students asked questions, formed hypotheses and created experiments to test their hypotheses.
- Students studied recorded data and drew conclusions from it.
- Students communicated their scientific research articulately and confidently to others.
- Students worked cooperatively as a team of 3-5 persons.
- Students budgeted their time, organised their work into manageable chunks, kept to a schedule and delegated work diligently.
- Students developed their reading, writing, research and computer skills.
- Students were able to answer questions from different perspectives.
- Students were confident during the presentations.

2 SCHOOL LEVEL SCIENCE FAIR

2.1 Introduction

There are three simple reasons why science is important for our children:

- 1) Children love science because it engages their curiosity,
- 2) Science provides practical tools for understanding everyday life.
- 3) Science advances critical thinking, problem solving, and creativity in early learners.

The School Level Science Fair (SLSF) was introduced in Tamil Schools in 2009 as a pilot project in the state of Johor or Zone 8. The project was conducted in all 70 Tamil Schools in Johor and it was a great success.

Through that pilot project, the Working Group Committee concluded that School Level Science Fairs create a better impact and it would benefit more students nationwide. Therefore, they would aim for School Level Science Fair to be introduced into all states in Malaysia.

As a result, the committee undertook the task of conducting and implementing the fair in every zone. The first national project was conducted by a special school level science fair committee chaired by the project founder Dr. Mohd Yunus Mohd Yasin. In 2010 we allocated RM300 per school to assist them to organise school level science fairs resulting in 82 schools staging such fairs.

In 2011, we hoped that at least 250 schools nationwide would participate in the school level science fairs, however, we managed to encourage 256 schools to successfully organise the fair. Last year we targeted about 325 schools nationwide to conduct the school level science fairs the overwhelming response resulted in 338 schools being able to successfully stage the fair in their schools.

For 2013, a SLSF booklet related to the school syllabus was developed with the help of Dr. Subramaniam Gurusamy. The content was divided from Standard 1 to Standard 6. A CD was also prepared with sample proposals, experiments, reports, modules and some voice recordings of prominent world scientists.

2.2 Seed Funding

Every school that confirmed its participation by sending their proposal to the zone coordinators were given seed funding of up to RM450 or in kind (the prizes, etc.). The funding criteria was based on the number of students in the school as per table 2.1 below.

Table 2.1: Payment Criteria for the School Level Science Fair

Students (Average Per School)	Payment (Allocation)
$25 \leq$	UP TO RM 250
$50 \leq$	UP TO RM 300
$100 \leq$	UP TO RM 350
$200 \leq$	UP TO RM 400
$300 \leq$	UP TO RM 450

Based on the above mentioned allocation, this year we centralized the funding disbursement method in all zones, where each school was given 100 medals for participants, certificate of participation for all the students in school and 10 souvenirs for judges.

The timeframe given to organize the School Level Science Fair was from February 2013 until September 2013. This year, 423 Schools out of 523 Tamil Schools participated in the project.



2.3 Implementation of School Level Science Fair 2013

The School Level Science Fair for Young Children started in January, 2013. The coordinators send out an official invitation letter inviting teachers and headmasters/headmistress to participate in School Level Science Fair Teacher Training.

The School Level Science Fair Teacher Training was conducted in all the 9 zones during January and February 2013 and a total of 386 schools attended the training. The Training was conducted based on the agenda as stated in Table 2. 2:

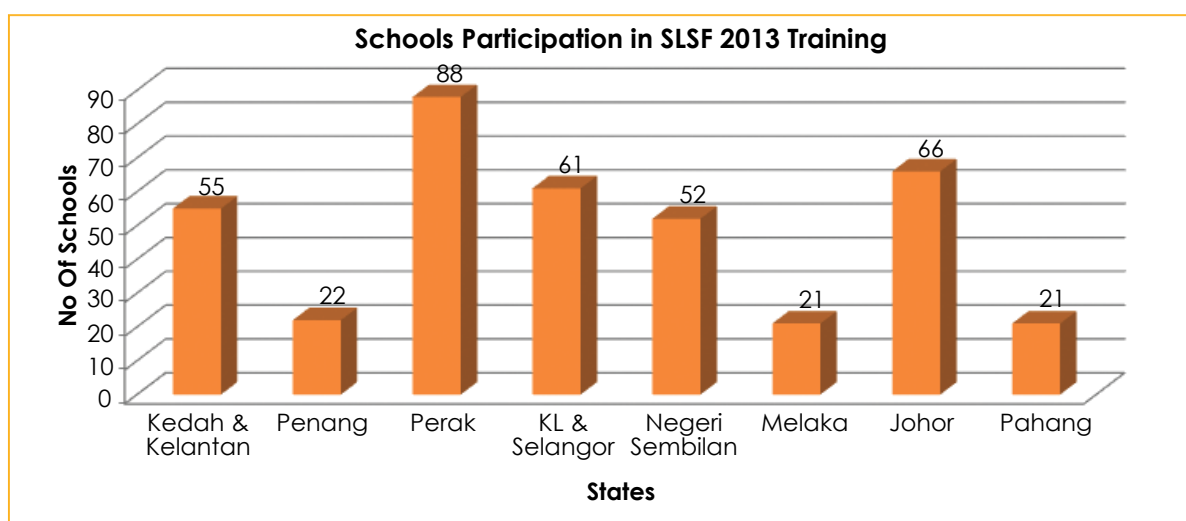
Table 2.2: SLSF Training Agenda

Time	Details
9.00am to 9.30am	Arrival and Registration
9.30am to 9.35am	Welcoming Speech By Coordinators
9.35am to 9.40am	Opening Speech by Headmaster's Council Head
9.40am to 9.45am	Opening Speech by Penyelia Sekolah Tamil
9.45am to 10.45am	SLSF 2013 Introduction and Overview Presentation 1 <ul style="list-style-type: none"> • Introduction of Partner Organizations • Organization's Structure • Why Science Fair? • How to Organize Science Fair? • Roles of Headmaster, PIBG, Teachers • Theme of SFYC 2013: Magic of Science • Website Usage Guideline • Introduction of SFYC Alumni
10.45am to 11.00am	Tea Break
11.00am to 11.15am	Team Building Activity
11.15am to 12.00pm	Experiment and CD Content Explanation Presentation 2 <ul style="list-style-type: none"> • CD Content • Experiment • Video related to Experiment • Scrap Book • Log Book & Report Book
12.00pm to 12.15pm	Experience Sharing Session by Teachers
12.15pm to 1.00pm	Workshop Session Presentation 3 <ul style="list-style-type: none"> • Proposal Writing & Report Writing • Delivering information to the teachers in school • Delivering information to the students • Implementation of SLSF • Theme: Magic of Science • Activities for Visitors
1.00pm to 1.15pm	Motivational Video
1.15pm to 1.30pm	School Level Science Fair Evaluation
1.30pm	Certificate Presentation & Lunch

The participation of schools in the School Level Science Fair Teacher Training is as stated below in Table 2.3.

Table 2.3: Participation of the schools in the SLSF Teacher Training

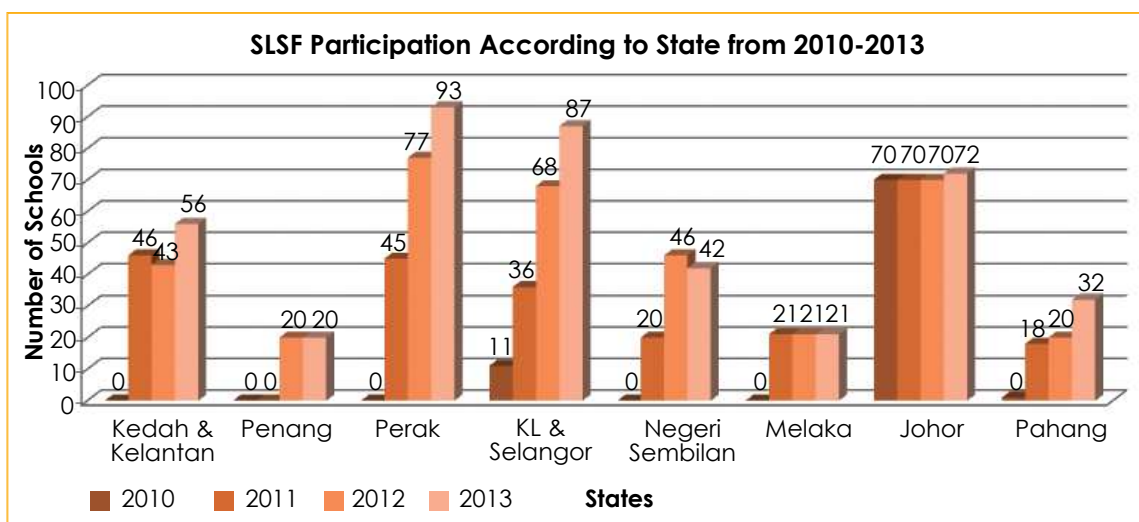
Zone	State	Training Date	Training Venue	Participated Schools
Zone 1	Kedah & Perlis	16 Feb 2013	Club Laguna Merbau, Sungai Petani	55
Zone 2	Pulau Pinang	17 Feb 2013	University Sains Malaysia, USM	22
Zone 3	Perak	19 Jan 2013	SJK (T) Thiruvalluvar	25
		20 Jan 2013	SJK (T) Tapah	17
			SJK (T) Kg. Simee	25
			SJK (T) St Theresa Convent	21
Zone 4 & 5	Selangor & Kuala Lumpur	2 Feb 2013	SJK (T) Batu Caves	61
		3 Feb 2013	SJK (T) Vivekananda PJ	
Zone 6	Negeri Sembilan	9 Feb 2013	SJK (T) Convent Wawasan	52
Zone 7	Melaka	23 Feb 2013	Melaka State MIC Office	21
Zone 8	Johor	19 Jan 2013	D' Impian Hotel in Parit Raja, Batu Pahat	66
Zone 9	Pahang & Kelantan	16 Feb 2013	SJK (T) Mentakab	21
TOTAL				386



The participation in the School Level Science Fairs is increasing every year and this reminds us even more on the importance of the support given by the schools for this programme. The details of their participation over the past 4 years are shown below in table 2.4.

Table 2.4: Schools Participation in SLSF 2010, 2011, 2012 and 2013

Zone	State	Total Schools			
		2010	2011	2012	2013
1	Kedah & Perlis	-	46	43	56
2	Pulau Pinang	-	-	20	20
3	Perak	-	45	77	93
4 & 5	Selangor & Kuala Lumpur	11	36	68	87
6	Negeri Sembilan	-	20	46	42
7	Melaka	-	21	21	21
8	Johor	70	70	70	72
9	Pahang & Kelantan	1	18	20	32
TOTAL		82	256	365	423



3 ZONE LEVEL SCIENCE FAIR

3.1 Introduction

The participation in the Zone Level Science Fair has been continuously increasing over the years. In 2008 and 2009 the organisers focused on 6 zones. Then, in 2010 due to both the experience gained by the organisers on how to run the Zone Level Science Fair and the need to give as many schools as possible the opportunity to take part in the Fair, the organising committee redesignated the zones and increased the number of Zones to nine. This Zoning has been used since then as it has proven to be manageable by organisers and acceptable by schools.

In order to accommodate the increase in the number of schools taking part, in 2011, another change was made to the Zone Level Science Fair. This was a change in the number of teams each school was allowed to enter. Previously, two teams were allowed from each school, this was reduced to one. This change however, due to the increase in the number of schools taking part did not result in a drastic reduction the number of teams participating. In fact 2013 saw a total of 282 teams participating nationwide.

The zone categorisation and details of the participation in the previous years are shown below:

Table 3.1: Comparison of Zone Categories

Zone	2008 and 2009	2010, 2011, 2012 and 2013
1	Kedah, Pulau Pinang & Perlis	Kedah and Perlis
2	Perak	Pulau Pinang
3	Selangor & Kuala Lumpur	Perak
4	Melaka and Negeri Sembilan	Selangor
5	Johor	W.P Kuala Lumpur
6	Pahang & Kelantan	Negeri Sembilan
7	-	Melaka
8	-	Johor
9	-	Pahang and Kelantan

Table 3.2: Participation of Schools in Zone Level Science Fair in 2008 and 2009

Zone	State	Total Schools	
		2008	2009
1	Kedah, Pulau Pinang & Perlis	28	28
2	Perak	18	15
3	Selangor & Kuala Lumpur	58	74
4	Melaka & Negeri Sembilan	4	3
5	Johor	57	54
6	Pahang & Kelantan	15	14
TOTAL		180	188

Table 3.3: Participation of Schools in Zone Level Science Fair in 2010, 2011 and 2012

Zone	State	Total Schools		
		2010	2011	2012
1	Kedah & Perlis	17	41	34
2	Pulau Pinang	16	16	19
3	Perak	50	47	53
4	Selangor	54	56	35
5	Kuala Lumpur	14	13	10
6	Negeri Sembilan	18	18	30
7	Melaka	21	21	21
8	Johor	59	45	52
9	Pahang & Kelantan	14	17	15
TOTAL		263	274	269

This year, the Zone Level Science Fair was held in May and June, about a month before the National event. The short listed schools for the National Level Fair were given one month time to improve their experiment. The details of the Zone Level Science Fairs and the schools participation at each zone are as shown below:

Table 3.4: Zone Level Science Fair 2013 Dates and Venue

Zone	States	Dates	Venues
1	Kedah & Perlis	Saturday, May 18, 2013	AMIST University
2	Pulau Pinang	Saturday, June 29, 2013	University Sains Malaysia
3	Perak	Saturday, June 22, 2013	Politeknik Sultan Azlan Tanjung Malim
4	Selangor	Saturday, June 29, 2013	MMU Cyberjaya
5	Kuala Lumpur	Saturday, June 29, 2013	MMU Cyberjaya
6	Negeri Sembilan	Saturday, June 22, 2013	IPRM Seremban
7	Melaka	Sunday, June 23, 2013	Melaka Media House
8	Johor	Saturday, June 29, 2013	UTM Skudai
9	Pahang & Kelantan	Sunday, June 16, 2013	SMK Hwa Lian, Mentakab

Table 3.5: Schools Participation in the Zone Level Science Fair 2013

Zone	State	Total Schools
1	Kedah & Perlis	52
2	Pulau Pinang	15
3	Perak	56
4	Selangor	47
5	Kuala Lumpur	10
6	Negeri Sembilan	30
7	Melaka	21
8	Johor	41
9	Pahang & Kelantan	19
TOTAL		282

Note: For the list of the schools that participated in the Zone Level Science Fair, kindly refer to Appendix A.



3.2 Implementation Of Zone Level Science Fair

3.2.1 ZONE 1: KEDAH & PERLIS

The Zone 1 was coordinated by Mr.Sadhis Kumar and students from the University Utara Malaysia (UUM). The Zone Level Science Fair was held on 18 May 2013 at AIMST University. A total of 52 schools were participated in the Zone Level Fair (ZLSF) and the top 10 schools were selected to participate in the National Level Science Fair. Even though the coordinator and his team were conducting the fair for the primary time, they successfully managed to encourage 89.7 percentage schools took part and perform well in ZLSF with assist by Mr.Ramakrishanan, Penyalia Sekolah Tamil and Headmaster council .
(For account details, please refer to Appendix B)

3.2.2 ZONE 2: PENANG

The Zone 2 Science Fair was coordinated and organised by our new partner YOUTH MC (Pertubuhan Graduan Belia India), headed by Mr Edwin Anand Raj. The zone fair was conducted at University Sains Malaysia, Penang on 28 June 2013. The fair was officiated by Datuk Vinod Shekhar, a scientist and entrepreneur. A total of 14 schools successfully participated in the fair and the top 3 teams were selected for the National Fair. They managed to encourage 50 percentage schools took part in ZLSF. Mr. Edwin and his team have successfully organised the event.
(For account details, please refer to Appendix B)



3.2.3 ZONE 3: PERAK

This year, Zone 3 was organised by one of our partner organisations, DHARRA Malaysia and was coordinated by Mr.Suresh Kuppusamy. The zone fair was held on 22 June 2013 at the Politeknik Sultan Azlan Shah. The event was launched by Yang Berhormat Tuan. P. Kamalanathan, Deputy Minister of Education . A total of 56 schools successfully participated in the fair and the top 11 schools were selected to participate in the National Level Science Fair. This year was an improvement of increased 42 percentage schools participated in the event compare to last year.

(For account details, please refer to Appendix B)

3.2.4 ZONE 4 and 5: SELANGOR & KUALA LUMPUR

The Selangor and Kuala Lumpur Science Fair was organised by DHRRA Malaysia and coordinated by Ms. Chitra Perumal. The fair was held on 29 June 2013 at the Dewan Tun Canselor, Multimedia University Cyberjaya. The event was graced with the presence of YB Tuan P Kamalanatha, and the event officiated by Deputy Minister of Education and Y.B. Datuk Dr. Abu Bakar bin Mohamad Diah. A total of 43 schools from Selangor and 10 schools from Kuala Lumpur took part in the Zone Level event. They managed to encourage 44 percentage schools from Zone Selangor and 67 percentages from Kuala Lumpur took part in ZLSF. The top 8 schools from Selangor and the top 3 schools from Kuala Lumpur were chosen for the National Level event.

(For account details, please refer to Appendix B)

3.2.5 Zone 6: Negeri Sembilan

The Zone Level Fair was organised by the Negeri Sembilan Head Masters Council, headed by Mr Joseph William. The fair was held on 22 June 2013 at IPRM Campus Seremban and it was officiated by Mr. N. Govindarajoo, District Education Officer. A total of 30 schools successfully took part in the Zone Level Fair. The top 7 schools were selected to participate in the National Level Science Fair 2012. The organisers managed to increased 49 percentages schools participation in the Zone Level Fair.

(For account details, please refer to Appendix B)



3.2.6 Zone 7: Melaka

The Melaka Zone Fair was organised by ASTI, which was led by Mr Anandan Shanmugam. The team staged the fair on 23 June 2013 at Rumah Media, Melaka International Trade Centre (MITC). The closing ceremony was officiated by YB Datuk M.S Mahadevan Sanacy, the newly appointed exco member of the Melaka State Government. Datuk Mahadevan promised to give additional fund of RM500 for every participating school and an additional RM500 for the winning schools. For 4 successive years, the fair achieved 100 percent participation from all the 21 Tamil schools in Melaka. The top 5 schools were chosen to take part in the National Level Science Fair.

(For account details, please refer to Appendix B)

3.2.7 Zone 8: Johor

Johor Putera MIC and UTHM students teamed up to organise the Johor Zone Science Fair and the team was led by YB Raven Krishnasamy. The event was held on 29 June 2013, at University Teknologi Malaysia, Skudai. The guest of honour for the closing ceremony was Dato KS Malakrishnan, Johor State MIC president. A total of 41 schools were participated in the fair and the top 8 schools were selected to participate in the National Level Science Fair. The organisers managed to increased 56 percentages schools participation in the Zone Level Fair.

(For account details, please refer to Appendix B)

3.2.8 Zone 9: Pahang & Kelantan

The Pahang Zone Fair was organised by Pertubuhan Kebajikan dan Amal India Baru Malaysia (PERINNBAN) and coordinated by Mr. Jayashri Selvendran. The event was held on 24 June 2013 at SMK Hwa Lian, Mentakab and the chief guest was Mr Goonasekaran, the Pahang Menteri Besar's Special Officer with PERINNBAM Malaysia President Mr.U.Thamotaran. A total of 19 schools were participated in the fair and the top 5 schools were chosen to take part in the National Level Science Fair. The organisers managed to increased 50 percentages schools participation in the Zone Level Fair.

(For account details, please refer to Appendix B)

4 TRAINING AND DEVELOPMENT

4.1 Training Preparation And Progress

4.1.1 Science Fair Folder

The Science Fair folder is a key tool for the organisers, teachers, students, parents, facilitators and judges to implement the project effectively and efficiently. This folder was prepared for the first time in 2008 by the Working Group Committee (WGC) members and a group of professionals. The following year, the folder was revised, reviewed and translated into English and Tamil by the Working Group Committee (WGC) and Secretariat based on the comments from teachers, students, organisers and judges. This year, the folder was revised, new partially guided experiments were added and distributed in the form of VCDs to all the participating schools during the Zone Level Teachers Training. Some of the new schools were also given the hard copy folder/file. The content of the folder is as follows:

- How to use this folder: Explains how the folder should be used by each group.
- Science Projects, Scientific Methods and Science Fair: Simple explanation about what is a science project, scientific method and science fair.
- Organisers Manual: Basically gives an explanation on how to organise a science fair. Example in schools, class rooms, organisations, etc.
- Teachers Manual: Explains roles and responsibilities of the Science Teachers to guide the participants of the fair.

- Students Manual: Helps the students to develop their project and provides the format of writing a report.
- Parents Manual: Guides the participant's parents to motivate their child to perform well in SFYC.
- Facilitators Manual: Gives a guideline to the facilitators on how to facilitate so that they can help teachers and students during school visits.
- Judges Manual: Gives proper guidelines on how to judge a science project effectively. This manual had been improvised considerably after last year's feedback on the Judging criteria.
- Conference Paper: Guideline for conference paper preparation by the top 3 teams in each zone.
- Partially Guided Experiments: There were 20 partially guided experiments in English and Tamil to be chosen by the schools.

We hope that the manual will be helpful for the future members to organise science fair at Schools, District and Zone and also at the National Level. The manuals should be upgraded from time to time to improve the quality of the Science Fair for Young Children.

4.1.2 VCD Production

In previous years, all the materials in the SFYC folder were given out to schools in hard copy format but for the last two years the content of the folder was made into VCDs and were given to all the participating schools during the Zone Level Teachers Training. The content in the VCD has been upgraded with new information to help the schools prepare for the Zone Level and National Level Fairs. The content of the VCD is shown below:

- i. Science Fair Folder Content (PDF Copy)
- ii. Booth Presentation of NSFYC (Video)
- iii. Conference Paper Presentation of NSFYC (Video)
- iv. Booth Setup and Preparation of NSFYC (Video)
- v. Capsule (Video)

4.1.3 Training for Trainers

Training for Trainers was conducted by Dr. Subramaniam Gurusamy, the advisor of the Science Fair for Young Children. Before the training team conducted the Zone Level Science Fairs teachers training, they were briefed by Dr. Subramaniam on the agenda and information to be delivered to the teachers. The content of the training for trainers and teachers is shown below:

Session 1 (30 Minutes)

- Introduction of Zone Level Science Fair by Organisers (20 Minutes).
- Presentation on the Survey Form (5 Minutes).

Session 2 (45 Minutes) Workshop – Group Discussion

- All the teachers given water absorption with sponge experiment
 - I. Teachers were given 15 minutes to answer.
 - II. Discussion with sample answers
 - III. Two groups were selected to make a presentation.

Session 3 (20 Minutes)

- Judging Methodology (20 Minutes).

Session 4 (1 Hour 15 Minutes)

- Detailed explanation on all the 20 experiments (Based on Diagram & Clues).



4.2 Zone Level Teachers Training

The Science Fair for Young Children 2013 training session consisted of two phases which is the School Level Science Fair Training and the Zone Level Science Fair Training. The training was conducted in the participating schools together with the facilitators.

The training sessions were arranged by the respective zone coordinators and conducted by the trainers from the Working Group Committee.

The training sessions and materials were prepared and planned by the trainers from the Working Group Committee and the training dates were given by the respective zone coordinators in advance so that the training teams could make prior arrangements. All the School Level and Zone Level training sessions were conducted as stated below.

Table 4.1 : Details of Zone level Teacher Training 2013

Zone	State	Training Dates	Training Venue
1	Kedah & Perlis	6 April 2013	SJKT Ldg. Perbadanan
2	Pulau Pinang	17 March 2013	USM, Penang
3	Perak	16 March 2013	SJKT St Theresa Convent, SJKT Kg Simee
		17 March 2013	SJKT Tapah, SJKT Citambaram Pillai
4	Selangor	13 March 2013	SJKT Batu Caves
5	Wilayah Persekutuan	13 March 2013	SJKT Batu Caves
6	Negeri Sembilan	6 April 2013	SJKT Lobak, N.Sembilan
7	Melaka	13 April 2013	SJKT Kubu, Melaka
8	Johor	17 March 2013	UTHM, Johor
9	Pahang	17 March 2013	SMK Hwa Lian, Mentakab



5 NATIONAL LEVEL SCIENCE FAIR FOR YOUNG CHILDREN 2013

5.1 Overview

The National Science Fair for Young Children 2013 was a three day event which started on Friday evening and ended on Sunday evening. The details of the event are as follows:

Date	: 19th July 2013 – 21st July 2013
Venue for Accommodation	: Kolej Pendeta Za'ba, Universiti Kebangsaan Malaysia (UKM) : Hotel Reko Inn, Kajang
Venue for Science Fair Event	: Dewan Gemilang Mercuri Idaman, German Malaysian Institute (GMI), Bangi, Selangor



A special team was formed two months earlier by the Working Group Committee to organise the 3 days National Science Fair for Young Children 2013. The event committee was led by Ms.Umahsankariah Muthunaikar. 13 departments were formed and the tasks were delegated to each Head of Department (HOD). The list of Heads of Departments is shown in Table 5.1 below. The NSFYC was helped by more than 75 volunteers from UNICS and including zone volunteers assigned by the zones coordinator.

Table 5.1: List of Heads of Departments for the National Science Fair for Young Children 2013

No	Name	Position
1	Mr. Vignaesvaran Jayendran	Project Director and Advisor for Event Committee
2	Ms. Umahsankariah Muthunaikar	Head of Event Committee
3	Ms. Vanitha Vasu	Event Committee Assistant
4	Ms. Eesvari Sawndran	Head of Accommodation Department
5	Ms. Gunasundari	Head of Registration Department
6	Mr. Kugeneswaran Tamilmany	Head of Press Management
7	Ms.Vijia Letchumy Rajoo	Head of Judging & Conference Paper Department
8	Ms. Thinaheswary	Head of Conference Paper Department
9	Ms. Archana	Head of Stage and Prize Management
10	Mr. Tilagan	Head of Food and Beverages Department
11	Mr. Noorul Huda	Head of Games and Quizzes Department
12	Mr. Jegatheswaran	Head of Crowd Management
13	Mr. Thirunaugarasan	Head of Media Management
14	Ms. Kalai	Head of Ushering Department
15	Mr. Vikneswaran	Head of Facilitators and Volunteers Management
16	Mr. Saktivel	Head of Hall Management
17	Mr. Sharvin Rao	Head of Traffic, Transportation and Security Department

The event was very effortlessly coordinated by all the volunteers and organised very well. The teams were well coordinated by the Head of Event Committee and all the HODs.

The events were coordinated as follows:

Day 1 (19 July 2013-Friday)

Participants and teachers from each zone started arriving from 2pm onwards. After registering at the German Malaysian Institute, the teachers attended the briefing session conducted by Ms.Umahsankariah and Mr. Gopinath . The briefing was mainly on the itinerary for the 3 days and rules and regulations of the premises and event. Meanwhile, the students and teachers placed their things at booth and took their dinner too. They then check-in into their rooms at Kolej Pendeta Za'ba, Universiti Kebangsaan Malaysia (UKM).

Meanwhile, the log book and report book which had been collected from the teams during registration were judged by a group of judges. The judging team prepared for the hands-on experiments for the following morning.

Sharped at 8.00pm, teachres and students were allowed to the multipurpose hall to set up the booth. Schools were given two (2) hours to set the booth. After booth set up, students and teachers went to their rooms for the next day preparation.



Day 2 (20 July 2013-Saturday)

On the second day, the participants and teachers start moving from UKM to GMI at 7.00am. After breakfast, the students and teachers allowed to booth touch up until 8.30am when they were involved in hands-on experiments for 1 ½ hours followed by the judging evaluation. The judging evaluation took nearly 3 hours.

Meanwhile, the teachers were involved in activities such as discussion sessions with the organising team, motivational talk, sharing sessions and Judging Department. Lunch was served from 12.00 noon to 1.00pm. The students continued with the judging evaluation. After the session, the teachers were given a set of books for the school, certificates and pen drives as a token of appreciation.

In the afternoon, the opening ceremony was held in the Dewan Gemilang Mercuri Idaman, German Malaysian Institute (GMI) and it was officiated by YB Datuk Seri Dr. S. Subramaniam, Minister of Health Malaysia. YB Datuk lauched new challenge trophy of National Science Fair for Young Children. YB Datuk Seri Dr. S. Subramaniam visited all the 60 booths and the students were very happy with his presence. This was a great motivation for our young scientist to be more involved in our event.

The participants were given refreshments from 4.00pm to 5.00pm and returned to UKM to prepare for the Conference Paper Presentation session. The dinner was served at 7.00pm, and then a Conference Paper Presentation was held in four different lecture halls at the German Malaysian Institute as 3 parallel sessions. The top three teams from each zone presented their research and findings from their experiments. A total of 18 teams participated in this section and the top 2 teams from 6 groups were selected for a VIVA session on the following day.





Day 3(21 July 2012 -Sunday)

The day started at 7.00am, where all the participants checked out from hostel at UKM and reached GMI. After breakfast, the participants prepared for the public viewing at 9.00am. Meanwhile the viva session was held at a Auditorium at GMI for the selected top 6 teams who then return to the main hall.

The public viewing officially started at 10.00am and went on until 3.00pm. During the session, a few booths were set-up at the entrance by partners and other organisations. Among them were the Science Fair for Young Children, Association of Science, Technology & Innovation (ASTI), VijayaRatnam Foundation, DHRRMA Malaysia, Perinnbam, Grolier Books and National Transplant Resource Centre. The Games and Quizzes Department conducted various games and quizzes for the public.

At the same time, there was a National SFYC Forum for all the Tamil School's Special Officers and Tamil School's Headmasters Councils Head and Zone Coordinators. This special forum was held in Puri Pujangga, Universiti Kebangsaan Malaysia (UKM) from 10am to 1.00pm. The forum was chaired by the Science Fair Advisory Board and the organising team.



At 3.30pm, the closing ceremony began and ended at 5.30pm. The guest of honour for the closing ceremony was YB Tuan P. Kamalanathan, Deputy Minister of Education and Higher Learning II. All the participants were given medals, science related books and certificates of participation. The top 3 winners of the Innovation Category received certificates and prizes worth RM 500, RM 400 and RM 300 respectively. The top 3 winners of Conference Paper Presentation, received certificates and prize money of RM 500, RM 400 and RM 300 respectively. Whereas the top 10 winners of the event received a trophy, certificates, science related books and prize money of RM2500, RM 2000, RM 1500, RM 1000 and RM 750 respectively. The list of NSFYC 2013 winners is as follows:

NSFYC WINNERS

1. SJK (T) CONVENT SEREMBAN 2, NEGERI SEMBILA
2. SJK (T) BANDAR SPRINGHILL, PORT DICKSON
3. SJK (T) JALAN SIALANG, JOHOR
4. SJK (T) JALAN YAHYA AWAL, JOHOR
5. SJK (T) BUKIT MERTA JAM , PULAU PENANG
6. SJK (T) LADANG WELLESLEY, KEDAH
7. SJK (T) ALOR GAJAH , MELAKA
8. SJK (T) RAMAKRISHNA, PULAU PENANG
9. SJK (T) KULAI BESAR , JOHOR
10. SJK (T) AIR MANIS , JOHOR

INNOVATION CATEGORY

1. SJK (T) RAMAKRISHNA, PENANG
2. SJK (T) JALAN SIALANG TANGKAK, JOHOR
3. SJK (T) VAGEESAR, SELANGOR

CONFERENCE PAPER PRESENTATION

1. SJK (T) MENTAKAB, PAHANG
2. SJK (T) LADANG WELLESLEY , KEDAH
3. SJK (T) LADANG LANCHANG, PAHANG



5.2 National SFYC 2013 Forum

For the second time, the Science Fair for Young Children organising committee staged the National SFYC Forum for all the Tamil School's Special Officers and Tamil School's Headmasters Councils and Zone Coordinators. The forum was organised to discuss ways to improvement of the project in an effort to reach out to more schools and increase the school's participation.

Table 5.2: List of people who attended the Science Fair National Forum 2013

No	Name	Position
1	Dr. Yunus Yasin	Founder
2	Dr. Subramaniam Gurusamy	Advisor
3	Maj. Dr. Vikneswaran Munikanan	Advisor
4	Mr. CM Vignaesvaran	Project Director I
5	Mr. Saravanan Vimalanathan	Project Director II
6	Mr. Paskaran Subramaniam	Pengelola Kanan Bahagian Sekolah
7	Mr. Nadarajah	Johor State Level Science Fair Advisor
8	Ms. Krishna Veni	Penyelia Sekolah-Sekolah Tamil Melaka
9	Mr. Kalidass	Penyelia Sekolah-Sekolah Tamil Pulau Pinang
10	Mr. Pushpanathan Appan	Penyelia Sekolah-Sekolah Tamil Pahang
11	Mr. Doraisamy	Majlis Guru Besar Selangor
12	Mr. Velayutham Ratnam	Majlis Guru Besar Selangor Pahang
13	Mr. Veerasamy Annamalai	Majlis Guru Besar Selangor Pulau Pinang
14	Mr. Joseph William	Majlis Guru Besar Selangor Negeri Sembilan
15	Mrs. M. Supaetchuny	Majlis Guru Besar Selangor Kuala Lumpur
16	YB Raven Krishnasamy	Johor Coordinator
17	Mr. Anandan Shanmugam	Melaka Coordinator
18	Mr. Suresh Kuppusamy	Perak Coordinator
19	Ms. Chitra Perumal	Kuala Lumpur & Selangor Coordinator
20	Mr. Jayashri Selvendran	Pahang Coordinator
21	Mr. Sadhis Kumar	Kedah Coordinator
22	Mr. Maha Devan (Representative)	Penang Coordinator



6 RESEARCH AND DEVELOPMENT DEPARTMENT

6.1 Experiments

A team was formed comprising of professionals from various fields. They developed a list of partially guided experiments which consisted of 20 experimental titles. All the experiments were then analysed for their relevancy, cost, applicability, difficulty, material availability, and safety. These experiments were then discussed and finalized with the core judges and advisors of SFYC. The finalized experiments were sent for translation into the Tamil language and once translated were submitted to all schools. The list of experiments is attached in Appendix C.

6.2 Surveys

This year the R&D department conducted the following surveys:

- I. School Level Science Fair Teacher's Training
- II. State Level Science Fair Teacher's Training
- III. State Level Science Fair for Young Children
- IV. National Level Science Fair for Young Children
- V. Survey on Effectiveness of Science Fair for Young Children

The surveys were analysed using SPSS Statistical Software version 19. The data collected from the surveys will be used to correct and upgrade our future projects. *(For further details on the surveys please refer attached CD.)*

7 PUBLIC RELATIONS

For Science Fair for Young Children 2013, the Public Relations (PR) Department, managed the flow of information between the organisers of Science Fair and the general public. Information about the Science Fair for Young Children programme was promoted to the public via press releases and interviews over national radio and television.

The flow of information between internal and external stakeholders was reached through various levels such as the School Level Science Fair, Zone Level Science Fair and the National Level Science Fair. Astro Vaanavil as our official electronic media and Nanban as our official print media highlighted our event throughout Malaysia. In addition, this year, for the first time, we approached the public via a "Road Show" at three (3) public places to promote the National Level Science Fair. Also, to draw attention to our road show, we used our official Mascot 'Arivan' as an identity of SFYC. The Public Relations activities carried out to promote the Science Fair for Young Children 2013 is shown below:

Launching and Fundraising

- Launching and Fundraising Dinner officiated by YB P. Kamalanathan, Hulu Selangor MP, on behalf of Human Resources Minister Datuk Seri Dr. S. Subramaniam on 28 February 2013 at Wisma Peladang, Kuala Lumpur.
- The Launching and Fund Raising Dinner was broadcast over RTM TV 2 News on 1 March 2013.
- The Launching and Fundraising Dinner was broadcast over ASTRO Vaanavil 360.

School Level Science Fair 2013

- Press release for School Level Teachers Training.
- Promotional Capsule which was sponsored by ASTRO was telecast over ASTRO Tamil Channels.
- Interview in ASTRO Vaanavil Vizhuthugal attended by Major Dr. Vikneswaran Munikanan, the advisor for SFYC.



Zone Level Science Fair 2013

- Press release for Zone Level Teachers Training and Zone Level Science Fair by zone.
- Pamphlets were distributed to the coordinators for them to promote the Fair in their respective zones.
- Mr. Anandan Shanmugam & Ms. Umahsankariah Muthunaikar interviewed on ASTRO Vaanavil Vizhuthugal.

National Level Science Fair 2013

- Road Show at Kottumalai Pillaiyar Temple, Grand City Restaurant and Brickfields.
- Pamphlets were sent to VIPs, Guests, Funders and all well-wishers to provide information about the NSFYC.
- NSFYC 2013 invitations were sent to VVIPs, VIPs, Guests, Public University and Private University lectures, funders and well-wishers.
- A special invitation known as "The Invitation to Explore" enticed the public to NSFYC 2013.
- 10 capsules related to science were sponsored by ASTRO and were telecast over ASTRO Tamil Channels until the National Level Science Fair.
- A promotional capsule which was sponsored by ASTRO was telecast over ASTRO Tamil Channels a month before the National Event.
- Promotion over THR Raaga information zone.
- Interview over ASTRO Vaanavil Vizhuthugal before the event, attended by Mr. CM Vignaesvaran Jeyandran, Project Director of SFYC 2013.
- Interview of the Winning team of NSFYC 2013 on ASTRO after the event.
- Interview of the Winning team of NSFYC 2013 on Minnale FM.



The project also received wide coverage in newspapers such as the Malaysia Nanban, Tamil Nesan, Makkal Osai, News Straits Times and Thinakural for the School Level and Zone Level training, Launching and Fund Raising Dinner, Zone Level Science Fair, National Event before and after. (For details, please refer to Appendix D)

8 FUNDING

The Science Fair for Young Children 2013 was, together with others, principally supported and funded by the honourable Prime Minister YAB Datuk Seri Haji Mohammad Najib Bin Tun Haji Abdul Razak and the Ministry of Finance, Malaysian Community & Education Foundation – Centre for Community Initiative (MCEF-CCI) and Vijayaratnam Foundation.

In addition to the principal funding, the Science Fair Working Group Committee 2013 organized a Launching and Fundraising Dinner which was held on 28 February 2013 at Bangunan Peladang Jalan Kelang Lama, Kuala Lumpur. The event was officially launched by YB Kamalanathan, Deputy Minister of Education and Higher Learning II who was the representative of Health Minister, YB Datuk Seri Dr. S. Subramaniam. The dinner tables were priced between RM 1000 and RM 5000 all the tables were taken up. There were also some individuals who pledged donations at the dinner. The funds raised are as follows:-

Table 8.1 : Funds Granted by Major Sponsors

No	Sponsor	Amount (RM)
1	Kementerian Kewangan Malaysia (PM)	500,000
2	Carried Forward (2012)	137,552
3	MCEF	112,200
4	Vijayaratnam Foundation	21,000
5	Maj. Dr. Vikneswaran	12,000
6	NLFCS	10,000
7	Prof. Shamala	750
8	Prof. Dr. S. Vikineswary	450
TOTAL		793,952

Table 8.2 : Funds Collected from Launching and Fundraising Dinner 2013

No	Sponsor	Amount (RM)
1	Mr. Tharuma Rajah (Hay Group Sdn. Bhd)	10,000
2	Mr. Suresh Thiru	500
3	Dr. Lee	2,000
4	West Sport	2,000
5	Mr. Stevan	600
6	Auto Prima Technology	1,200
7	Datuk Dr. Palan	5,000
8	Dr. Ben	5,000
9	Datuk Dr. Sean Paul	5,000
10	Mr. Victor	3,000
11	Mr. Ruban	3,000
12	Ms. Bhaawaani	3,000
13	Mr. Radhakrishnan	500
14	Dr. John Tawa	1,000
15	Mr. Firdaus	1,000
16	Mr. Masrul	6,000
17	Ms. Rajeswari	120
18	Mr. Raj Guna	150
19	Mr. Kanagarajah (Warisan Mega Maju)	200
20	Anonymous	1,000
TOTAL		50,270

Various other corporations were also approached to sponsor products for the event. A few responded positively and donated their products for the National Science Fair for Young Children 2013 event. The list of the companies and products is as follows:

Table 8.3: Sponsor of products for NSFYC 2013

No	Sponsor	Item	Quantity
1	Amoy Canning (Beverages) Sdn.Bhd	Delite's Drinks	29ctns
2	GlaxoSmithKline	Ribena (250ml)	65ctns
3	Nestlé Malaysia	Milo drinks (cups)	Milo Truck

All the products sponsored were distributed to the participants during the event days. These contributions were greatly appreciated by the Working Committee of SFYC 2013 as they helped ensure the success of the Science Fair by providing refreshment to all who attended and participated.

We also believe that this kind of contribution produced a win win situation for both the organisers and the sponsors by providing good publicity and a direct marketing avenue for the companies products to our participants , aged between 10-12 years old, teachers, parents as well as to the general public who visited the fair.

In return for their generosity in cash or kind all corporate sponsors had their company logo included in the SFYC 2013 promotional material such as banners, buntings and the programme book.

The summary of Funding for the Science Fair for Young Children 2013 is stated below:

Table 8.4: Summary of Funding for the Science Fair for Young Children 2013

No	Sponsor	Amount (RM)
1	External Funding	793,952.00
2	Fundraising Dinner	50,270.00
Grand Total		844,222.00



9 JUDGING

The Judges Panel is a group of qualified individuals who are responsible for the evaluation of the students' research, experiments, exhibits and for compliance with the rules and regulations throughout SFYC. The judges were selected based on their educational background, occupational background and knowledge of science. Therefore, most of the Judges selected are individuals with science degrees. From this core group of Judges a separate ZLSF Judges Panel and NSFYC Judges Panel was set up to judge the students' performance based on the specific categories and requirements for each event. The respective Judging Panel's decisions were final and independent of the organizing committee.

9.1 Zone Chief Judges Training

The Judges Panel was responsible for synchronizing the judging criteria and methodology in all the zones. In order to make the process more efficient, Chief Judges were identified for each zone. The Zone Chief Judges list is as stated below:

Table 9.1: List of Zone Level Chief Judges 2013

Zone	State	Chief Judges Name
1	Kedah and Perlis	Mr. Saravanan Manian
2	Pulau Pinang	Mr. Arunan Siwaraju
3	Perak	Mr. Sathiakumaran Krishnan
4&5	Selangor and Kuala Lumpur	Maj. Dr. Vikneswaran Munikanan
6	Negeri Sembilan	Mr. Siva Kumar Subramaniam
7	Melaka	Mr. Ranjit Singh Sarban Singh
8	Johor	Mr. Suresh Ramasamy
9	Pahang & Kelatan	Mr. Prem Kumar Apasamy

The chief judges' meeting was conducted on 3rd March 2013 to brainstorm the following aspects :

- Discuss the overall judging criteria and process.
- Discuss the methods and training materials required for the training of zone level judges.
- Finalize criteria to select the zone level judges.
- Discuss the scope of the partially-guided experiments developed for Zone Level Science Fair.
- Finalize the 20 partially-guided experiments for the Zone Level Science Fair.
- Prepare training materials such as presentation slides, worksheets, handouts and illustrations.
- Conduct workshop sessions to ensure the core judging panel was well equipped with the "experimental" and theoretical knowledge of all the experiments presented by the students.

9.2 Zone Level Judges Training

The Chief Judges of each zone were tasked with conducting training for the judges in their team. All the zone chief judges conducted the training in their respective zone one week before the actual Zone Level Science Fair. The details of the judges training are as follows:

Table 9.2: Details of Zone Level Judges Training 2013

Zone	Date	Venue	Trainer
Kedah and Perlis	15 May 2013	Sejati Training Centre	Mr. Saravanan Manian
Pulau Penang	17 March 2013	USM, Penang	Mr. Arunan Siwaraju
Selangor & Kuala Lumpur	15 June 2013 27 June 2013	ASTI Office, MMU, Cyberjaya	Maj. Dr. Vikneswaran Munikanan
Pahang	1 June 2013	SJKT Bandar Mentakab	Mr. Prem Kumar Apasamy
Negeri Sembilan	6 April 2013	SJKT Lobak, Seremban	Mr. Siva Kumar Subramaniam Mr. Ranjit Singh Sarban Singh
Melaka	24 June 2013	SJKT Kubu, Melaka	Mr. Ranjit Singh Sarban Singh Mr. Siva Kumar Subramaniam
Johor	23 June 2013	SJKT Tun Aminah, Johor	Mr. Suresh Ramasamy

9.3 National Science Fair for Young Children 2013

9.3.1 Students' Conference Paper

The Conference Paper is a short presentation about the research that has been done for the project. Interested parties can easily understand students' research by reading the content of the Conference Paper which is prepared in a standardised format.

The top 2 winning teams of the Zone Level Science Fair were qualified to participate in the Conference Paper Presentation. The qualified teams were requested to submit a 3 page paper and a slide presentation of their experiment. One member of the team presented the slides during the Conference Paper Presentation. All the other members were included during the question and answer session with the judges. *(Required one of the member presented the slides and others were required in question and answer session.)* These presentations were held on the 2nd day which was on 20th July 2013 from 8.00pm to 11.00pm. The presentations were given during three parallel sessions conducted in three lecture halls at the German Malaysian Institute.

The objectives of the Conference Paper Presentation are as follows:

- To cultivate the concept of research findings and sharing of the academic approach with the other participants of the fair in a formal way.
- To provide an opportunity to write the research findings in an organised and systematic manner.
- To provide an avenue for the young scientists to experience the atmosphere of a Conference Paper Presentation.
- To develop confidence, encourage and expose them to speak in public and mould them to be good presenters in the future.

The guidelines for the Conference Paper Presentation are as follows:

- A conference paper from the 1st and 2nd prize winners of each zone was submitted to the Conference Paper Judges. All the teams presented their conference paper for NSFYC 2013.
- The Conference Paper was written based on the experiments conducted by the teams for the National Level Competition in either Tamil or English language.
- One person from each team was required to present the paper at the Conference Paper Presentation.
- Students were required to present their paper using Microsoft PPT slides (a maximum of 15 slides were allowed). Presentation time was 10 minutes and 5 minutes for Q & A which involved all members of the team.

9.3.2 Event Day Judging

1st day of the event

The 1st day of judging was to assess the teams log book and report book. This session was conducted by 52 judges from different zones. As planned, the judges arrived at 8.00 pm and Dr. Subramaniam Gurusamy gave a final briefing on the log book and report bookmarking. Dr. Subramaniam also explained the judging criteria and scope for partially guided experiments to all the judges. The books were grouped and distributed to the judges who assessed and submitted their markings to the Chief Judge. After the Log Book and Report Book marking, the judges prepared pre-set questions for use during the judging of the booths the next day and it was moderated by the Chief Judges.

2nd day of the event

For the second year in a row Dr. Subramaniam Gurusamy outlined the “hands-on” experiment section which was introduced to the fair in 2012. All the teams were provided with the apparatus required and instructions for the hands-on experiment they had to perform. They were given 1 hour thirty minutes to complete the experiment and prepare a report on their findings.

The judging coordinator briefed all the judges on the Judging Methodology for Booth Judging. Booth visiting (pre-judging) was held to give an overall picture to all the judges. The Judging was assisted by one facilitator from the organizing committee. The estimated time allocated for judging was 20 minutes per school; 15 minutes for booth judging and 5 minutes for question and answer session. The judges had an hour break after the first round of judging. To ensure fairness, for the second round of judging the teams had a different panel of judges assess their booth. All the scores were tabulated and combined for submission to the National chief judge for finalizing. The National Chief Judge together with a special group of judges did the final evaluation on the marking.

During the booth judging, a few groups of judges were tasked with marking the Innovation Category. Innovation Category stands for the development of a new concept or a variation of an existing idea by students with minor adjustments. Judges marking by asking simple questions as well as observing the students' presentation. The judges then assessed and submitted the scores to the National Chief Judge for the Innovation Category.

Mr. Sathiakumaran Krishnan , Chief Judge of Perak, had a discussion with the school teachers to explain about the Judging Methodology, tactics, judge's qualification and judging requirement during the Teacher's Briefing which was held on 20th July 2013(Saturday). The teachers at this point were given an opportunity to question Mr. Sathiakumaran Krishnan about the judging, judge's requirement, and students' performance. He answered all the teachers queries and explained the significance of the different judging areas to them.

To round off day 2 of the judging , after finalising the marks, the Judging Panel, Mr. Suresh thanked all the judges who had shown professionalism and commitment to ensure that all booths were judged fairly and accurately and all the students work was treated with respect. All the judges were acknowledged by the panel and were given certificates and a souvenir as a token of appreciation.

Last day of the event

The National Chief Judge with special team was finalized all the marks with assessments had submitted by the judges. The National Chief Judge verified and finalised the total marks obtained by each team. The National Chief Judge submitted the results and the winning schools list to the Project Founder after his speech on prize giving ceremony.

Recommendations For The Future (Judging)

School Level

- Need to include more specific criteria for scrapbook evaluation.
- Introduce quiz for scrapbook evaluation.
- Specific and structured training to be given to school teachers on judging content

Zone Level

- Setting the date of competition in advance will enable the chief judges to recruit sufficient judges from various disciplines.
- A training workshop for judges should include a video presentation of student presentation to counter any different understanding among judges.
- Organisers need to play a more involved role by reminding the schools more often about the log book and report submission due date.
- Judging criteria for log book should be revised to include deductions for late submission.
- The Judging process should take place on time, independently and concurrently with the opening ceremony.

National Level

- Better planning is needed to address the issue of punctuality of judges' arrival.
- Conference papers should be given to the judges about three days earlier to allow the judges more time to evaluate.
- Comprehensive training needs to be provided to the judges involved in the paper presentation evaluation.
- Comprehensive training related to the theory behind the Innovation Category should be provided to teachers during teacher training.



10 STATEMENT OF ACCOUNTS SFYC 2013

STATEMENT OF INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST AUGUST 2013

INCOME	Notes	2013 (RM)	2012 (RM)
Income - Science Fair		604,530.00	819,312.31
TOTAL INCOME		<u>604,530.00</u>	<u>819,312.31</u>
LESS : EXPENDITURE			
Accommodation		9,346.00	20,771.00
Advertisement and Promotion		2,750.00	-
Design		9,150.00	7,870.00
Website		2,015.00	295.00
Audit Fee		1,500.00	1,200.00
Professional Fee		-	16,380.75
Bank Charges		1,016.09	138.50
Books		-	11,348.91
Booth Set Up		-	17,000.00
Cleaning Services		500.00	2,353.75
Coordinator Allowances		18,932.50	7,000.00
Depreciation	4	13,200.07	8,268.20
Donation		4,650.00	-
Electricity Charges		-	1,922.80
EPF & SOCSO		3,667.50	7,195.22
Insurance		2,034.00	2,034.00
Internet Charges		-	2,277.40
Honarium Expenses		5,500.00	-
Launching Ceremony		19,811.00	22,148.00
Staff Refreshment		3,518.25	45,566.30
Medical fee		-	567.90
Nasional Science Fair Expenses		37,142.94	-
School Level Science Fair Expenses		93,306.00	-
Zone Level Science Fair Expenses		3,900.00	-

School Level Science Seed Funds	82,700.00	-
Zone Level Science Seed Funds	96,561.60	-
Other Operating Expenses	2,440.00	-
Postage, Courier & Stamping	7,027.67	3,223.43
Printing & Stationery	64,261.23	69,185.80
Language Translation Expenses	5,254.15	-
Video and Photography	8,600.00	-
Prizes & Souvenirs	46,451.39	31,534.10
Rental	17,000.00	14,250.00
Research & Development	-	4,913.20
Training	4,170.00	-
Salary & Allowances	13,422.10	80,722.00
Stamp Duty	-	336.00
Penalty	-	458.00
Telephone	2,930.00	5,721.35
Travelling & Transportation	12,756.35	58,514.60
Repair and Maintenance	360.00	1,506.50
Water Charges	-	431.70
Zone Allocation - Johore	-	43,300.00
Zone Allocation - Kedah	-	31,345.00
Zone Allocation - Malacca	-	9,660.00
Zone Allocation - Negeri Sembilan	-	24,350.00
Zone Allocation - Pahang	-	3,824.00
Zone Allocation - Penang	-	13,225.00
Zone Allocation - Perak	-	41,317.50
Zone Allocation - Wilayah & Selangor	-	40,237.50
MISI Seed Fund	-	6,018.00
TOTAL EXPENDITURE	695,873.84	658,411.41
EXCESS OF (EXPENDITURE) / INCOME	(91,343.84)	160,900.90
INCOME AND EXPENDITURE ACCOUNT		
Total Income	604,530.00	819,312.31
Total Expenditure	695,873.84	658,411.41
(Deficit) / Surplus	(91,343.84)	160,900.90



Balance Sheet as at 31st August, 2013

Assets	Notes	2013 (RM)	2012 (RM)
Non- current assets			
Property, Plant and Equipment	3 (e) & 4	26,353.53	29,215.00
Current assets			
Other Receivables	5	10,000.00	-
Amount due from ASTI	5	126,548.36	-
Deposits & Prepayments	5	10,120.75	10,120.75
Cash and Bank Balance		36,550.31	222,694.47
		<u>183,219.42</u>	<u>232,815.22</u>
Total assets		<u>209,572.95</u>	<u>262,030.22</u>
Represented by:			
Accumulated Funds			
Accumulated Funds b/f		261,583.14	100,682.24
(Deficit) / Surplus For the Year		(91,343.84)	160,900.90
Accumulated Funds c/f		<u>170,239.30</u>	<u>261,583.14</u>
Current liabilities			
Other Payables		<u>39,333.65</u>	<u>447.08</u>
Total liabilities		<u>39,333.65</u>	<u>447.08</u>
Total Funds and Liabilities		209,572.95	262,030.22



11 RECOMMENDATIONS FOR FUTURE

The following recommendations were suggested during the Working group Committee, Coordinators & Event Committee

Working Group Committee

- Strongly encourage the WGC members to make decision for the reliability & effectiveness of the Science Fair for Young Children.
- Improve the WGC members' attendance for the meeting.
- Strongly encourage to fixed the WGC meeting dates except urgent situation.

Partner Organization

- Encourage to identify the new potential funders for sustainability of the Science Fair for young children.
- Strongly encourage the partners to publicity should make evenly.
- Strongly encourage the prizes for the School level science Fair rather than seed fund.

School Level Science Fair (SLSF)

- Strongly encourage all the students in the schools participate in the School Level Science Fair.
- Encourage parents involved and help the school to organize the School Level Science Fair.
- Improve and implement on report collection method.
- Strongly encourage prizes should be delivered the schools before the fairs.
- Encourage to print the prizes without the years to reuse for following years.

Zone Level Science Fair for Young Children

- Coordinator & partners organization fully responsibility and accountability for Zone reports on agreements.
- Strongly encourage the coordinators to submit the report according to the agreement.
- Coordinators strongly encourage attending the coordinator meeting and post mortem.
- Coordinator must follow the rules and regulation of Working Group Committee.
- Coordinator strongly encourage to follow the procedurals set by the judging department .



Training

- Strongly encourage to combine training for the School and Zone Level Science Fair.
- Strongly encourage the professional trainers to conduct the training.
- Encouraging parents training on event day.
- Strongly encourage students training for each zone to reduce teacher's commitments.

Public Relation

- Encourage frequent publicity in media.

Judging

- Strongly encourage Judges to attend the training.
- Judges are not allowing involving in any other department in the event.
- Strongly encourage to mark the log book and report book at least 2 days before the event.

National Level Science Fair

- Encourage to organize National Level Science fair for two days event.
- Strongly encourage to invite an adequate amount of volunteers for the event.



12 CONCLUSION

In general the Science Fair for Young Children (SFYC) 2013 was once again a successful event especially for our young scientists. The updated and expanded resource materials provided for the SFYC proved to be very beneficial for both the students and the teachers involved.. The event was specifically very successful as the hard work of the SFYC team resulted in the target of 387 schools participating in the SLSF being overwhelmingly surpassed with a total of 462 schools participating. With this encouraging response to SLSF 2013 we are sure that 2014 will see even more schools participate. Another area that provided proof of the success of the event was the impact it had on teachers and schools in general. Many head teachers and science teachers expressed their appreciation and sense of satisfaction that their (the teachers) teaching techniques and their pupils learning abilities had benefitted from taking part in SLSF.

At Zone Level SFYC, 282 schools participated and of those 60 schools were selected to take part in the National Science Fair for Young Children (NSFYC) 2013 which was held on 19th to 21st August 2013 at the German Malaysian Institute, Bangi Selangor. Again this year's judging team required all participants to perform very challenging hands-on experiments. However, our Tamil school students proved themselves to be very capable contestants and completed them with ease. The students also performed exceptionally well during their Conference Paper Presentation and Viva Session on the final day. According to the judges the students spoke and answered questions with self-confidence and without hesitation. The visitors to the booths during the public viewing were also impressed with the knowledge and presentation skills of the students.



The Advisory Board together with the Working Group Committee (WGC) organized a National SFYC Forum. Tamil School's Special Task Officers, Tamil School Head Masters Council's and Zone Coordinators were invited to take part in the forum. After the discussions, all were in agreement that they would work closely with each other and together with the SFYC 2014 organizing committee to ensure even more schools participated in next year's event.

The next step for SFYC is to develop this idea to secondary school level and it is a serious ongoing continuous effort. Taking SFYC to the next level can help develop secondary school students scientific skills and prepare them for when they reach the university level.

The SFYC team of experts can also have joint training sessions for students and teachers for a better understanding and more effective dissemination of information. This in turn will help them reach their highest potential.

The continued progress of SFYC is going a long way to ensure the success of future Malaysian scientists. In the near future we hope that our nation's universities will produce more scientists who can generate new ideas and technologies which will help towards Malaysia being recognized as an industrialized nation and as an international authority in the field of science.

Lastly, the SFYC 2013 team would like to express their thanks and appreciation to all who have contributed directly or indirectly to the success of SFYC 2013.



APPENDIX A :

Zone Level Science Fair

Participation List

Zone 1: Kedah & Perlis

No	Name of School	Title
1.	SJK (T) Ladang Wellesley	Speed Of Sailboat
2	SJK (T) Ladang Perbadanan	Insulation
3	SJK (T) Ganesar	Friction
4	SJK (T) Ladang Sungai ular	Parachute
5	SJK (T) Ladang Binjol	Pendulum
6	SJK (T) Ladang Kuala Muda	Pulley System
7	SJK (T) Ladang Harvard Bhg.1	Turbine
8	SJK (T) Bedong	Air Force
9	SJK (T) Ladang Bukit Mertajam	Parachute
10	SJK (T) Ladang Lubuk Seginta	Electricity
11	SJK (T) Ladang Sungai Raya	Friction
12	SJK (T) Changlun	Mass Density
13	SJK (T) Ladang Paya Kamunting	pH Indicator
14	SJK (T) Darulaman	Pendulum
15	SJK (T) Thiruvalluvar	Types Of Soil
16	SJK (T) Barathy	Mass Density
17	SJK (T) Ladang Jabi	pH Indicator
18	SJK (T) Ladang Bukit Jenun	Pulley System
19	SJK (T) Ladang Sungai Bongkoh	Air Force
20	SJK (T) Ladang Harvard Bhg. 2	Air Force
21	SJK (T) Ladang Harvard Bhg. 3	Home-Made Ice Cream
22	SJK (T) Kalaivani	Home-Made Ice Cream
23	SJK (T) Ladang Sungai Puntar	Friction
24	SJK (T) Sungai Tok Pawang	Mass Density
25	SJK (T) Ladang Sungai Batu	Pulley System
26	SJK (T) Ladang Tupah	Dairy Products
27	SJK (T) Tun Sambanthan	Pulley System
28	SJK (T) Ladang Sungkap Para	Potential Energy
29	SJK (T) Ladang Patani Para	Turbine
30	SJK (T) Ladang Sungai Tukang (SJK (T) Somasundram)	Types Of Soil

No	Name of School	Title
31	SJK (T) Palanisamy	Types Of Soil
32	SJK (T) Saraswathy	Speed Of Sailboat
33	SJK (T) Kalaimagal	Suspension Bridge
34	SJK (T) Ldg. Scarboro	Pendulum
35	SJK (T) Mahajothi	Raincoat
36	SJK (T) Ldg. Batu Pekaka	Home-Made Ice Cream
37	SJK (T) Ldg. Kuala Ketil	Raincoat
38	SJK (T) Ldg. Bukit Sembilan	Turbine
39	SJK (T) Ldg. Malakof	Chlorophyll
40	SJK (T) Ldg. Kim Seng	Parachute
41	SJK (T) Ldg. Katumba	Raincoat
42	SJK (T) Ldg. Kupang	Gear
43	SJK (T) Ldg. Pelam	Potential Energy
44	SJK (T) Ldg. Padang Meiha	Gear
45	SJK (T) Ldg. Bukit Selarong	Parachute
46	SJK (T) Ldg. Victoria	Effect Of Drum
47	SJK (T) Ldg. Henrietta	Effect Of Drum
48	SJK (T) Ldg. Bagan Sena	Types Of Soil
49	SJK (T) Ldg. Bukit Sidim	Speed Of Sailboat
50	SJK (T) Ldg. Sg. Dingin	Turbine
51	SJK (T) Ldg. Dublin Bhg. 5	Electricity
52	SJK (T) Ldg. Somme	Electricity



Zone 2: Penang

No	Name of School	Title
1	SJK (T) Bukit Mertajam	Suspension Bridge
2	SJK (T) Ramakrishna	Insulation
3	SJK (T) Mak Mandin	Suspension Bridge
4	SJK (T) Permatang Tinggi	Air Force
5	SJK (T) Ladang Transkrian	Chlorophyll
6	SJK (T) Nibong Tebal	Electricity
7	SJK (T) Ladang Prye	Air Force
8	SJK (T) Ladang Valdor	pH Indicator
9	SJK (T) Palaniyandy	Pulley System
10	SJK (T) Subramaniam Barathee	Suspension Bridge
11	SJK (T) Azad	Electricity
12	SJK (T) Bayan Lepas	Air Force
13	SJK (T) Ladang Batu Kawan	pH Indicator
14	SJK (T) Ladang Krian	Parachute

Zone 3: Perak

No	Name of School	Title
1	SJK (T) Maha Ganesa Vidyasalai	pH Indicator
2	SJK (T) Mahathma Gandhi Kalasalai	Potential Energy
3	SJK (T) Ladang Katayong	Speed Of Sailboat
4	SJK (T) Gerik	Speed Of Sailboat
5	SJK (T) Ladang Tong Wah	Air Force
6	SJK (T) Ladang Changkat Salak	pH Indicator
7	SJK (T) Ladang Banopdane	Gear
8	SJK (T) Gopeng	Friction
9	SJK (T) Khir Johari	Suspension Bridge
10	SJK (T) Tronoh	Types Of Soil
11	SJK (T) Slim Village	pH Indicator
12	SJK (T) Ldg Sg Kruit	Mass Density
13	SJK (T) Ladang Buluh Akar	Suspension Bridge
14	SJK (T) Slim River	Speed Of Sailboat
15	SJK (T) Ladang Elphil	Air Force
16	SJK (T) Ladang Sg Biong	Chlorophyll
17	SJK (T) Ladang Trolak	Effect Of Drum
18	SJK (T) Bharathy	Home-Made Ice Cream
19	SJK (T) Ladang Bikam	Potential Energy
20	SJK (T) Kkerajaan	Effect Of Drum
21	SJK (T) Ladang Bidor Tahan	Potential Energy
22	SJK (T) Tapah	Turbine
23	SJK (T) Sungkai	Electricity

No	Name of School	Title
24	SJK (T) Ulu Sepetang	Parachute
25	SJK (T) Ladang Serapoh	Parachute
26	SJK (T) Ladang New Coconut	pH Indicator
27	SJK (T) Selama	Air Force
28	SJK (T) Ladang Kelapa Bali	Parachute
29	SJK (T) YMHA	Suspension Bridge
30	SJK (T) Ladang Sin Wah	Types of soil
31	SJK (T) Klebang	Mass Density
32	SJK (T) Ladang Glenealy	Chlorophyll
33	SJK (T) Ladang Chersonese	Turbine
34	SJK (T) Gandhi Memorial	Electricity
35	SJK (T) Ladang Dovenby	Pendulum
36	SJK (T) Ladang Sungkai	Electricity
37	SJK (T) Ladang Rubana	Air Force
38	SJK (T) Ladang Jenderata 1	Friction
39	SJK (T) Kamunting	Mass Density
40	SJK (T) St Theresa's Convent	Insulation
41	SJK (T) Kota Lima	Raincoat
42	SJK (T) Ladang Nova Scotia 2	pH Indicator
43	SJK (T) Ladang Behrang River	Mass Density
44	SJK (T) Chettiars	Electricity
45	SJK (T) Saint Mary's	Mass Density
46	SJK (T) Sithambaran Pillay	Friction
47	SJK (T) Kampung Simee	Pendulum
48	SJK (T) Ladang Allagar	pH Indicator
49	SJK (T) Thiruvalluar	Pulley System
50	SJK (T) Tun Sambantham	Pendulum
51	SJK (T) Ladang Sg Wangi	Pulley System
52	SJK (T) Tan Sri Dato' manickasagam	Mass Density
53	SJK (T) Ladang Jin Seng	Types Of Soil
54	SJK (T) Ayer Tawar	Suspension Bridge
55	SJK (T) Ladang Cluny	Types Of Soil
56	SJK (T) Ladang Teluk Buloh	Parachute

Zone 4: Selangor

No	Name of School	Title
1	SJK (T) Ladang Batu Ampat	Home-Made Ice Cream
2	SJK (T) Ladang Emerland	Electricity
3	SJK (T) Methodist Kapar	Suspension Bridge
4	SJK (T) Simpang Lima	Pulley System
5	SJK (T) Vallambrosa	Gear
6	SJK (T) Ladang Jugra	Chlorophyll
7	SJK (T) Simpang Morib	pH Indicator
8	SJK (T) Ladang Bukit Ijok	Type Of Soil
9	SJK (T) Ladang Tumbuk	Air Force
10	SJK (T) Pulau Carey Timur	Parachute
11	SJK (T) Vageesar	Friction
12	SJK (T) Ladang Semenyih	Mass Density
13	SJK (T) Ladang West Country Timur	pH Indicator
14	SJK (T) Kuala Kubu Bahru	Electricity
15	SJK (T) Ladang Kalumpang	Insulation
16	SJK (T) Ladang Sungai Choh	Air Force
17	SJK (T) Bukit Beruntung	Type Of Soil
18	SJK (T) Batu Caves	Turbine
19	SJK (T) Taman Melawati	Parachute
20	SJK (T) Serdang	Chlorophyll
21	SJK (T) Vivekananda Petaling Jaya	Gear
22	SJK (T) HICOM	Raincoat



No	Name of School	Title
23	SJK (T) Ladang Ebor	Home-Made Ice Cream
24	SJK (T) Seaport	pH Indicator
25	SJK (T) Sungai Renggam	Chlorophyll
26	SJK (T) Tun Sambanthan	Friction
27	SJK (T) Dengkil	Speed of Sailboat
28	SJK (T) Taman Permata	Friction
29	SJK (T) Sepang	Type Of Soil
30	SJK (T) Teluk Merbau	Turbine
31	SJK (T) Ladang West Country Barat	Speed Of Sailboat
32	SJK (T) Kuang	Pulley System
33	SJK (T) Ladang Batang Kali	pH Indicator
34	SJK (T) Ladang Sungai Tinggi	Electricity
35	SJK (T) Kajang	Dairy Products
36	SJK (T) Bestari Jaya	Electricity
37	SJK (T) Ladang Rinching	Mass Density
38	SJK (T) Jalan Meru	Air Force
39	SJK (T) Castfield	Chlorophyll
40	SJK (T) Ladang Glenmarie	Solar Energy(Own Tittle)
41	SJK (T) Ladang Highland	Suspension Bridge
42	SJK (T) Bandar Baru Salak Tinggi	Insulation
43	SJK (T) Kinrara	DNA(Own tittle)

Zone 5: Kuala Lumpur

No	Name of School	Title
1	SJK (T) Jalan Fletcher	Pulley system
2	SJK (T) Jalan San Peng	Parachute
3	SJK (T) Sentul	Pulley system
4	SJK (T) St Joseph	Parachute
5	SJK (T) Thamboosamy Pillai	pH indicator
6	SJK (T) Vivekananda Kuala Lumpur	Potential energy
7	SJK (T) Ladang Edinburgh	Mass density
8	SJK (T) Saraswathy Kuala Lumpur	Suspension bridge
9	SJK (T) Segambut	Chlorophyll
10	SJK (T) Sungai Besi	Friction

Zone 6: Negeri Sembilan

No	Name of School	Title
1	SJK (T) Rantau	Electricity
2	SJK (T) Ladang Kirby	Ph Indicator
3	SJK (T) Lobak	Ph Indicator
4	SJK (T) Convent Seremban 2	Turbine
5	SJK (T) Labu Bhg 1	Types Of Soil
6	SJK (T) Lorong Jawa	Effect Of Drum
7	SJK (T) Ladang Seremban	Air Force
8	SJK (T) Ladang Senawang	Air Force
9	SJK (T) Tun Sambanthan	Mass Density
10	SJK (T) Batang Benar	Mass Density
11	SJK (T) Perhentian Tinggi	Suspension Bridge
12	SJK (T) Ladang Lenggeng	Sailboat
13	SJK (T) Ladang Kubang	Suspension Bridge
14	SJK (T) Port Dickson	Gear
15	SJK (T) Mukundan Bukit Pelanduk	Friction
16	SJK (T) Ladang Tanah Merah	Parachute
17	SJK (T) Bandar Springhill	Effect Of Drum
18	SJK (T) Tampin	Suspension Bridge
19	SJK (T) Ladang Batu Hampar	Ph Indicator
20	SJK (T) Chembong	Types Of Soil
21	SJK (T) Ladang Ayer Hitam	Turbine
22	SJK (T) Ladang Pertang	Gear
23	SJK (T) Ladang St Helier	Parachute
24	SJK (T) Ladang Geddes	Raincoat
25	SJK (T) Ladang Juasseh	Home-Made Ice Cream
26	SJK (T) Kuala Pilah	Pendulum
27	SJK (T) Jeram Padang	Ph Indicator
28	SJK (T) Ladang Bahau	Gear
29	SJK (T) Dato' Pathmanathan	Friction
30	SJK (T) Nilai	Suspension Bridge

Zone 7: Melaka

No	Name of School	Title
1	SJK (T) Paya Rumput	Gear
2	SJK (T) Ladang Sungai Baru	Type Of Soil
3	SJK (T) Rumbai	Dairy Products
4	SJK (T) Ladang Kemuning Kru	Type Of Soil
5	SJK (T) Ladang Kadek	pH Indicator
6	SJK (T) Ladang Bukit Asahan	Suspension Bridge
7	SJK (T) Ladang Tebong	Friction
8	SJK (T) Jasin	Parachute
9	SJK (T) Ladang Bukit Kajang	Turbine
10	SJK (T) Melaka Kubu	Pendulum
11	SJK (T) Ladang Kemuning H/D	Sailboat
12	SJK (T) Alor Gajah	Parachute
13	SJK (T) Pulau Sebang	Sailboat
14	SJK (T) Pekan Tebong	Friction
15	SJK (T) Ladang Serkam	Air Force
16	SJK (T) Merlimau	Insulation
17	SJK (T) Durian Tunggal	pH Indicator
18	SJK (T) Batang Melaka	Mass Density
19	SJK (T) Jasin Lalang	Suspension Bridge
20	SJK (T) Ladang Diamond Jublee	Pulley
21	SJK (T) Bukit Lintang	Electricity



Zone 8: Johor

No	Name of School	Title
1	SJK (T) Jalan Stesyen Paloh	Gear
2	SJK (T) Ladang Ulu Tiram	Gear
3	SJK (T) Labis	pH Indicator
4	SJK (T) Ladang Lambak	pH Indicator
5	SJK (T) Tun Aminah	Turbine
6	SJK (T) Masai	Turbine
7	SJK (T) Ladang Kelan	Turbine
8	SJK (T) Bekok	Type of Soil
9	SJK (T) Seri Pelangi	Type of Soil
10	SJK (T) Permas Jaya	Electricity
11	SJK (T) Cantuman Chaah	Electricity
12	SJK (T) Jalan Tajul	Electricity
13	SJK (T) Jalan Parit Ibrahim	Friction
14	SJK (T) Ladang Kulai Oil Palm	Potential Energy
15	SJK (T) Bandar Segamat	Potential Energy
16	SJK (T) Batu Anam	Potential Energy
17	SJK (T) Air Manis	Potential Energy
18	SJK (T) Jalan Khalidi	Speed Of Sailboat
19	SJK (T) Ladang Tebrau	Insulation
20	SJK (T) Bukit Renggam	Pulley System
21	SJK (T) Ladang Tanah Merah	Pulley System
22	SJK (T) Ladang Rini	Chlorophyll
23	SJK (T) Ladang Lanadron	Chlorophyll
24	SJK (T) Gelang Patah	Air Force
25	SJK (T) Jalan Yahya Awal	Air Force
26	SJK (T) Kangkar Pulai	Air Force
27	SJK (T) Pasir Gudang	Home-Made Ice Cream
28	SJK (T) Desa Cemerlang	Home-Made Ice Cream
29	SJK (T) Ladang Mount Austin	Home-Made Ice Cream
30	SJK (T) Jalan Haji Manan	Parachute
31	SJK (T) Jalan Sialang	Pendulum
32	SJK (T) Ladang Yong Peng	Pendulum
33	SJK (T) Ladang Pamol	Mass Density
34	SJK (T) Ladang Voules	Mass Density
35	SJK (T) Ladang Tangkah	Mass Density
36	SJK (T) Kulai Besar	Dairy Products
37	SJK (T) Ladang Pelepah	Dairy Products

Zone 9: Pahang

No	Name of School	Title
1	SJK (T) Pasir Gajah ,Kelantan	Potential Energy
2	SJK (T) Ladang Lanchang	Home-Made Ice Cream
3	SJK (T) Ladang Sungai Kawang	Friction
4	SJK (T) Ladang Mentakab	Ph Indicator
5	SJK (T) Ladang Edensor	Ph Indicator
6	SJK (T) Ladang Semantan	Electricity
7	SJK (T) Mentakab	Chlorophyll
8	SJK (T) Ladang Sungai Tekal	Electricity
9	SJK (T) Jerantut	Air Force
10	SJK (T) Ldg.menteri	Suspension Bridge
11	SJK (T) Bentong	Types Of Soil
12	SJK (T) Lurah Bilut	Friction
13	SJK (T) Raub	Effect Of Drum
14	SJK (T) Bukit Fraser	Potential Energy
15	SJK (T) Ladang Selborne	Home-Made Ice Cream
16	SJK (C) Sungai Jerik Bahagian Tamil	Parachute
17	SJK (T) Ringlet	Suspension Bridge
18	SJK (T) Ladang Shum Yip Leong	Speed Of Sailboat
19	SJK (T) Ladang Blue Valley	Pulley System



APPENDIX B :

Report Summary of Zone Level Science Fair

Financial Report of Zone 1 : Kedah

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (SLSF)	600.00	Launching :	
Central Committee (ZLSF)	15,600.00	Accommodation	450.00
1 MISM	3,500.00	Car rental	90.00
Mr. Chella	2,250.00	Hall rental	1,000.00
Mr. M.L. Maran	500.00	Breakfast	555.00
Mr. Visu	500.00	Training :	
Mr. O.G. Shanmugam	1,000.00	Projektor	400.00
Mr. I.R. Devan	250.00	PA system	300.00
Additional fund from ASTI	10,000.00	Breakfast	900.00
Mr. Sadis Kumar	7,962.50	Lunch	1,850.00
Coordinator Allowance	1,000.00	Transportation	2,550.00
		Final :	
		Hall rental (AIMST Great Hall)	1,000.00
		Booth set up	18,200.00
		PA system	3,500.00
		Accommodation	880.00
		Transportation:	
		Tol	150.00
		Fuel	500.00
		Car rental	1,810.00
		Prizes and souvenirs	3,637.50
		T-shirts for fasilitators	1,200.00
		Food:	
		Dinner for fasilitators	252.00
		Breakfast	860.00
		Lunch	2,250.00
		Tea time for fasilitators	192.00
		Mineral water	86.90
		Backdrop and stationaries	549.10
Total	43,162.50	Total	43,162.50

Financial Report of Zone 2 : Penang

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (SLSF)	600.00	FOOD	4,436.00
Central Committee (ZLSF)	4,500.00	BOOTH	5,600.00
1MDB	20,000.00	CASH PRICE	3,000.00
Youth Mc	4,720.40	GIFT PRICE	6,185.00
Datuk Vinod Sekhar	5,000.00	MEDALS, TROPHY, PLAGUES	7,355.00
Coordinator Allowance	1,000.00	T SHIRTS	3,194.40
		MISCELLENEOUS	2,200.00
		Coordinator Allowance	1,000.00
Total	35,820.40	Total	32,970.40
		<i>Balance Carried Forward</i>	2,850.00

Financial Report of Zone 3 : Perak

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (ZLSF)	16,800.00	Hall (<i>Politeknik Sultan Azlan Shah, Behrang</i>)	4,180.00
Indah Water	1,500.00	Booth Set Up + Cooler	21,840.00
Perak State Government	10,000.00	Food and Drinks	5,845.00
PUSKAP	1,000.00	Cash Prizes + Gift	6,758.00
DHRRA Malaysia	54,758.60	Souvinour	7,463.00
Central Committee (SLSF)	35,000.00	Printing (<i>Souvinor book, Certificate, Tag, Banel, Backdorp</i>)	7,533.80
DHRRA Malaysia	523.00	Teacher's Training	318.50
		T'Shirt	1,950.00
		Accomodation	5,540.00
		Insurance	232.60
		Stationary + Photocopy	2,211.20
		Designing	1,910.00
		Transportation(<i>School</i>)	3,000.00
		Judges Transportation	2,000.00
		Project Officer(<i>RM2212.75x6 Months</i>)	13,276.50
		SLSF	
		Medal	23,000.00
		Certificate	4,000.00
		Postage	123.00
		Teacher's Training	4,000.00
		Transportation	3,200.00
		Communication & Accomodation	1,200.00
Total	119,581.60	Total	119,581.60

Financial Report of Zone 4 & 5 : Selangor & Kuala Lumpur

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (ZLSF)	17,100.00	Hall (MMU)	22,820.00
Amanah Raya	750.00	Booth Set Up	15,257.00
TPM	50,000.00	Food and Drinks	10,325.00
Federal	3,000.00	Cash Prizes	9,000.00
DHRRRA Malaysia	28,191.05	Souvinour	2,709.50
Central Committee (SLSF)	47,700.00	Medal	4,875.00
		Printing (Certificate, Tag, Banel, Backdorp)	2,522.20
		Souvenir Book, Invitation Card, Certificate	8,285.00
		Postage	175.00
		Teacher's Traning	400.00
		Accomodation	440.00
		Stationary + Potocopy	849.65
		Transpotion	2,861.10
		Designing	1,110.00
		Insurance	135.10
		Communication, fax	3,000.00
		Judges Transportation	1,000.00
		Project Officer (RM2212.75x6 Months)	13,276.50
		SLSF	
		Medal	24,380.00
		Certificate	9,500.00
		Pos, fax, communication	5,820.00
		Food for Teacher's Traning	2,500.00
		Transportation	5,500.00
Total	146,741.05	Total	146,741.05



Financial Report of Zone 6 : Negeri Sembilan

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (State Level)	8,250.00	Fixing & DismantalBooth	3,050.00
HM Council NSDK	2,656.60	Staionaries -Zone level	66.40
Coordinator Allowance	1,000.00	Breakfast & Lunch	2,420.00
		Photoset	29.40
		Prizes -Cash	1,700.00
		Tent Rental	300.00
		Tropies	2,780.00
		Back drop	100.00
		Cordinator Allowence	1,000.00
		Staionaries -Judges	165.80
		Cleaning Hall	150.00
		Breakfast -Traing Zone level	145.00
Total	11,906.60	Total	11,906.60

Financial Report of Zone 7 : Melaka

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (SLSF)	600.00	Teachers training lunch	250.00
Central Committee (ZLSF)	6,300.00	Media House Rental	1,050.00
Coordinator Allowance	1,000.00	Booth display board	294.00
		Banner	140.00
		Food for the zone level SF	1,000.00
		Breakfast for judges	50.00
		Cash prize for winners	1,200.00
		mineral water for students	38.05
		Challenge trophy and plaques	690.00
		Stationary	320.10
		Envelopes	16.80
		Accomodaton for org committee	304.00
		Misc	150.00
		Coordinator Allowance	1,000.00
Total	7,900.00	Total	6,502.95
		<i>Balance Carried Forward</i>	<i>1,397.05</i>

Financial Report of Zone 8 : Johor

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (SLSF)	1,320.00	Prizes & Souviniers	32,635.07
Central Committee (ZLSF)	12,300.00	Booth	11,175.00
Forward Balance of 2012	3,214.92	Hall	8,500.00
		T-Shirt	5,200.00
Dato Dr Subramaniam	15,000.00	Food and Drink	7,761.50
Mr Soros Kim	8,000.00	Token of Appreciation	3,000.00
Mr Nila Raja	4,160.00	Facilitators' Claim	2,000.00
Dato Randir	2,000.00	Stationeries	1,024.30
Mr Thenarsoo	1,725.00	Photocopy, Banner, Bunting & Poster	529.00
YB Kamalanathan	1,000.00	Phone Calls	600.00
Parents	1,000.00	Coordinator's Allowance	1,000.00
Coordinator's Allowance	1,000.00		
ASTI (Parents Training)	3,900.00		
Putera MIC Johor	18,804.95		
Total	73,424.87	Total	73,424.87



Financial Report of Zone 9 : Pahang

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (School Level)	600.00	Food for training slsf & zlsf	599.40
Central Committee (State Level)	5,700.00	Drinks volunteers	100.00
Coordinator Allowance	1,000.00	Hall	500.00
Pahang Government	15,000.00	Hall Aircond 4 hours	800.00
PERINNBAM Malaysia	5,000.00	PA Technician & shooting	1,000.00
PERINNBAM Pahang	1,057.60	Phone claims	300.00
B/D	823.40	chairs	400.00
		T-shirts for volunteers and teachers	1,500.00
		Souvinier bags for teachers	51.60
		Food for accomodate participants & event day	3,200.00
		photostats & stationaries & cartridge	1,000.00
		Accomodation for MGB, PST , Asst.Coordinator	186.00
		Accomodation for participants	650.00
		Phamplets	350.00
		Transport token for C.Highlands schools	900.00
		Transport tokens for SJKT Pasir Gajah Kelantan	400.00
		Sasbadi lego robotics.	2,480.00
		Cash money for winners	1,300.00
		tags for participants,volunteers, judges	300.00
		ZLSF booths	4,384.00
		Gift for volunteers	150.00
		Prizes and trophy ,	7,000.00
		Banners ,mock cheque	520.00
		Coordinator Allowance	1,000.00
		Garbage bags	10.00
		Cleaning tokens	100.00
Total	29,181.00	Total	29,181.00

APPENDIX C :

Partially Guided Experiments for SFYC 2013

- 1.** A gear is a rotating machine part having cut teeth, or cogs, which match with another toothed part in order to transmit force. Geared devices can change the speed, force, and direction of a power source. By understanding more about gears, design an experiment by using various numbers of teeth in a gear and explain its principle.
- 2.** Various household chemicals can be acidic, neutral or alkaline. Use a natural source as a pH indicator solution to determine the pH of at least eight household chemicals available in the market.
- 3.** Water is an element of nature that can be useful to us when harnessed to generate electricity. It is a renewable source of energy. Based on the given statement, design a model to demonstrate the use of water as a source of electricity. Then, conduct a series of experiment to investigate the effect of rotation of turbine on the amount of electricity produced.
- 4.** Different plants grow in different type of soils based on the soil's water retention property. Design an experiment to investigate water retention property of various type of soils. Discuss the mechanism involved, such as porosity, size of soil particles etc.
- 5.** Electricity can be produced through chemical reactions. Use dry cell as an electricity source and study the effect of different type of materials to light up a bulb. Voltmeter can be used to determine electricity output.
- 6.** Friction is essential in our daily life and for our safety. Friction is influenced by two factors, namely type of the surface and weight of the object. However, friction also causes loss of energy resulting in wear and tear problems. Based on the above statement, design an experiment to study the methods which can be used to reduce friction.
- 7.** A bridge is used to connect two places separated by a river or stream. The Romans, the Chinese and other civilisations have unique ways of designing their bridges. Construct suspension bridges using different types of materials and investigate the maximum weight it can withstand. Discuss the outcomes of the experiment from an engineering point of view.
- 8.** Potential energy is stored energy. Objects may have potential energy stored in terms of their position. It is said that the amount of potential energy in an object is related to the height of the object from the ground. In relation to this, design an experiment to investigate the relationship between the height of an object and potential energy involved.
- 9.** A sailboat or sailing boat is a boat propelled partly or entirely by sails. However, the speed of the boat depends on the size, shape and the type of material used for the sail. Design an experiment to study the effect of the above mentioned factors on the speed of a sailboat. The type of material used to construct the sailboat should be kept constant.
- 10.** If you've ever worn a raincoat that got soaking wet in the rain, you may have wondered whether its manufacturers ever studied fabric absorbency. For your science fair experiment, you may want to consider comparing the absorbency of water and heat by various fabrics and colour of fabrics. Discuss the best materials which can be used to make coats suitable for different types of weather.
- 11.** Insulation protects people from burning – oven gloves protect hands from heat conducted through metal baking trays, and wooden and plastic handles protect from the heat from pans and cooking utensils. Insulation keeps food cool in fridges and freezers, or in cool boxes and cool bags on picnics, or on the trip home from the shops. Insulators are made

of different materials. Design an experiment to investigate the effect of different types of materials on the amount heat they can withstand.

12. A pulley is a wheel on an axle that is designed to support movement of a cable or belt along its circumference. Pulleys are used in a variety of ways to lift loads, apply forces, and to transmit power. Design an experiment to investigate the use of various types of arrangements and size of pulleys to lift an object.

13. Chlorophyll is a necessity for plants to carry out photosynthesis. However, there are different types of chlorophyll in plants. With the aid of a suitable method, identify the types of chlorophyll in leaves of various plants. With the use of references, identify the type of chlorophyll detected in each leaf.

14. Kunalan Subramaniam and Subramaniam Sooryapparad are the team members of Malaysia's Harimau Malaya football team. They have played for the team and brought glory to the country. It is said that the distance travelled by a football depends on the air pressure inside the football. Conduct an experiment to study the statement above. You must design a mechanical system to keep the force applied on the football always constant. Discuss the mechanism involved.

15. Ice cream is a smooth, sweet, cold food prepared from a frozen mixture of milk products and flavorings, containing a minimum of 10 percent milk fat and eaten as a snack or dessert. How does the amount of sugar in homemade ice cream affect how fast it freezes? Design an experiment to investigate the above statement.

16. The drum is a member of the percussion group of musical instruments. Drums consist of at least one membrane, called a drumhead or drum skin, that is stretched over a shell and struck, either directly with the player's hands, or with a drum stick, to produce sound. How does the size of a drum affect its pitch? Conduct an experiment to study the statement above. A ping pong ball can be used to measure the pitch level.

17. A parachute is a device used to slow the motion of an object through an atmosphere by creating drag, or in the case of ram-air parachutes, aerodynamic lift. The material used in making a parachute is usually a light and strong material. How does a parachute's shape and material affect the speed at which it falls? Conduct an experiment to study the statement above. Discuss the mechanism involved.

18. A pendulum is a weight suspended from a pivot so that it can swing freely. When a pendulum is displaced sideways from its resting equilibrium position, it is subject to a restoring force due to gravity that will accelerate it back toward the equilibrium position. When released, the restoring force combined with the pendulum's mass causes it to oscillate about the equilibrium position, swinging back and forth. The time for one complete cycle, a left swing and a right swing, is called the period. What are the factors that affect the period of a pendulum? Construct an experiment to investigate the statement given.

19. The mass density or density of a material is its mass per unit volume. Different materials usually have different densities. Materials with higher density than water sink in water, while materials with lower density than water float on water. So density is an important concept regarding buoyancy. Do objects float better in freshwater or salt water? Based on this statement, design an experiment to investigate the statement.

20. Ice cream (derived from earlier iced cream or cream ice) is a frozen dessert usually made from dairy products, such as milk and cream, and often combined with fruits or other ingredients and flavours. As ice cream is made of milk, it can be spoilt by the activities of microorganisms. Design an experiment to study different methods to reduce or stop microorganisms activities on dairy products. Discuss the mechanism involved.

APPENDIX D: SFYC2013 in Public Media

தமிழ்ப்பள்ளி அளவிலான அறிவியல் விழா 2013 பள்ளிகளின் பங்கேற்பு

கோலாலம்பூர், ஏப். 7-
நம் தமிழ்ப்பள்ளி மாணவர்களிடையே அறிவியல் ஆர்வத்தையும், ஆக்கச் சிந்தனையையும், முறையான ஆய்வுப் பண்பினையும் உருவாக்க வேண்டும் என்ற நோக்கில் அறிமுகப் படுத்தப்பட்டதே இந்த இளம் ஆய்வாளர்களின் அறிவியல் விழா. இளம் ஆய்வாளர்களின் அறிவியல் விழா கடந்த 6 ஆண்டுகளாக மாநில அளவிலும் தேசிய அளவிலும் வெற்றிகரமாக நடந்து வந்த போதிலும், பள்ளி அளவில் அறிமுகப்படுத்தப்படுவது இது நான்காவது ஆண்டாகும். இவ்விழா தத்தம் பள்ளிகளில் சிறப்பான, சுலபமான முறையில் ஏற்பாடு செய்திடும் வழிகளையும் அதன் தெளிவான விவரங்களையும் அறிந்திடும் வகையில் ஆசிரியர்களுக்கான பயிற்சி பட்டறை ஒவ்வொரு ஆண்டும் 9 மாநிலங்களில் ஏற்பாடு செய்யப்படும். இவ்வருடம் ஆசிரியர்களுக்கான



பயிற்சி பட்டறை, கடந்த ஜனவரி மாதம் தொடங்கி பிப்ரவரி மாதம் வரை மிக சிறப்பாக நடந்தேறியது. மொத்தம் 9 மாநிலங்களில் நடத்தப்பட்ட இந்தப் பயிற்சி பட்டறையில் 386 பள்ளிகளிலிருந்து சுமார் 500 க்கும் மேற்பட்ட ஆசிரியர்கள் கலந்து

கொண்டனர். பள்ளி அளவிலான அறிவியல் விழா சம்பந்தமான மேல் விவரங்களைத் தெரிந்து கொள்ள விரும்பும் பள்ளிகள் மாநில ஒருங்கிணைப்பாளரைத் தொடர்பு கொள்ளுமாறு கேட்டுக் கொள்ளப் படுகின்றது. ஒருங்கிணைப்பாளர்களின் தொடர்பு எண்: கோடா & பெர்லிஸ் சதிஷ் 016-6932986, பிளாங்கு எட்வின் ஆனந்த்ராஜ் 014-9197980, பேராசிரியர் குப்புசாமி 012-2583539, சிலாங்கூர் & கோலாலம்பூர், குமாரி சித்திரா பெருமாள் 016-5971447, பகாங் செல்வேந்திரன் 019-9185678, நெகிரி செம்பிலான் ஜோசப் வில்லியம் 019-6237455, மலாக்கா இராமசொக்கலிங்கம் 019-6651664, ஜோசு ரவின் குமார் கிருஷ்ணசாமி 016-7289194 அல்லது இளம் ஆய்வாளர்களின் அறிவியல் விழா செயற்குழு 03-78778571 அல்லது 03-78655557.

தமிழ்ப்பள்ளி அளவிலான அறிவியல் விழா 2013 பள்ளிகளின் பங்கேற்பு

தமிழ்ப்பள்ளி மாணவர்களிடையே அறிவியல் ஆர்வத்தையும், ஆக்கச் சிந்தனையும், முறையான ஆய்வுப் பண்பினையும் உருவாக்க வேண்டும் என்ற நோக்கில் அறிமுகப்படுத்தப்பட்டதே இந்த இளம் ஆய்வாளர்களின் அறிவியல் விழா. இளம் ஆய்வாளர்களின் அறிவியல் விழா கடந்த 6 ஆண்டுகளாக மாநில அளவிலும், தேசிய அளவிலும் வெற்றிகரமாக நடந்து வந்த போதிலும், பள்ளி அளவில் அறிமுகப்படுத்தப்படுவது இது நான்காவது ஆண்டாகும். இவ்விழா தத்தம் பள்ளிகளில் சிறப்பான, சுலபமான முறையில் ஏற்பாடு செய்திடும் வழிகளையும் அதன் தெளிவான விவரங்களையும் அறிந்திடும் வகையில் ஆசிரியர்களுக்கான பயிற்சி பட்டறை ஒவ்வொரு ஆண்டும் 9 மாநிலங்களில் ஏற்பாடு செய்யப்படும். இவ்வருடமும் ஆசிரியர்களுக்கான பயிற்சி பட்டறை, கடந்த ஜனவரி மாதம் தொடங்கி பிப்ரவரி மாதம் வரை மிகச் சிறப்பாக நடந்தேறியது. மொத்தம் 9 மாநிலங்களில் நடத்தப்பட்ட இந்தப் பயிற்சி பட்டறையில் 386 பள்ளிகளிலிருந்து சுமார் 500 க்கும் மேற்பட்ட ஆசிரியர்கள் கலந்து கொண்டனர். அதனை அடுத்த, தற்போது மொத்தம் 312 பள்ளிகள் தங்கள் பள்ளிகளில் பள்ளி அளவிலான அறிவியல் விழாவினை நடத்தவுள்ளனர். மேலும், பல பள்ளிகள் இவ்விழாவினை தங்கள் பள்ளிகளில் ஏற்பாடு செய்வார்கள் என பெரிதும் எதிர்பார்க்கப்படுகிறது.

தமிழ்ப்பள்ளி அளவிலான அறிவியல் விழாவினை தங்கள் பள்ளிகளில் எவ்வாறு படிப்படியாக ஏற்பாடு செய்ய வேண்டும் என்பதனை ஒவ்வொரு ஆசிரியருக்கும் இப்பயிற்சி பட்டறையின் போது தெளிவாக விவரிக்கப்பட்டது. இவ்விழாவினை ஏற்பாடு செய்வதற்கு ஏதுவாக தகவல்கள் அடங்கிய குறுந்தட்டும், கையேடும் அனைத்து ஆசிரியர்களுக்கும் இப்பட்டறையின் போது வழங்கப்பட்டது. மேலும், ஆசிரியர்களிடையே நல்ல டிரிந்துணர்வை ஏற்படுத்தும் வகையிலும் இவ்விழாவினை சிறந்த செயலாகக் முறையில் ஏற்பாடு செய்யும் வழிகளை அறிந்திடவும் சில கலந்துரையாடல்களும் மேற்கொள்ளப்பட்டன. பள்ளி அளவிலான அறிவியல் விழா சம்பந்தமான மேல் விவரங்களைத் தெரிந்து கொள்ள விரும்பும் பள்ளிகள் மாநில ஒருங்கிணைப்பாளரைத் தொடர்புக் கொள்ளுமாறு கேட்டுக் கொள்ளப்படுகின்றது. ஒருங்கிணைப்பாளர்களின் தொடர்பு எண்: கோடா - பெர்லிஸ் சதிஷ் 016-693 2986, பிளாங்கு எட்வின் ஆனந்த்ராஜ் 014-919 7980, பேராசிரியர் குப்புசாமி 012-258 3539, சிலாங்கூர் - கோலாலம்பூர் குமாரி சித்திரா பெருமாள் 016-597 1447, பகாங் செல்வேந்திரன் 019-918 3678, நெகிரி செம்பிலான் ஜோசப் வில்லியம் 019-623 7455, மலாக்கா இராமசொக்கலிங்கம் 019-665 1664, ஜோசு ரவின் குமார் கிருஷ்ணசாமி 016-728 9194 அல்லது இளம் ஆய்வாளர்களின் அறிவியல் விழா செயற்குழு 03-7877 8571 அல்லது 03-7865 5557.

மகாநகர் மாநில தமிழ்ப்பள்ளிகளுக்கான இளம் ஆய்வாளர்களின் அறிவியல் விழா

மெந்தகாய் தமிழ்ப்பள்ளி வெற்றி வாகை சூழியது



மேற்கூறு 20-11-2013 அன்று நடைபெற்றது. இது போன்ற நிகழ்ச்சிகள் ஆண்டுதோறும் நடைபெற்று வருகிறது. மேற்கூறு 2013 ஆம் ஆண்டில் வெற்றி பெற்ற பள்ளிகள் பட்டியல் கீழ்க்கண்டது.



மேற்கூறு 2013 ஆம் ஆண்டில் வெற்றி பெற்ற பள்ளிகள் பட்டியல் கீழ்க்கண்டது.



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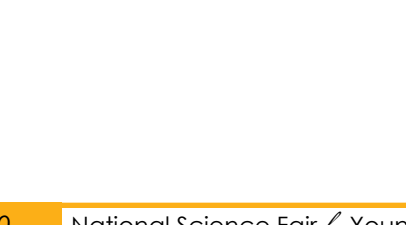
மேற்கூறு 2013 ஆம் ஆண்டில் வெற்றி பெற்ற பள்ளிகள் பட்டியல் கீழ்க்கண்டது.



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மேற்கூறு 2013 ஆம் ஆண்டில் வெற்றி பெற்ற பள்ளிகள் பட்டியல் கீழ்க்கண்டது.



STREETS YOUR EVENT

For enquiries or to buy pictures featured here, contact Serena or Sarah at 03-2066 9315. You can also email us at stn@straitstimes.com.my or serena@stn.com.my



(From left) SITA DEVI Naidu, Arthanamorthy Devasathan, Dr. MICHEL Gayle, Lee Hui Khai and Neelithi Barathi. Pic by Zulfahri Zulfahri



(From left) RA Ramani Nair, Damodharan Appalaraju, Joseph William and Srulamar Velupillai.

RM50,000 RAISED FOR SCIENCE FAIR

PETALING JAYA: A fundraising dinner, which saw scientists and members of the public chipping in to raise RM50,000 for the upcoming National Science Fair For Young Children 2013, was held at Wisma Peradain 100city.

A check for RM50,000 was also presented by Hui Selangor MP P. Karunanithi on behalf of Human Resources Minister Datuk Seri Dr. S. Subramaniam at the function.

Association of Science, Technology

and Innovation president Subahoodhura Mohamed Yusoff said the first Science Fair for Young Children was held in June 2007 for 10k and 5 lakh school students.

"The 2013 fair was with a big lift over the five years' raised for the fair during year."

Softly smiling teams, comprising their students and two teachers in each team, from 180 Rm schools in six designated zones nationwide completed their year," said Yusoff.

By **Naven Matthew Menon**



(From left) Akbar Dr. Vithayalil, Anandharan, Saravanan Vandenathar and Mohamed Yusoff. Mohamed Yusoff.



Chitra Permal (left) and Shanmugapriya Mohan.

Team invents water recycler

Teacher and pupils use bike for filtration

By **KATHLEEN ANN KILI**
newsdesk@thestar.com.my

JOHOR BARU: Three primary school pupils and a teacher here have invented a water purifying system using a modified bicycle.

SJK(T) Kangkar Pulai Science teacher S. Gomathy said the project, known as aqua bicycle, used recycled materials.

"The motor pumps dirty water from a container into the filter and then pumps out clean water into another container after filtration," she said.

The bicycle can convert a container of dirty water, mixed with stones, grass and even sand, to clean and clear water within minutes, it is claimed.

"The water can be used for bathing, washing and even drinking," said Gomathy, adding that it would still need boiling before drinking.

The team worked closely with Universiti Teknologi Malaysia, which Gomathy said had certified it to be as good as piped water.



Aqua bicycle: (From left) Sahmeeha, Jegatheswary and Sakthisundaran holding a gold medal they won in a competition.

The three students were Year 5 pupils P. Sahmeeha, N. Jegatheswary and S. Sakthisundaran.

"We learned a lot about the importance of clean water," said Sahmeeha.

Gomathy said the bicycle was inspired by orang asli in Kampung Layau Semerembu, Kota Tinggi.

"Although there is a river located just a few kilometres away, the villagers prefer to walk deep into the forest to collect cleaner water," she said.

The aqua bicycle has received much recognition during competitions including the National Science Fair for Young Children where the

team clinched the Best Innovation and Best Presentation titles back in 2011.

SJK(T) Kangkar Pulai is among 30 primary and secondary schools which submitted their entries for Johor's first Green Award, which will be held during the state-level Earth Hour celebrations on March 23.



தேசிய அறிவியல் விழா



(சுப்ரா)

காஜாங், ஜூலை 27- அண்மையில் காஜாங் கில் ஜெர்மன் மலேசிய கல்வி நிலையத்தில் ஏற்பாடு செய்யப்பட்டிருந்த இளம் ஆய்வாளர்களின் தேசிய அறிவியல் விழாவில் 60 தமிழ்ப்பள்ளிகள் கலந்து கொண்டன.

இந்தப் பள்ளிகளை பிரதிநிதித்துவமொத்தம் 300 மாணவர்கள் விழாவில் கலந்து

புத்தாக்க இயக்கத்தோடு இணைந்து மலேசிய கல்வி அறவாரியம், புத்ரா மஇகா மலேசிய மனிதவள புறநகர் மேம்பாட்டுக் கழகம் (புரா மலேசியர்), மலேசிய தலைமையாசிரியர் மன்றம், மலேசிய புது இந்தியர் சமூக நல அறப்பணி சங்கம் (பேரின் பம்), இந்திய பட்டதாரிகள் இயக்கம் ஆகிய அமைப்புகள் இந்த விழாவினை

விழாவின் வெற்றியாளர்கள்

புத்தாக்கப் பிரிவு

முதல் பரிசு - ராமகிருஷ்ணர் தமிழ்ப்பள்ளி

இரண்டாம் பரிசு - தங்காக்க தமிழ்ப்பள்ளி

மூன்றாம் பரிசு - வாகீசர் தமிழ்ப்பள்ளி

மாநாட்டுக் கட்டுரைப் பிரிவு

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வானவில்லும் அதிகாரப் பூர்வ நாளிதழ் ஊடகமாக

வழங்கியதாக இதில் சிறப்பு பிரமுகராக கலந்து கொண்ட



கொண்டு தங்களது படைப்பாற்றலை காட்சிக்கு வைத்திருந்தனர். அறிவியல் தொழில்நுட்ப

வெற்றிகரமாக நடத்தி முடித்துள்ளனர். இவ்விழாவில் அதிகாரப்பூர்வ ஒளிபரப்பு நிறுவனமாக ஆஸ்ட்ரோ

மலேசிய நன்னட்பும் விளங்குகின்றன. பிரதமர் துறை இந்த விழாவின் வெற்றிக்காக 5 லட்சம் வெள்ளி

துணைக் கல்வியமைச்சர் கமலநாதன் கூறினார். அநீதோடு எதிர்வரும் காலங்களில் அரசாங்கத்திடமிருந்தும் தமது அமைச்சின் சார்பாகவும் தொடர்ந்து பல்வேறு உதவிகளை தாம் செய்யவுள்ளதாக அவர் கூறினார். இந்த அறிவியல் விழாவை ஒரு போட்டியாக நினைக்காமல் விழாவாக நினைக்க வேண்டும் எனவும் இதில் கலந்து கொண்ட அனைத்து மாணவர்களும் வெற்றியாளர்களே என இதன் தலைமை நீதிபதி சண்முகம் கூறினார்.













இளம் ஆய்வாளர்களின் அறிவியல் விழா Science Fair for Young Children

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