Science Fair for Young Children

SFYC

அறிவியல் விழா

National SCIENCE FAIR FOR YOUNG CHILDREN REPORT • 2012

தேசிய அளவிலான இளம் ஆய்வாளர்களின்
அறிவியல் விழா ஆண்டறிக்கை • 2012

National Science Fair for Young Children
2012 Report

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and headmasters, headmistress, teachers, hundreds of other individuals, and parents,
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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

இயக்குனரின் தொகுப்பு...

“ புதுமையாய் இரு ....முற்போக்குடன் செயல்படு.....
உன்னுள் இருக்கிறான் பெரிய விஞ்ஞானி ..... ”

மலேசியாவில், இளம் ஆய்வாளர்களின் அறிவியல் விழாவானது தக்க பிரிவினர்க்கு தக்க தருணத்தில் நடைபெற்ற சீரிய முயற்சியாகும். அறிவியலை கற்பதற்கும் மற்றும் அதனை சார்ந்த ஆய்வறிவினை பெறுவதற்கும் நம் குழந்தைகளுக்கு முழு ஈடுபாடு தேவைப்படுகின்றது.இக்குறிக்கோளை அடைவதற்கு அறிவியல் விழாக்கள், மாணவர்களுக்கு அறிவியல் தலைப்புகள் மற்றும் கோட்பாடுகளை கற்பதற்கு ஒரு அரிய வாய்ப்பினை ஏற்படுத்தி கொடுக்கின்றது. இளம் ஆய்வாளர்களின் அறிவியல் விழா மட்டுமே நம் தமிழ்பள்ளி மாணவர்களின் அறிவியல் ஆற்றலை வெளி கொணரவும், எதிர்காலத்தில் அவர்கள் அறிவியலை கற்பதற்கும் பெரிதும் பயன்படுகின்றது. மலேசிய இந்திய அறிவியல் அறிவார்ந்தோர் இயக்கம் (MISI), மலேசிய சமூக மற்றும் கல்வி அறவாரியம் (MCEF), தலைமை ஆசிரியர் மன்றம், புத்ரா ம.இ.கா (PUTERA MIC), மலேசிய மனிதவள புறநகர் மேம்பாட்டு இயக்கம் (DHRRA Malaysia), நெகிரி செம்பிலான் தலைமை ஆசிரியர் மன்றம், மலாக்கா இந்திய இளம் பட்டதாரிகள் கழகம்- (MIYUGA) , இந்திய பட்டதாரிகள் இயக்கம் (Youth MC) மற்றும் பேரின்பம் ஆகியவர்களின் கூட்டு முயற்சியினால் இந்த வருடத்தின் இளம் ஆய்வாளர்களின் அறிவியல் விழா சிறப்பாக நடைபெற்றது. எங்களது நிகழ்ச்சி ஒளிபரப்பு ஆதரவாளராக ஆஸ்ட்ரோ வானவில் தங்கள் கடமையை செவ்வனே செய்து கொடுத்தனர்.

பிரதமர் துறை அமைச்சகம், மலேசிய சமூக மற்றும் கல்வி அறவாரியம் (MCEF), இ.சி.எம் லிப்ரா அறவாரியம், விஜயரத்தினம் அறவாரியம் மற்றும் மை நாடி அறவாரியம் ஆகியோரின் பேராதரவுடன் இளம் ஆய்வாளர்களின் அறிவியல் விழா இனிதே நடைபெற்றது. இந்த தருணத்தில், அறிவியல் விழா திட்டத்திற்கு உள்ளத்தாலும் நிதியாலும் ஆதரவளித்த மாண்புமிகு. டத்தோ. ஸ்ரீ ஹாஜி முஹம்மத் நஜிப் பின் துன் ஹாஜி அப்துல் ரசாக் மற்றும் நன்கொடையாளர்கள், அனைத்து தமிழ் பள்ளி தலைமை ஆசிரியர்கள், ஆசிரிய பெருந்தகைகள், பெற்றோர் ஆசிரியர் சங்க தலைவர்கள்(PIBG), மற்றும் அனைத்து நல்லுள்ளங்களுக்கும் எங்களது மனமார்ந்த நன்றியினை நவில்கின்றோம்.

இளம் ஆய்வாளர்களின் அறிவியல் விழாவின் குறிக்கோள் மிக எளிமையானது மட்டுமின்றி தெள்ள தெளிவானதாகும். அதாவது தமிழ் பள்ளி மாணவர்களை ஈர்க்க கூடிய விஞ்ஞான விந்தைகள் மற்றும் அவர்களின் எதிர்கால அறிவியல் முயற்சிக்கு பொறியாகவும், அறிவியல் தரம் மற்றும் அறிவியல் சார்ந்த தலைப்புகளை கற்று கொடுத்து அவர்களை ஈடுபட செய்வதே நோக்கமாகும். இது தவிர, இளம் ஆய்வாளர்களின் அறிவியல் விழாவானது மாணவர்களிடையே அறிவியல் கற்கும் திறனை மேம்படுத்துவதற்கும், அறிவியல் உண்மைகள் சார்ந்த ஆய்வு தாகத்தை தீர்ப்பதற்கும் உதவி புரிகின்றது. மாணவர்களின் விஞ்ஞான திறனை மேம்படுத்துவதற்காக, அவர்களின் அறிவியல் கருத்துகளை பொது இடத்தில் வழங்குவதற்காக ஊக்குவிக்கப்படுகின்றனர்.

இளம் ஆய்வாளர்களின் அறிவியல் விழாவானது இந்த வருடம் முறையே பள்ளி, மாநிலம் மற்றும் தேசிய அளவில் வெகு சிறப்பாக நடந்தேறியது. பள்ளி அளவிலான அறிவியல் விழா பிப்ரவரி முதல் செப்டம்பர் 2012 வரை நடைபெற்றது. இதில் அக்டோபர் 2012 வரை சுமார் 365 பள்ளிகளில் அறிவியல் விழா சிறப்பாக நடைபெற்றது. பள்ளி அளவிலான அறிவியல் விழாவிற்கு கிடைத்த அமோக வரவேற்பினால் எங்களால் 325 பள்ளிகளில் அறிவியல் விழா என்ற குறி இலக்கினை அடைய முடிந்தது.

மாநில அளவிலான அறிவியல் விழா மே முதல் ஜூன் 2012 வரை உள்ள கால கட்டத்தில் நடந்தேறியது. இதில் 9 மாநிலங்களில் நடைபெற்ற அறிவியல் விழாக்களில் சுமார் 269 பள்ளிகள் பங்கு பெற்றன. அறிவியல் விழாவில் நடைபெற்ற மாணவர்களின் கண்டுபிடிப்பு அளிக்கைகள் ஊக்கமூட்ட கூடியனவாக இருந்தது. ஆகஸ்ட் 3 முதல் 5 வரை, ஜெர்மன் மலேசியா கல்லூரி, பாங்கியில் நடைபெற்ற தேசிய அளவிலான அறிவியல் விழாவில் சிறந்த 60 பள்ளிகள் பங்கு பெற்றன. சுமார் 5000 பார்வையாளர்களை கவர்ந்த இந்த விழா மூன்று நாட்கள் சிறப்பாக நடைபெற்றது. முதல் மூன்று இடங்களை பெற்ற சிறந்த புதுமை படைத்தல் பிரிவு மற்றும் அறிவியல் ஆய்வு கட்டுரை அளிக்கைகள் பிரிவில் வெற்றி வாகை சூடியவர்களும், முதல் ஐந்து இடங்களை பிடித்த குழுக்கள் அறிவியல் விழா பிரிவில் வெற்றி பெற்ற மாணவர்களும் விழா மேடையில் கௌரவிக்க பட்டனர். முதல் ஐந்து இடங்களை பிடித்த சிறந்த புதுமை படைத்தல் பிரிவு மற்றும் அறிவியல் ஆய்வு கட்டுரை அளிக்கைகள் பிரிவில் வெற்றி பெற்றவர்கள் கோலாலம்பூர் மாநாடு மையத்தில் உள்ள "பெட்ரோ சயின்ஸ்" விஞ்ஞான நடுவத்திற்கும், தேசிய அறிவியல் விழாவில் தலைசிறந்த முதன்மை சான்ற வெற்றி பெற்றவர்களை இந்திய நாட்டின் பெங்களூருவில் உள்ள இந்திய விண்வெளி ஆய்வு கழகத்திற்கும், நிதி ஆதரவாளர்கள் உதவியுடன் அழைத்து செல்லப்பட இருக்கின்றனர்.

எங்களுடைய இவ்வாண்டின் ஆராய்ச்சி மற்றும் அபிவிருத்தி ஆய்வறிக்கையின் படி நமது இளம் ஆய்வாளர்களின் ஈடுபாடு மற்றும் கடமையுணர்ச்சி வியக்கதக்க அளவில் உள்ளது எனவும் சுமார் 90 விழுக்காட்டிற்கு மேல் மாணவர்கள் இளம் ஆய்வாளர்களின் அறிவியல் விழாவினால் மகிழ்ச்சியுற்றதாகவும் தெரிகின்றது. பள்ளிகளில் மாணாக்கர்களின் அறிவியல் கற்கும் திறன் மற்றும் ஆர்வம் அதிகரித்துள்ளதாக தமிழ் பள்ளி அறிவியல் ஆசிரியர்கள் தெரிவித்தனர். மேலும் தலைமை ஆசிரியர்கள், ஆசிரியர்கள் மற்றும் பெற்றோர்கள் ஒவ்வொரு வருடமும் அறிவியல் விழா நடைபெறவேண்டுமென விருப்பம் தெரிவித்துள்ளனர். மாணவர்களின் வகுப்பறை செயல்திறன் அதிகரிப்பினால், இளம் ஆய்வாளர்களின் அறிவியல் விழாவின் நோக்கமான அறிவியல் சார்ந்த கற்கும் திறன் தன்னிலை அடைந்துள்ளது.

செயற்குழுவினர், ஒருங்கிணைப்பாளர்கள் மற்றும் அனைத்து உறுப்பினர்களின் தன்னலமற்ற கடமை உணர்ச்சி, கூட்டு முயற்சியின் மூலமாகவே இளம் ஆய்வாளர்களின் அறிவியல் விழா 2012 ஒரு வெற்றி விழாவானது. செயற்குழு மற்றும் மாநில விழா குழுவினர்களிடையே அறிவியல் பின்புலம் மற்றும் தொழில் வல்லுனர்களை இடம் பெறசெய்வதன் மூலமாக எதிர் காலங்களில் மேலும் சிறப்பாக அறிவியல் விழாவினை மேன்மைபடுத்த முடியும். முத்தாய்ப்பாக, விழாவின் தூண்களான தமிழ் பள்ளி தலைமை ஆசிரியர்கள், ஆசிரியர்கள் மற்றும் பெற்றோர்களின் பங்கு அளப்பரியதாகும்.

அறிவியல் விழாவிற்கு பெற்றோர்கள் மற்றும் பொதுமக்களை ஈர்ப்பதற்கு பொதுத் தகவல் சாதனங்கள் மூலமாக பரப்பலும் விளம்பரமும் தேவைபடுகின்றது. பெற்றோர்கள் மற்றும் பொதுமக்களின் ஈடுபாட்டின் மூலமாக ஆரம்ப பள்ளி மாணவர்களை ஈர்க்க முடியும்.இவர்களின் ஆர்வம் மற்றும் நம்முடைய ஊக்குவிப்பு காரணமாக அறிவியல் விழா மற்றும் விஞ்ஞானம் சார்ந்த செயல்பாட்டினை அதிகரிக்க முடியும். அறிவியல் விழா ஆரம்ப பள்ளி அளவில் மட்டுமில்லாது மேல்நிலை பள்ளிகளுக்கும் செயல் படுத்த வேண்டுமென செயற்குழு பரிந்துரைக்கிறது. இதன் மூலமாக மேலும் பல மாணவர்களுக்கு அறிவியல் அறிவு தொடர்ச்சியாக கிடைக்குமென பேராவலுடன் எதிர்பார்க்கபடுகிறது.

Executive Summary

The Science Fair for Young Children is the greatest endeavor in Malaysia for the right group at the right time. Our children need the total involvement in learning science and experience the scientific skills through science based activities. Therefore science fairs are ideal in accomplishing the objective by giving students an opportunity to learn a scientific topic or concept in greater depth. The Science Fair for Young Children is the only event that can expose Tamil school student's talents at this age and be prepared for future learning of science.

This year's Science Fair for Young Children is a group effort by the Malaysian Indian Science Intellectuals (MISI), Malaysian Community & Education Foundation (MCEF), HM Council, Putera MIC, Development of Human Resources in Rural Areas Malaysia (DHRRA Malaysia), Negeri Sembilan's HM Council, Melaka Indian Young Undergraduates Graduates Association (MIYUGA), Youth MC and PERINNBAM. As our official broadcaster, Astro Vaanavil fulfilled their role and purpose.

The programme was supported by the Prime Minister's Department, Malaysian Community & Education Foundation (MCEF), ECM Libra Foundation, Vijayaratnam Foundation and MyNadi Foundation. We would like to take this opportunity to thank YAB Dato' Sri Haji Mohd Najib bin Tun Haji Abdul Razak for being the great supporter and funding us for this year's Science Fair project together with our funders, donors, all Tamil School Headmasters, Teachers, PIBG Chairmen 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 endeavors. Besides that, SFYC was formed to empower the students in the learning process and seek to satisfy their curiosity on the path of discovering scientific truths. They are also encouraged to present their ideas to the public through presentation of the project during the event while improving the scientific skills.

This year, we have successfully organised the School Level, Zone Level and National Level Science Fair for Young Children. The School Level Science Fair was held from February to October 2012. A total of 365 schools had successfully organised science fairs in their schools with over 80,000 children participated in this years event. The response for the School Level Science Fair this year was overwhelming as we achieved our target with 325 schools taking part.

June 2012. A total of 269 schools participated in the fair which was held in 9 zones across Malaysia. The presentation by the students during the fair was encouraging considering their age. The 60 best schools were selected to participate in the National Level Science Fair which was held on 3rd to 5th August 2012 at the German Malaysian Institute, Bangi, Selangor. The event was very successful with the attendance of over 5000 people which was held for 3 days. The top 3 winners of Innovation Category, top 3 winners of Conference Paper Presentation and the top 5 winners of Science Fair Category was appreciated on stage. The top 5 winners, the innovation category winner and the conference paper winner will be visiting Petrosains at KLCC whereas the Champion of the National Science Fair for Young Children 2012 will be visiting the Indian Space Research Organisation (ISRO) in Bangalore, India which was sponsored by our funders.

According to our Research and Development (R&D) survey report this year the involvement and commitment of our young scientists were extraordinary as more than 90% of them really enjoyed the SFYC. The headmasters, teachers and parents wanted the event to be organised every year and according to the Tamil school science teachers the involvement of the students in classroom teaching during the science subject had improved much. The students were involved in classroom activity more actively and this is an indication that the SFYC had achieved the objective in cultivating the scientific learning skill among those students.

The success of the SFYC 2012 was the cumulative effort of all the SFYC Working Group Committee (WGC), coordinators and all other members that had given their commitment for this great event which can be further improved by having more professionals with science background in the WGC and also in the zone organising team. Moreover, the involvement of Tamil schools headmasters, teachers and parents was crucial as they are the pillars of this event.

Therefore there is a need for more publicity and improvement of the approach through mass media as this will help to bring more parents and the general public to be involve in the SFYC. We hope by getting more involvement from parents and the general public, the primary students would be motivated and encouraged to involve themselves in the SFYC and other scientific activities. The committee also would like to recommend that this event to be organised for secondary schools students as a continuity process of scientific learning to reach more students.

'Be Innovative Be Progressive'
'The Great Scientist within You'

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 "live" 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 at the school, zone and national levels with over 80,000 children participating every year.

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 will have a better impact and benefit students interested in science rather than stage these fairs at Zone and National Levels. Each school was given a seed fund or prizes to organise their own SLSF and training was provided on how to organise these fairs.

This year, a total of 365 schools successfully organised the School Level Science Fairs in their schools and 269 schools nationwide participated in these fairs which were held in 9 zones. The National Level event was held from 3rd to 5th of August, at the German-Malaysian Institute in Bangi. The total expenses for organising the Schools, Zones and National Level Science Fairs amounted to RM XXXXXXX.

1.2 BACKGROUND

Science is the systematic study of nature and there is much knowledge to be gained through the learning process. While scientific facts are important, if the methods employed to discover or learn them are incomplete, it could hamper the 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 whereas 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 of scientists and educationists was formed and tasked with developing the concept, materials and the supporting structure to implement pilot projects. The following year, the first SFYC was held at the Dewan Tunku Cansellor, University Malaya and it was a big success with 49 teams from Selangor and Wilayah Persekutuan taking part. The enthusiasm shown by the young scientists was simply electrifying!

The SFYC was then expanded nationwide in 2008 with 197 teams from eight zones 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 Zone 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 Zone Level events in 9 zones nationwide and the national event was held at the AIMST University with 60 teams participating. The Zone Level Science Fair 2011 and 2012 were staged at 9 zones nationwide with 274 and 269 schools taking part respectively. The national event of SFYC 2011 and SFYC 2012 was held at the German-Malaysian Institute (GMI) with top 60 teams taking part.

1.3 OBJECTIVES OF SFYC 2012

- 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 an estimated 300 schools on 'hands-on' science, science projects and organise School Level Science Fairs.
- To encourage more schools to organise School Level Science Fairs.
- To empower co-ordinators to organise the 9 Zone Level Science Fairs.
- To organise a national level science fair for the best 60 school's science projects.

1.4 METHODOLOGY

The School Level Science Fair was organised by the working group committee. Last year's booklet was revised based on the comments from teachers randomly selected schools. A special training session was conducted in all the 9 zones. During the training the booklet and VCD was distributed to the representatives from the schools. The purpose was to encourage the schools to organise their own School Level Science Fair.

Milestones for SLSF 2012
(September 2011 – March 2012)

Table 1.1: Milestones of SLSF 2012 (September 2011 – March 2012)

Item	Time Frame
School Level Science Fair Meetings	Sept.2011
Booklet, Resource Materials and Presentation slide development	Oct.2011
Co-ordinators Meeting and Presentation on SLSF to co-ordinators	Nov. 2011
Sending of letters to Schools	Dec. 2011
SLSF capsule in ASTRO	Dec. 2011
Road Show (3rd and 4th week)	Jan. 2012
School Level Science Fairs	Feb. 2012
Closing of School Level Science Fairs	Aug 2012

The task of conducting the Zone and National Level Science Fairs was done by the working group committee. For the Zone Level Science Fair, the handbook was revised based on the feedback from the participants of previous years. The handbook was then compiled as a folder and also in CD format. The CD was distributed to the participating schools during the teachers training and workshops.

Milestones SFYC 2012
(September 2011 – September 2012)

Table 1.2: Milestones of SFYC 2012 (September 2011 – September 2012)

Item	Time Frame
Review and upgrade of SFYC Folder	Sept.-Nov.2011
Identify NGO partners and zone co-ordinators	Sept.-Nov.2011
Form SFYC 2012 Working Group	Oct. 2011
Develop a detailed implementation plan for SFYC 2012	Oct. 2011
Finalise SFYC 2012 Folder	Dec. 2011
Train local partners on conducting the Zone Level Fairs	Dec. 2011
Conduct Training and workshop for school teachers	Feb. 2012
Visit schools to observe and guide teams as needed	March 2012
Zone level SFYC 2012	Apr.-July 2012
National SFYC 2012	August 2012
Post-mortem of SFYC 2012	August-Sept. 2012
SFYC 2012 final report preparation	August-Sept. 2012

1.5 ZONE CATEGORISATION

Figure 1.1: Zone Categorisation of SFYC

Table 1.3: Number of Primary Tamil 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:

- Malaysian Indian Science Intellectuals (MISI) as the secretariat ,
- Malaysian Community & Education Foundation (MCEF),
- Head Masters Council,
- Putera MIC,
- Development of Human Resources in Rural Areas Malaysia (DHRRA Malaysia),
- Negeri Sembilan's Headmaster Council,
- Melaka Indian Young Undergraduates Graduates Association (MIYUGA),
- Pertubuhan Graduan Belia India (Youth MC) and
- Pertubuhan Kebajikan dan Amal India Baru Malaysia (PERINNBAM)
- ASTRO served as our official broadcaster.

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:

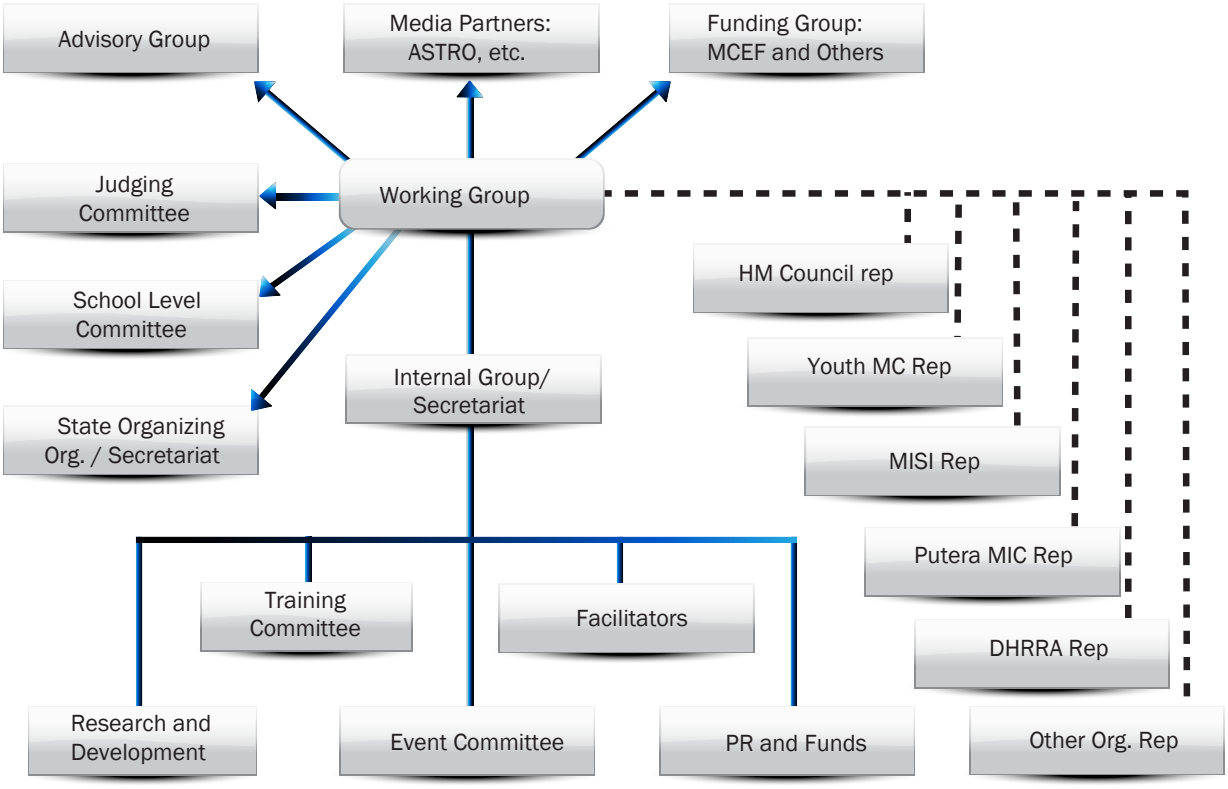


Figure: 1.2 The Organisation Structure of the Science Fair for Young Children 2012

Table 1.4: Responsibilities of Each Group

Groups	Members	Job Function
Advisory Council	Advisors: Dr.Mohd Yunus Mohd Yasin Dr.Subramaniam Gurusamy Mr.Elanjelian Venugopal Mr.Saminatha Kumaran Veloo	• Decision Making • Meet Twice a Year • Take over the SFYC after the Working Group Committee Dissolve
Working Group Committee (WGC)	Partner organisations representatives, Project Adviser(s), and Project Director, who will be the chairman.	• Policy making for SFYC Event • Decision making • Financial approval • Delegate and monitor the project • Guide the Internal Group • Meet every fortnight
Internal Group	Project Director, and SFYC Project Officers	• Plan and implement SFYC 2012 • 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	• Review the judging manual and upgrade the judging instruments • Work with zone coordinators to identify suitable judges for the Zone Level Science Fairs • Meet zone level judges as needed, provide training and guidance
Schools Level Science Fair Committee	Volunteers Chaired By the Project Advisor	• 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.
Facilitators Group Implementation Committees	Teachers and Volunteers (University students)	• Help out in organising zone level and national level fairs

1.7 ACHIEVEMENT OF THE PROJECT

The progress of the Science Fair over the last 5 years is as follows:

Table 1.5: Progress of the Science Fair over the last 5 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

This year, the Zone level science fair was conducted in 9 zones, with 269 Tamil schools taking part and 60 schools were shortlisted to take part in the National Level Science Fair 2012 which was held at the German-Malaysian Institute (GMI), Bangi from 3rd to 5th August 2012. The organisers have encouraged the schools to conduct School Level Science Fairs and 365 schools nationwide have done so with the support of the zone coordinators. The schools that had organised School Level Science Fairs and participated in the Zone Level Science Fairs, performed much better than all the other schools at the National Level Science Fair.

The organisers were surprised to see 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 brought science to life as they tackled investigative questions through hands-on experiments which helped them to develop and demonstrate their interests and knowledge in science.

Over the years, the organisers had noted many improvements in the thinking process of the Tamil school students who participated in the SFYC and among them were:

- Students approached problems using scientific methods.
- Students asked questions, formed hypotheses and created experiments to test their hypotheses.
- Students observed recorded data and drew conclusions from them.
- 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 the questions in different angles.
- Students were confident during presentation.

2 SCHOOL LEVEL SCIENCE FAIR

2.1 INTRODUCTION

The School Level Science Fair (SLSF) was introduced in Tamil schools in the year 2009 as a pilot project in the state of Johor or Zone 8. The project was conducted in all the 70 schools in Johor and it was a great success. Through that project, the Working Group Committee was of the opinion that School Level Science Fairs will have a better impact and benefits more students interested in science rather than stage these fairs at Zone and National Levels. 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 expected 250 schools nationwide to participate in the School Level Science Fairs, but the response was overwhelming as 256 schools successfully organised the fairs. A total of RM 137,150 was disbursed to the schools based on the payment criteria set by the Working Group Committee which was a maximum of RM400 per school.

A SLSF booklet related to the syllabus module was developed with the help of Dr.Subramaniam Gurusamy. The module contents were divided from Standard 1 to Standard 6. A CD was also prepared with sample proposals, experiments, reports, modules and some voice recordings of world scientists' profiles.

2.2 SEED FUND

Every school that confirmed its participation by sending their proposal to the zone coordinators were given a seed funding of up to RM400 or in kind (prizes, etc.).The funding criteria were based on the number of students in the school as per the table below:

Table 2.1: Payment Criteria for the School Level Science Fair

Students *(Average Per School)*	Payment *(Allocation)*
25 ≤	UP TO RM 200
50 ≤	UP TO RM 250
100≤	UP TO RM 300
200 ≤	UP TO RM 350
300 ≤	UP TO RM 400

The Zone Coordinators disbursed the money to the schools. In a few zones, the coordinators bought prizes for the schools instead of giving them cash. The timeline to organise the School Level Science Fair was from February 2012 until August 2012. This year, 365 schools out of 523 Tamil schools participated in the project. The details for the School Level Science Fair participation and fund disbursements for the 9 zones are as follows:

Table 2.2: SLSF Participation and Fund Disbursement for Each Zone

No.	Zone	State	No. of schools completed SLSF	Payment For SLSF (RM)
1	Zone 1	Kedah & Perlis	43	14,700
2	Zone 2	Pulau Pinang	20	8,000
3	Zone 3	Perak	77	28,000
4	Zone 4 & 5	Selangor and W.P Kuala Lumpur	68	28,000
5	Zone 6	Negeri Sembilan	46	16,100
6	Zone 7	Melaka	21	7,350
7	Zone 8	Johor	70	28,000
8	Zone 9	Pahang	20	7,000
		TOTAL	**365**	**RM 137,150**

2.3 IMPLEMENTATION OF SCHOOL LEVEL SCIENCE FAIR

The School Level Science Fair training for teachers was conducted from January until February 2012 and a total of 353 schools attended the training which was held in each zone. The science teachers and the headmasters/headmistress were also requested to attend the training session. The table below shows the dates, venues and the number of schools which attended the road show training.

Table 2.3: Participation of the Schools in the SLSF Training

Zone	State	Training Date	Training Venue	No. of Participated Schools
Zone 1	Kedah & Perlis	29 Jan 2012	SJK (T) Saraswathy	43
Zone 2	Pulau Pinang	28 Jan 2012	University Sains Malaysia, USM	14
Zone 3	Perak	28-29 Jan 2012	SJK (T) Tapah, SJK (T) Kg.Simee SJK (T) St .Theresa	86
Zone 4 & 5	Selangor & W.P Kuala Lumpur	04 Feb 2012	PJ State. Lotus Restaurant	60
Zone 6	Negeri Sembilan	11 Feb 2012	SJK (T) Lobak	42
Zone 7	Melaka	26 Jan 2012	Melaka State MIC Office	20
Zone 8	Johor	28 Jan 2012	Universiti Tun Hussein Onn Malaysia, UTHM	70
Zone 9	Pahang	04 Feb 2012	SJK (T) Raub SJK (T) Mentakab	18
			TOTAL	**353**

The participation of the School Level Science Fair is increasing every year and this shows the importance and support given by the schools to this programme. The details of their participation in the past 3 years are shown below:

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

No.	State(s)	Total Schools		
		2010	2011	2012
1	Kedah & Perlis	-	46	43
2	Pulau Pinang	-	-	20
3	Perak	-	45	77
4 & 5	Selangor & Wilayah Persekutuan	11	36	68
6	Negeri Sembilan	-	20	46
7	Melaka	-	21	21
8	Johor	70	70	70
9	Pahang	1	18	20
	TOTAL	**82**	**256**	**365**

Table 2.5: Number of students who benefited from the School Level Science Fair 2012

No.	Zone	State	Students Participation
1	Zone 1	Kedah and Perlis	9,784
2	Zone 2	Pulau Pinang	5,654
3	Zone 3	Perak	12,453
4	Zone 4 & 5	Selangor and W.P Kuala Lumpur	27,779
5	Zone 6	Negeri Sembilan	10,152
6	Zone 7	Melaka	3,356
7	Zone 8	Johor	14,317
8	Zone 9	Pahang	2,532
		TOTAL	**86,027**

Note: For the list of the schools which participated in each SLSF please refer to Appendix A

3 ZONE LEVEL SCIENCE FAIR

3.1 INTRODUCTION

The participation of the schools in the Zone Level Science Fair has been improving over the years. In 2008 and 2009 there were 6 zones focused by the organisers but in 2010 the organising committee made changes in the number of zones by increasing the zones to 9. This was to ensure more schools are given the opportunity to take part in the Zone Level Science Fair. This year the organising committee decided to retain the 9 zones as in previous years.

Until 2010, the schools were allowed to send more than one team to take part in the Zone Level Science Fairs. But starting 2011, the organising committee decided to allow only one team to take part in Zone Level Science Fair from each school.

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 and 2012
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 the Zone Level Science Fair in 2008 and 2009

Zone	State	Total Schools		Total Teams	
		2008	2009	2008	2009
1	Kedah, Pulau Pinang & Perlis	28	28	31	32
2	Perak	18	15	21	18
3	Selangor & W.P Kuala Lumpur	58	74	58	74
4	Melaka & Negeri Sembilan	4	3	4	3
5	Johor	57	54	64	63
6	Pahang & Kelantan	15	14	19	17
	TOTAL	**180**	**188**	**197**	**207**

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

Zone	State	Total Schools		Total Teams	
		2010	2011	2010	2011
1	Kedah & Perlis	17	41	20	41
2	Pulau Pinang	16	16	16	16
3	Perak	50	47	53	47
4	Selangor	54	56	54	56
5	Wilayah Persekutuan, Kuala Lumpur	14	13	14	13
6	Negeri Sembilan	18	18	22	18
7	Melaka	21	21	21	21
8	Johor	59	45	68	45
9	Pahang & Kelantan	14	17	17	17
	TOTAL	**263**	**274**	**285**	**274**

This year, the Zone Level Science Fair was held in May and June, about a month before the National event. The shortlisted schools for the National Level Fair were given one month time to improvise 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 Dates and Venue

No.	States	Dates	Venues
1	Kedah & Perlis	Saturday, May 19, 2012	SJK (T) Saraswathy,Kedah
2	Pulau Pinang	Sunday, May 27, 2012	University Sains Malaysia, Penang
3	Perak	Saturday, May 26, 2012	Masterskill, Ipoh
4	Selangor	Saturday, June 16,2012	Dewan Tunku Cancelor, University of Malaya
5	W.P Kuala Lumpur	Saturday, June 16,2012	Dewan Tunku Cancelor, University of Malaya
6	Negeri Sembilan	Saturday, May 19, 2012	SJK C Pei Hua, Seremban
7	Melaka	Sunday, June 24, 2012	Rumah Media, Melaka International Trade Centre(MITC)
8	Johor	Sunday, June 10, 2012	University Tun Hussein Onn Malaysia,Johor
9	Pahang & Kelantan	Sunday, June 24, 2012	SMK Hwa Lian, Mentakab

Table 3.5: Schools Participation in the Zone Level Science Fair

Zone	State	Total Schools
1	Kedah & Perlis	34
2	Pulau Pinang	19
3	Perak	53
4	Selangor	35
5	Wilayah Persekutuan, Kuala Lumpur	10
6	Negeri Sembilan	30
7	Melaka	21
8	Johor	52
9	Pahang & Kelantan	15
	TOTAL	269

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

3.2 IMPLEMENTATION OF ZONE LEVEL SCIENCE FAIR

3.2.1 ZONE 1: KEDAH & PERLIS

The Zone 1 was coordinated by Mr. Themudu Subramaniam and students from the Teacher's Training Institution, Sultan Abdul Halim Campus, Kedah. The Zone Level Science Fair was held on 19 May 2012 at SJK (T) Saraswathy Hall. The event was officiated by Major Dr. Vikneswaran Munikanan, the project director of the National Science Fair for Young Children 2012. A total of 34 schools were participated in the Zone Level Fair and the top 7 schools were selected to participate in the National Level Science Fair. Even though the coordinator and his team were conducting the fair for the first time, they managed to encourage the schools to take part and perform well.

(For details and account, please refer to Appendix C (i))

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 27 May 2012. The fair was officiated by Dato' Pulenventhiran, Exco Member of Yayasan Pencegahan Jenayah Malaysia. A total of 19 schools successfully participated in the fair and the top 5 teams were selected for the National Fair. Mr. Edwin and his team have successfully increased the schools participation from 16 schools in 2011 to 19 schools in 2012.

(For details and account, please refer to Appendix C (ii))

3.2.3 ZONE 3: PERAK

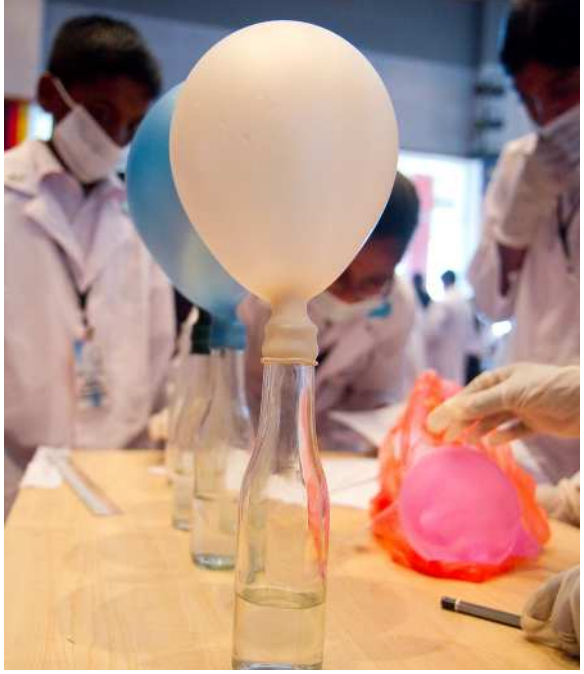
This year, Zone 3 was organised by one of our partner organisations, DHRRA Malaysia and was coordinated by Mr.Suresh Kuppusamy. The zone fair was held on 26 May 2012 at the Masterskill Campus in Ipoh. The event was officiated by Y.Bhg. Dato' S. Veerasingam, Special Advisor to the Menteri Besar of Perak. A total of 53 schools successfully participated in the fair and the top 11 schools were selected to participate in the National Level Science Fair. This year, there was an improvement in the number of schools participation compare to last year.

(For details and account, please refer to Appendix C (iii))

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 16 June 2012 at the Dewan Tunku Chancellor, University of Malaya. The guest of honour was Y.B. Dato' SK Devamany, Deputy Minister in the Prime Minister's Department. A total of 35 schools from Selangor and 10 schools from Kuala Lumpur took part in the Zone Level event. The top 8 schools from Selangor and the top 3 schools from Kuala Lumpur were chosen for the National Level event.

(For details and account, please refer to Appendix C (iv))



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 19 May 2012 at SJKC Pei Hua, Seremban and it was officiated by Mr. Palani, the president of the Indian Graduates Association of Negeri Sembilan. For the first time 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 increase the schools participation in the Zone Level Fair.

(For details and account, please refer to Appendix C (v))

3.2.6 ZONE 7: MELAKA

The Melaka Zone Fair was organised by our new partner, Melaka Indian Young Undergraduates and Graduates Association (MIYUGA) which was led by Mr Rama Sockalingam. The team staged the fair on 24 June 2012 at Rumah Media, Melaka International Trade Centre (MITC). The closing ceremony was officiated by YB Datuk G Palanivel, Minister in Prime Minister's Department and President of the Malaysian Indian Congress (MIC). For 3 consecutive 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 details and account, please refer to Appendix C (vi))

3.2.7 ZONE 8: JOHOR

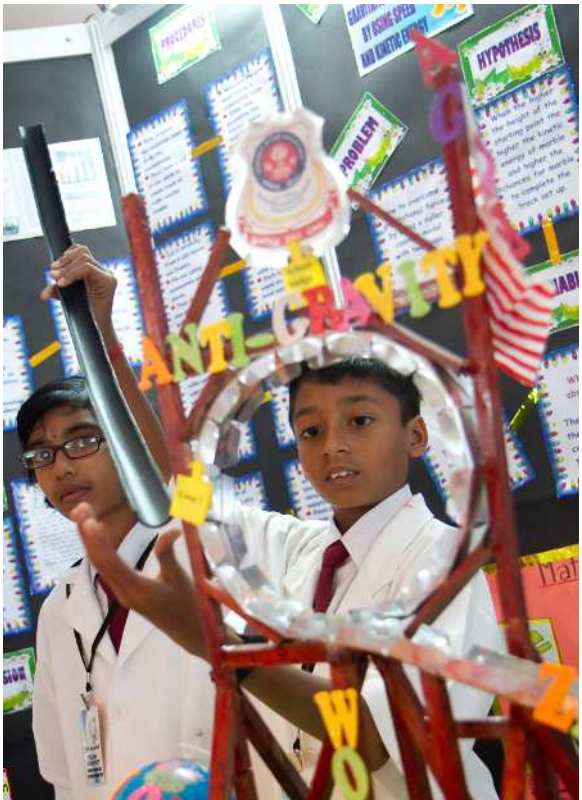
Johor Putera MIC and UTHM students teamed up to organise the Johor Zone Science Fair and the team was led by Mr Saravanan Vimalanathan. The event was held on 10 June 2012, at University Tun Hussein Onn Malaysia (UTHM), Batu Pahat. The guest of honour for the closing ceremony was Y.Bhg. Dato' Randhir Singh Johl, the MIC Central Working Committee Member. A total of 52 schools were participated in the fair and the top 11 schools were selected to participate in the National Level Science Fair.

(For details and account, please refer to Appendix C (vii))

3.2.8 ZONE 9: PAHANG & KELANTAN

The Pahang Zone Fair was organised by our new partner, Pertubuhan Kebajikan dan Amal India Baru Malaysia (PERINNBAN) and coordinated by Mr. Jayashri Selvendran. The event was held on 24 June 2012 at SMK Hwa Lian, Mentakab and the chief guest was Mr Goonasekaran, the Pahang Menteri Besar's Special Officer. A total of 15 schools were participated in the fair and the top 3 schools were chosen to take part in the National Level Science Fair.

(For details and account, please refer to Appendix C (viii))



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) 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 CD's to all the participating schools during the Zone Level Teachers Training. Some of the new schools were 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 would 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 the 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 made into CD's were given to all the participating schools during the Zone Level Teachers Training. The content in the CD had been upgraded with new information to help the schools prepare for the Zone and National Level Science Fair. The content of the CD is shown below:

i. Science Fair Folder Content (PDF Copy)
ii. Booth Presentation of NSFYC 2011(Video)
iii. Conference Paper Presentation of NSFYC 2011(Video)
iv. Booth Setup and Preparation of NSFYC 2011(Video)
v. Capsule (2009 and 2010) (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 zone level Teacher's training, the trainers were trained and briefed by Dr.Subramaniam on the agenda and information which to be delivered to the teacher. The content of the training for trainers and teachers is shown below:

Session 1 (30 Minutes)
- Introduction about the Science Fair, Partner NGOs, Importance of the Science Fair (5 Minutes).
- Presentation on the Scientific Methodology with examples (25 Minutes).

Session 2 (20 Minutes)
- Presentation and explanation of One(1) sample of Partially Guided Experiment (20 Minutes).

Session 3 (1 hour 30 Minutes) Workshop –Group Discussion
- All the teachers given pendulum experiment (Individual Activity).
  I. Teachers were given 15 minutes to answer.
  II. Discussion with sample answers (15 Minutes).
  III. Do not collect the answer paper from teachers.
- The teachers were divided into groups (10 teachers per group).
  I. The groups were given 1 or 2 (depended on the number of teachers per group) non guided experiment topic to discuss and plan for the experimental set up (30 Minutes).
  II. Two groups were selected to make a presentation (15 minutes).
  III. Discussion with sample answers (15 Minutes).

Session 4 (20 Minutes)
- Judging Methodology (20 Minutes).

Session 5 (1 Hour 15 Minutes)
- Detailed explanation of all the 20 experiments (Based on Diagram & Clues).

4.2 ZONE LEVEL TEACHERS TRAINING

The Science Fair for Young Children 2012 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 for 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 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 the prior arrangements. All the School Level and Zone Level teachers training sessions were conducted as stated below.

Table 4.1 Zone 1: Kedah and Perlis

Teachers Training	Date	Venue	Training Team	No. of schools
School Level Science Fair	29 January 2012	Dewan SJK(T) Saraswathy, Kedah	Mr. Kugeneswaran and team	43
Zone Level Science Fair	31 March 2012	Dewan SJK(T) Saraswathy, Kedah	Mr. Kugeneswaran and team	40

Table 4.2 Zone 2: Pulau Pinang

Teachers Training	Date	Venue	Training Team	No. of schools
School Level Science Fair	28 January 2012	University Sains Malaysia, Pulau Pinang	Mr. Kugeneswaran and team	14
Zone Level Science Fair	11 March 2012	University Sains Malaysia, Pulau Pinang	Dr.Yunus Yasin and team	12

Table 4.3 Zone 3: Perak

Teachers Training	Date	Venue	Training Team	No. of schools
School Level Science Fair	28 January 2012 29 January 2012	SJK (T) Tapah, SJK (T) Kg.Simee SJK (T) St Theresa Convent	Maj.Dr.Vikneswaran and team	86
Zone Level Science Fair	31 March 2012 1 April 2012	SJK (T) Tapah, SJK (T) Kg.Simee SJK (T) St Theresa Convent	Maj.Dr.Vikneswaran and team & Mr. Kugeneswaran and team	64

Table 4.4 Zone 4 & 5: Selangor and Kuala Lumpur

Teachers Training	Date	Venue	Training Team	No. of schools
School Level Science Fair	4 February 2012	PJ State Lotus Restaurant (Function Hall)	Dr. Subramaniam and team	60
Zone Level Science Fair	24 March 2012	Dataran Menteri (Function Hall)	Maj.Dr.Vikneswaran and team	44
Zone Level Science Fair 2nd Training	7 April 2012	SJKT Vivekananda, Petaling Jaya	Maj.Dr.Vikneswaran and team	22

Table 4.5 Zone 6: Negeri Sembilan

Teachers Training	Date	Venue	Training Team	No. of schools
School Level Science Fair	11 February 2012	SJK (T) Lobak	Maj. Dr.Vikneswaran and team	42
Zone Level Science Fair	24 March 2012	SJK (T) Lobak	Mr.Vijendran and team	32

Table 4.6 Zone 7: Melaka

Teachers Training	Date	Venue	Training Team	No. of schools
School Level Science Fair	26 January 2012	Melaka State MIC Office	Dr. Subramaniam and team	20
Zone Level Science Fair	23 March 2012	Melaka State MIC Office	Mr. Vijendran and team	21

Table 4.7 Zone 8: Johor

Teachers Training	Date	Venue	Training Team	No. of schools
School Level Science Fair	28 January 2012	UTHM, Batu Pahat	Dr. Subramaniam and team	70
Zone Level Science Fair	24 March 2012	UTHM, Batu Pahat	Dr. Subramaniam and team	55

Table 4.8 Zone 9: Pahang and Kelantan

Teachers Training	Date	Venue	Training Team	No. of schools
School Level Science Fair	04 February 2012	SJK (T) Raub & SJK (T) Bandar Mentakab	Maj. Dr.Vikneswaran and team	18
Zone Level Science Fair	10 March 2012	SJK (T) Bandar Mentakab	Maj. Dr.Vikneswaran and team	17

5 NATIONAL LEVEL SCIENCE FAIR FOR YOUNG CHILDREN 2012

5.1 OVERVIEW

The National Science Fair for Young Children 2012 (NSFYC) was a three (3) days event which started on Friday evening and ended on Sunday evening. The details of the event are as follows:

Date	: 3rd August 2012 – 5th August 2012
Venue for Accommodation	: Kolej Pendeta Za'ba, Universiti Kebangsaan Malaysia (UKM).
	: Hotel Reko Inn, Kajang
Venue for Science Fair Event	: Dewan Gemilang Mercu Idaman, German Malaysian Institute (GMI), Bangi, Selangor.

A special team was formed two months earlier by the Working Group Committee to organise the three (3) days National Science Fair for Young Children 2012. The event committee was led by Mr.Suresh Ramasamy. 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 100 volunteers from all over the country including zone volunteers assigned by the zone coordinators.

Table 5.1: List of Heads of Departments for the National Science Fair for Young Children 2012

No	Name	Department/Position
1	Mej. Dr. Vikneswaran Munikanan	Project Director and Advisor for Event Committee
2	Mr.Suresh Ramasamy	Head of Event Committee
3	Mr.Aghilan Manathan	Event Committee Assistant
4	Ms.Vanitha Vasu	Head of Accommodation & Registration Department
5	Ms.Umahsankariah Muthunaikar	Head of Press Management
6	Ms.Vijia Letchumy Rajoo	Head of Judging & Conference Paper Department
7	Ms.Sivasangkary Gandhi	Head of Stage and Prize Management
8	Mr.Murrali Prakash	Head of Food and Beverages Department
9	Mr.Raman Subrayan	Head of Games and Quizzes Department
10	Mr.Kannan	Head of Crowd Management
11	Mr.Kugeneswaran Tamilmany	Head of Media Management
12	Ms.Chitra Perumal	Head of Ushering Department
13	Ms.Sivamalar	Head of Facilitators and Volunteers Management
14	Mr.Balachandran	Head of Hall Management
15	Mr.Kavi Nanthan	Head of Traffic, Transportation and Security Department

The event was very well coordinated by all the volunteers and run very smoothly. The team did not experience any major problems. The teams were well coordinated by the Head of Event Committee and all the HODs.

The events were coordinated as follows:

Day 1(3 August 2012-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 Maj Dr. Vikneswaran and Ms.Umahsankariah. The briefing was mainly on the itinerary for the 3 days and rules and regulations of the premises and event. Meanwhile, the students participated in an Astronomy session and took their dinner as well. Then they check-in into their rooms at Kolej Pendeta Za'ba, Universiti Kebangasaan 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.

Day 2(4 August 2012-Saturday)

On the second day, the participants and teachers start moving from UKM to GMI at 7.00am. After breakfast, the students and teachers start preparing their booths until 9.30am when they were involved in hands-on experiments for 1 ½ hours followed by the judging evaluation. The judging evaluation took nearly 3 ½ hours.

Meanwhile, the teachers were involved in activities such as discussion sessions with the organising team, motivational talk, and Judging Department sharing sessions. Lunch was served from 12.00 noon to 1.00pm. After that, the students continued with the judging evaluation while the teachers participated in an interactive session conducted by Petrosains, KLCC. 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 Mercu Idaman, German Malaysian Institute (GMI) and it was officiated by YB Senator Tuan A. Kohilan Pillai, Deputy Minister, Ministry of Foreign Affairs, Malaysia. As an appreciation of participation in the National Event, YB Senator A. Kohilan Pillai announced that all the 60 schools would be given RM 500 each. This year the SFYC team organised an appreciation for two former Kulim Tamil School students Rama Murthi and Sri Arivesh who had done the country proud by winning a prize in the Genius Olympiad 2012 International High School Project Fair on Environment, in New York. They won the third place with their creation of an alarm system called "Neighbours Wonder", in the competition participated by 246 students from 50 countries, which was held from June 24 to 29. This is a great motivation for our young scientist to be more involved in our event. The participants were given refreshments from 4pm to 5pm 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 4 parallel sessions. The top three teams from each zone presented their research and findings from their experiments. A total of 27 teams participated in this section and the top 2 teams from 4 groups were selected for a viva session on the following day.

Day 3(5 August 2012-Sunday)

The day started at 7am, where all the participants checked out from the hostel at UKM and reached GMI. After breakfast, the participants prepared for the opening ceremony for public viewing at 9.30am. The ceremony was officiated by YB Datuk Seri Dr.S.Subramaniam, Minister of Human Resources who was the representative to Prime Minister YAB Dato' Sri Haji Mohammad Najib Bin Tun Haji Abdul Razak. YB Datuk Seri Dr.S.Subramaniam visited all the 60 booths and the students were very happy with his presence.

Meanwhile the VIVA session was held at a lecture hall at GMI for the selected top 8 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, MISI (Malaysian Indian Science Intellectuals Association), Youth MC, DHRRA Malaysia, Perinnbam, ASTRO, Grolier Books and Embracing the World (Organ Donation). 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 11am to 2pm. The forum was chaired by the Science Fair for Young Children Advisory Board and the organising team.

At 3.45pm, the closing ceremony began and ended at 5.30pm. The guest of honour for the closing ceremony was Prof. Dr. Kurunathan Ratnavelu, Deputy Vice Chancellor of Development, University Malaya. 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 5 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 president of MyNadi Foundation announced that the top 5 winners, the Innovation Category winner and the Conference Paper winner will be visiting Petrosains at KLCC whereas the Champion of the National Science Fair for Young Children 2012 will be visiting the Indian Space Research Organisation (ISRO) in Bangalore, India. The list of NSFYC 2012 winners are as follows:

NSFYC WINNERS

1. **SJK (T) METHODIST KAPAR**
2. **SJK (T) KANGKAR PULAI**
3. **SJK (T) VAGEESAR**
4. **SJK (T) LADANG KULAI BESAR**
5. **SJK (T) TAMAN TUN AMINAH**

INNOVATION CATEGORY

1. **SJK (T) SENTUL**
2. **SJK (T) LADANG RUBANA**
3. **SJK (T) LADANG LANADRON**

CONFERENCE PAPER PRESENTATION

1. SJK (T) SUNGAI BIONG
2. SJK (T) LADANG LANCHANG
3. SJK (T) TAMAN TUN AMINAH

5.2 NATIONAL SFYC FORUM

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

Table 5.2: List of people attended the National Forum

No	Name	Position
1	Dr.Mohd Yunus Mohd Yasin	Founder
2	Dr.Subramaniam Gurusamy	Project Advisor
3	Maj.Dr.Vikneswaran Munikanan	Director
4	Mr.Paskaran Subramaniam	Pengelolah Kanan Bahagian Sekolah
5	Mr.Nadarajah	Johor State Level Science Fair Advisor
6	Mrs.Vasugi a/p Sellappan	Penyelia Sekolah-Sekolah Tamil Melaka
7	Mr.Mathawan a/l Sankaran Nair	Penyelia Sekolah-Sekolah Tamil Negeri Sembilan
8	Mr.Denial Amaldass	Penyelia Sekolah-Sekolah Tamil Selangor
9	Mr.Kalidass	Penyelia Sekolah-Sekolah Tamil Pulau Pinang
10	Mr.Ramakrishnan a/l Tharumaini	Penyelia Sekolah-Sekolah Tamil Kedah
11	Mr.Pushpanathan a/l Appan	Penyelia Sekolah-Sekolah Tamil Pahang
12	Mr.Doraisamy	Majlis Guru Besar Selangor
13	Mr.Velayutham a/l Ratnam	Majlis Guru Besar Pahang
14	Mr.Veerasamy a/l Annamalai	Majlis Guru Besar Pulau Pinang
15	Mr.Joseph William	Majlis Guru Besar Negeri Sembilan
16	Mrs.K.Rajamani	Majlis Guru Besar Johor
17	Mrs.M.Supaletchuny	Majlis Guru Besar Kuala Lumpur
18	Mr.Saravanan Vimalanathan	Johor Coordinator
19	Mr.Rama Socklingam	Melaka Coordinator
20	Mr.Suresh Kuppusamy	Perak Coordinator
21	Ms.Chitra Perumal	KL & Selangor Coordinator
22	Mr.Saravanan Sinappan	DHRRA Malaysia
23	Mr.Edwin Anand Raj	Penang Coordinator
24	Mr.Jayashri Selvendran	Pahang Coordinator

6 RESEARCH AND DEVELOPMENT DEPARTMENT

6.1 OVERVIEW

The Research and Development (R&D) Department is one of the main sectors in the Science Fair Committee. It is a sector which basically works to create science related questions for young students. This R&D unit stands with a few well committed personals from the various field of education. The role of R&D is to gather facts, conduct a systematical study on the questions development, develop the details into a SFYC experiment titles and conduct detail surveys on the preliminary and post evaluation to get the project updates and effectiveness for the year 2012. The R&D Department is led by Miss Sivasangkary Gandhi.

6.2 EXPERIMENTS

Initially, the list of partially guided experiments that were developed had 20 experimental titles. This process took three months from September to November 2011. All the experiments were then analysed for its relevancy, cost, applicability, difficulties, material availability and safety. In this stage, 6 out of the 20 experiments were removed. All these experiments were discussed with the core judges and advisors of the SFYC and then finalised. Another 7 experiments were developed and finalised with the judging coordinator, chief judges and advisors. All the experiments were translated into the Tamil language and were ready to be submitted to the schools by February 2012. The list of experiments is attached in the Appendix D. Parallel with the experiment developing task, in December 2011, quizzes, crossword puzzles, and origami were developed for the School Level Science Fair.

6.3 SURVEYS

This year the R&D departments were conducting survey for,

I. Zone Level Science Fair Teacher's training
II. Zone Level Science Fair for Young Children
III. National Level Science Fair for Young Children
IV. Experimental Survey during the National Level Science Fair for Young Children.

The surveys were analysed by using SPSS Statistical Software version 19. The data of the survey was overviewed to correct and upgrade our future projects. For further details on the survey, please refer to Appendix E.

6.4 SCHOOL LEVEL SCIENCE FAIR SURVEY

The School Level Science Fair survey was conducted by the project officer via phone with the randomly selected schools in each zone. The School Level Science Fair teachers who were in charge were interviewed to get feedback on the fair and the materials provided to them. The detailed report is attached in Appendix E.

7 PUBLIC RELATION

For Science Fair for Young Children, the Public Relations (PR) Department, managed the flow of information between the Science Fair organisers and the general public. The Science Fair for Young Children programme was promoted among the public via press releases and interviews over radio and television. The flow of information between internal and external viewers 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 broadcaster and media partner, fulfilled their role and purpose. The Public Relation activities carried out to promote the Science Fair for Young Children 2012 is shown below:

1) School Level Science Fair 2012

- School Level Science Fair Soft Launching officiated by Dr Shanmuga Siva on 17th January 2012 at the Science Fair Secretariat Office.
- Press Conference by Dr Shanmuga Siva and Dr Mohd Yunus Mohd Yasin on 17th January 2012 at the Science Fair Secretariat Office.
- The soft launching was broadcasted over RTM TV 2 News on 18th January 2012.
- 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.

2) Zone Level Science Fair 2012

- Press release for Zone Level Teachers Training and Zone Level Science Fair.
- The pamphlets were distributed to the coordinators in order to promote the fair in their zones.
- Interview in ASTRO Vaanavil Vizhuthugal.

3) National Level Science Fair 2012

- Vasantham Interview attended by Dr Subramaniam Gurusamy, the advisor of SFYC and
- Maj. Dr. Vikneswaran Munikanan, the project director of SFYC 2012.
- Pamphlets were sent to VIP, Guest, Funders and all well-wishers to provide information about the SFYC.
- Launching and Fund Raising Dinner officiated by YB Datuk Seri Dr.S.Subramaniam, Minister of Human Resources on 26 April 2012 at Kandiah hall, SJK (T) Vivekananda, Brickfields, Kuala Lumpur.
- Press Conference by YB Datuk Seri Dr.S.Subramaniam, Dr.Mohd Yunus Yasin and Maj. Dr. Vikneswaran Munikanan on 26 April 2012 at Kandiah hall, SJK (T) Vivekananda, Brickfields, Kuala Lumpur.
- The Launching and Fund Raising Dinner was broadcasted over RTM TV 2 News on 27 April 2012.
- The Launching and Fund Raising Dinner was broadcasted over ASTRO Vaanavil 360.
- NSFYC 2012 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 2012.
- A promotional capsule which was sponsored by ASTRO was telecast over ASTRO Tamil Channels two weeks before the National Event.
- Promotion over THR Raaga information zone.
- Interview over ASTRO Vaanavil Vizhuthugal before the event.
- Interview of the Winning team in ASTRO Vaanavil Vizhuthugal after the event.
- Interview of the Winning team of NSFYC 2012 in Minnale FM.
- Interview of the Project Director in Paarvai programme.

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

8 FUNDING

The Science Fair for Young Children 2012 was funded by our honorable Prime Minister YAB Datuk Seri Haji Mohammad Najib Bin Tun Haji Abdul Razak, Malaysian Community & Education Foundation - Centre for Community Initiatives (MCEF-CCI), ECM Libra Foundation, and Vijayaratnam Foundation. They are the main sponsors for the prestigious event.

MCEF-CCI was involved in the project as the main funder from the very beginning and facilitated the team of experts who designed the programme concept. Besides that, ECM Libra Foundation was funding towards the success of the project for 4 years continuously since 2009. This year funded for venue, accomodation, food and transportation. These funding organisations are the backbone towards the achievements and success of the event. The funds granted and disbursed by our major sponsors is as follows:

Table 8.1: Funds Granted and Disbursed by Major Sponsors

School/Zone/National Fair	Sponsor	Grant Allocation (RM)
School Level Science Fair	MCEF-CCI	80,000.00
	Vijayaratnam Foundation	30,000.00
Zone & National Level Science Fair	Prime Minister's Department (Ministry of Finance)	500,000.00
	MCEF-CCI	170,000.00
	ECM Libra Foundation	107,310.00
	GRAND TOTAL (RM)	**887,310.00**

Payment amounting to RM112, 200 is still pending due to a delay in report submission by zone coordinators to the SFYC Working Group Committee (WGC). The allocation will be reimbursed when all the reports are submitted to the respective funders.

This year, the Science Fair Working Group Committee decided to organise a Launching and Fund raising Dinner which was held on 26 April 2012(Thursday) at the Kandiah Hall, SJK (T) Vivekananda, Brickfields, Kuala Lumpur and the guest of honour who officially launched the event was YB Datuk Seri Dr.S.Subramaniam, the Minister of Human Resources. The dinner tables were sold for RM 800 each and there were a few kind-hearted individuals who pledged donations on stage. The funds raised through the event are as follows:

Table 8.2: Fund Collection in Launching and Fund raising Dinner 2012

No.	Sponsor	Amount (RM)
1	YB Datuk Seri Dr.S.Subramaniam (Human Resources Ministry)	10,000.00
2	Mr.Tharuma Rajah (HAY Group Sdn Bhd)	10,000.00
3	Datuk Dr.Palan	5,000.00
4	Mr.Rajendran (Perinnbam)	2,000.00
5	Putera MIC	1,000.00
6	Warisan Mega Maju	100.00
7	Mr.Chandran Ramasamy	50.00
8	Dinner Table Collection	3,300.00
	GRAND TOTAL (RM)	**31,450.00**

A few targeted funders were approached through emails and official letters were sent by the key stakeholders. After receiving positive responses from them, they were told about the importance of the SFYC and the funds needed for the fair. The details of the external funding are listed below:

Table 8.3: Contributions from External Funders

No.	Sponsor	Amount (RM)
1	National Land Finance Co Operative Society (NLFCS)	10,000.00
2	Event Day Collection	195.00
	GRAND TOTAL (RM)	**10,195.00**

Many other corporate companies were also approached to sponsor products for the programme. A few companies responded positively and sponsored the following products for the National event. The list of the companies is as follows:

Table 8.4: Sponsor of Products for NSFYC 2012

No	Donors	Items	Quantity
1	MPH Book Stores	Discount voucher	1,000 pcs
2	Permanis Sdn Bhd	200ml Twister Blackcurrant(1000) and 1.5L Twister Orange(120)	12,00 bottles
3	Dutch Lady	Packet Drinks	240 packets

The contributions from sponsors which ensured the success of the Science Fair were highly appreciated by the Working Committee of SFYC 2012. All the products sponsored were delivered to our participants during the event day. We believe that the contributions will also serve as good publicity and a good marketing strategy for the products to our participants who were aged between 10 – 11 years old, teachers, parents and the public who visited our fair. As an appreciation to all our sponsors we included their company logo in all our promotional materials such as banners, buntings and the programme book.

The summary of funding for the Science Fair for Young Children 2012 is as stated below:

Table 8.5: Summary of Funding for the Science Fair for Young Children 2012

No.	Sponsors	Payment Received (RM)	Pending Payment(RM)
1	Major Funding	775,110.00	112,200.00
2	Fund Raising Dinner Collection	31,450.00	
3	External Funding	10,195.00	
	GRAND TOTAL (RM)	**816,755.00**	**112,200.00**

9 JUDGING

Judging Panel is a group of qualified individuals who are responsible for evaluation of student research experiments and exhibits for compliance with the rules and regulations. The Judging Department in the Science Fair was set up to judge the students performance base on a category. The judges were selected based on their educational background, occupational background and knowledge in science. Only science graduates were picked as judges. The Judging Panel assisted the Organising Committee in reviewing and judging the experiments or projects.

9.1 ZONE CHIEF JUDGES TRAINING

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

Table 9.1: Zone Chief Judges

Zone	State	Chief Judges Name
1	Kedah and Perlis	Mr. Thangavelo
2	Pulau Pinang	Mr. Arunan Siwaraju
3	Perak	Mr. Sathiakumaran Krishnan
4 & 5	Selangor and W.P.Kuala Lumpur	Mr. Manivannan V Gopala Krishnan
6	Negeri Sembilan	Mr. Gunasegaran
7	Melaka	Mr. Ranjit Singh
8	Johor	Mr. Suresh
9	Pahang	Maj.Dr.Vikneswaran Munikanan

The zone chief judges' meeting was held in early March 2012 to brainstorm the following aspects:

- Discuss the methods and training materials required for the training of Zone Level / State Level judges.
- Finalise criteria to select the Zone Level / State Level judges.
- Prepare training materials such as presentation slides, worksheets, hand-outs and depiction.
- Conduct workshop session 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 training in every zone was suggested to be conducted by the zone chief judges. However, since many of the chief judges were new, trainers from the Working Group Committee were needed to conduct the training. Therefore, the judges' training was conducted by Dr. Subramaniam and Mr.Vijendren Krishnan in all the zones. The details of the judges training are as follows:

Table 9.2: Zone Level Judges Training

Zone	Date	Venue	Trainer
Kedah and Perlis	18 May 2012	SJK (T) Saraswathy	Mr.Vijendren Krishnan
Pulau Penang	5 May 2012	Lecture Hall 3, USM	Mr.Vijendren Krishnan & Mr. Sathiakumaran Krishnan
Perak	20 May 2012	YMCA Hall	Mr.Vijendren Krishnan & Mr. Sathiakumaran Krishnan
Selangor	19 May 2012	Era Consumer Office	Mr.Vijendren Krishnan
Wilayah Persekutuan	15 June 2012	Dewan Tuanku Cansellor, University Malaya	Dr.Subramaniam Gurusamy
Negeri Sembilan	12 May 2012	SJK (T) Lobak	Mr.Vijendren Krishnan
Melaka	17 May 2012	MIC Office	Dr.Subramaniam Gurusamy
Johor	3 June 2012	UTHM	Dr.Subramaniam Gurusamy

9.3 NATIONAL SCIENCE FAIR FOR YOUNG CHILDREN

9.3.1 Student's Conference Paper

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

The top 3 teams of the Zone Level Science Fair were eligible to participate in the Conference Paper Presentation. The selected teams were asked to submit 3 pages of paper and 15 presentation slides of their experiment. One member of the team presented the slide during the Conference Paper Presentation and all the other members were involved in a question and answer session by the judges. These presentations were held on the 2nd day which is 4 August 2012 from 8.00pm to 11.00pm. The presentation was held in 4 parallel sessions in four 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 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 future.

The guidelines for the Conference Paper Presentation are as follows:

- 3 conference papers from the 1st, 2nd and 3rd prize winners of each zone were submitted to the Conference Paper judges. All the teams presented their conference paper for NSFYC 2012.
- The Conference Paper was written based on the experiments conducted by the teams for the National Level Competition.
- 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 (only 15 slides are 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 log book and report book. As planned, the judges arrived at 6.00 pm and Dr.Subramaniam Gurusamy had a small briefing section for log book and report book markings. The files were distributed to the judges based on the school groupings who assessed and submitted the markings to the chief judge.

2nd day of the event

Dr.Subramaniam Gurusamy introduced the "hands-on" experiment section for the National Science Fair 2012. All the students were requested to handle the "hands-on" experiments with the instructions and report the experimental result in 1 hour and 30 minutes.

The chief judge briefed all the other 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. The estimated time for judging was 20 minutes per school; 15 minutes for booth judging and 5 minutes for question and answer session. The judges took an hour break after the first judging session. The judging continued for cross judging by a different judge's panel which featured different school groupings. All the judges were assessed and submitted the markings to the chief judge. A group of special judges did the final evaluation on the marking.

During the booth judging, a few group of judges marked 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 did the marking by asking simple questions to the students and observing their presentation. The judges then assessed and submitted the markings to the chief judge for the Innovation Category.

Dr. Subramaniam Gurusamy had a discussion session with the school teachers to explain about the Judging Methodology, tactic, judge's qualification and judging requirement. Dr. Subra explained the significance of judging to the teachers who took this opportunity to question about judging, judge's requirement, and students' performance.

In conclusion, after finalising the marks, all the judges were requested to participate in an application session. At the same time, Dr. Subramaniam Gurusamy had a post mortem meeting to discuss about the improvement needed in Judging Methodology, allocation of time, and documentation.

Last day of the event

A group of judges discussed, verified and finalised the total marks obtained by each booth for the day. The average marks for each criterion in Form A, Form B and Form C was averaged. The chief judge submitted the final marks and the winning team to the secretariat.

10 ACCOUNT STATEMENT OF SFYC 2012

Income Statement for the period ended 30 September, 2012

Date From : 01-Sep-11
Date To : 30-Sep-12

	Year to Date	%
Sales		
Income - Science Fair	726,491.31	100.00
	726,491.31	100.00
Gross Profit/(Loss)	726,491.31	100.00
Less: Expenses		
Accommodation	1,961.00	0.27
Accounting Fee	3,250.00	0.45
Audit Fee	1,200.00	0.17
Bank Charges	138.50	0.02
Books	941.31	0.13
Drinks & Refreshment	12,955.30	1.78
Design Fee	7,870.00	1.08
EPF Contribution	6,307.92	0.87
Electricity Charges	1,922.80	0.26
Event Setup	4,098.00	0.56
Insurance	2,034.00	0.28
Intenet Charges	2,277.40	0.31
Medical Fee	567.90	0.08
Office Rental	14,625.00	2.01
Office Salaries	87,722.00	12.07
Office Cleaning	2,353.75	0.32
Printing & Stationery	96,131.40	13.23
Proof Reading	1,680.00	0.23
Parkig & Tol Charges	1,417.40	0.20
Photography	6,800.00	0.94
R&D Claims	4,913.20	0.68
Socso Contribution	887.30	0.12
Transport Charges	28,097.20	3.87
Telephone & Fax Charges	5,721.35	0.79

Income Statement for the period ended 30 September, 2012

Date From : 01-Sep-11 Date To : 30-Sep-12		**Year to Date**	**%**
Upkeep Of Website	295.00		0.04
Upkeep Of Office Equipment	1,256.50		0.17
Upkeep Of Mascot	250.00		0.03
Postage and Courier	3,223.43		0.44
Stamping fees	336.00		0.05
Service Tax	90.00		0.01
Zone Allocation - Johore	43,300.00		5.96
Zone Allocation - Kedah	31,345.00		4.31
Zone Allocation - Malacca	9,660.00		1.33
Zone Allocation - Negeri Sembilan	24,350.00		3.35
Zone Allocation - Pahang	3,824.00		0.53
Zone Allocation - Penang	13,225.00		1.82
Zone Allocation - Perak	41,317.50		5.69
Zone Allocation - Wilayah & Selangor	40,237.50		5.54
Translation Fee	2,085.75		0.29
Prizes	14,996.10		2.06
Water Charges	431.70		0.06
Hall Rental	2,550.00		0.35
Penalty	458.00		0.06
Advisory Fee	2,100.00		0.29
		531,204.21	73.12
Net Profit/(Loss)		195,287.10	26.88

Balance Sheet as at 30 September, 2012

	Cost	Depreciation	Amount
Fixed Assets			
Computer & Software	8,942.15	1,452.66	7,489.49
Furniture & Fittings	93.50	37.40	56.10
Office Equipment	22,305.35	1,367.74	20,937.61
Mascot	10,000.00	1,000.00	9,000.00
	41,341.00	**3,857.80**	**37,483.20**
Current Assets			
Other Debtors		26,118.00	
Bank Balances		221,679.00	
Petty Cash-Umah		1,008.45	
Petty Cash-Vichu		7.02	
Deposit & Prepayement		9,566.20	
		258,378.67	
Current Liabilities			
Other Creditors	-107.47		
		-107.47	
Net Current Assets			258,486.14
			295,969.34
Finance By :			
Equity			
Retained Profits/(Accum. Losses)			100,682.24
Profit and Loss Account			195,287.10
			295,969.34
			295,969.34

11 RECOMMENDATIONS FOR THE FUTURE

The following recommendations were suggested during the Coordinators and Working Group Committee post-mortem for the future improvement of SFYC.

11.1 Working Group Committee (WGC)

- All the important suggestions or decisions must be raised at the WGC meeting to get an approval before it is being implemented even though the matter had been communicated with the Founder/Project Advisors/Project Director.
- All the WGC members should make decisions for the goodness of the Science Fair for Young Children project as this involved public funds.
- Set limitations for each WGC member's involvement in other departments.
- The WGC Agreement should be signed by all the members at the first meeting.
- The WGC members should not involve in event committee departments during the NSFYC.
- The WGC has the authority to terminate any members in case of misconduct or misbehavior.

11.2 Partner Organisations

- New potential funders and sponsors should be identified in order to enhance continuous funding and sustainability of the Science Fair for Young Children.
- All partner organisations should be able to raise or contribute funds (minimum of RM5, 000) for the success of the project in their respective zones.
- Publicity from this event should be made equally for all the partners.
- The partner organisations should promote the value and importance of SFYC to the Tamil community and participant empowerment (children) and not just the winning objective.

11.3 School Level Science Fair (SLSF)

- Encourage more schools (400 schools) to organise the School Level Science Fair as this has to be the new core agenda of the SFYC.
- The zone coordinators should put their full efforts in achieving their proposed target for SLSF.
- The time duration for the SLSF has to be increased from February to October since schools are requesting to conduct the fair after UPSR examinations.
- The School Level Science Fair launching shall be in the month of October.
- The School Level Training for teachers will be conducted in December.
- All schools to be given a seed fund instead of prizes for the participants. All funds to be dispersed after the submission of the final report by the schools.

11.4 Zone Level Science Fair

- Coordinators and partners have to be fully responsible and accountable for the zone SFYC interim progress report, final report and financial report.
- Coordinators should submit the final report and financial report within 1 month after the Zone Level Science Fair event.
- Coordinator's allowance should be paid after the receivable of final report and financial report.
- Coordinators should avoid receiving funding once the account has been closed and sent to the central committee for approval.
- All the surplus funds which were raised this year must be stated in the financial report and must be carried forward to next year's accounts.
- All the coordinators are compulsory to attend the coordinator's post-mortem and co-ordinator's meeting.
- Cash prizes should be minimized at the Zone Level and too many categories of prizes should be avoided.
- Coordinators are obligated to follow the set of rules from Working Group Committee.
- Encourage the schools to participate in the SFYC even if they think their experiment is not up to the standard that they intended to achieve.

11.5 Training

- Professional trainers or local trainers should be assigned to conduct School Level and Zone Level trainings.
- The training dates must be fixed during the coordinators meeting to avoid last minute changes.
- Conduct more training sessions for larger zones such as Perak, KL and Selangor.
- The training session should be conducted in the morning to avoid poor attendance and poor response from teachers during the training.
- The training method should be restructured to make it more effective and beneficial for the teachers and students.
- The training session should be video recorded and given to all the schools during the training and uploaded in You Tube.
- Encourage the teachers to bring laptops during the training so that they can access and use the VCD given.(At least 5 laptops in each training)
- The central training team is encouraged to train the local trainers who are selected by the zone coordinators. The local trainers will conduct hands-on training for the teachers.
- The experiments preparation should be done as a workshop session before the month of December.
- Encourage to conduct students training in all the zones.
- During the teachers training, the Headmasters/Headmistress also should be invited for the briefing session about SFYC.

11.6 Public Relation

- Publicity in newspapers should be frequent and the Working Group Committee shall get extra funds for that purpose.
- Collaborate with Vanakam Malaysia in an effort to promote the Science Fair.

11.7 Judging

- Judges will undergo more training sessions.
- Judges will mark log book and report book for at least 2 days because judges have to mark so many books in a limited time.
- All the chief judges in each zone should arrange, train and prepare judges for the National level.
- All the criterion that is implemented in the National Level MUST be implemented at Zone Level first or all the zones should not implement it. This is because, some zones may be aware and experience the new criteria while other zones might not be prepared which could generate problems within the organising zones.
- Judging advisors should not be involved in Zone Level judging. If they are involved, then they must participate in all the zones.
- Must prepare extra souvenirs, tags and certificates for the judges because the number of judges could not be confirmed in such short time period.

11.8 National Level Science Fair

- Protocol training for all the Working Group Members.
- Include Protocol Department for the NSFYC event.
- Event committee could be outsourced or the project director to take the full responsibility.

11.9 Research & Development Department

- Teachers prefer "Hands on Experiments" during teachers training.
- Video and the photos of the best schools NSFYC need to show during Teachers Training.
- Training for the students on experiments.
- R&D Workshops to develop the experiments with all WGC, Judges and retired science teachers.
- R&D workshop to develop our survey reports.

12 CONCLUSION

In general the Science Fair for Young Children (SFYC) 2012, was a successful event to our young scientists. The resource material for the SFYC was improved to be more beneficial for all the students and the teachers who were involve in this event. The event was even successful as the SFYC team reached the target for SLSF which is 365 schools whereas the target was only 325 schools. More schools are expected to take part in the SLSF since it can reach more than what is expected. The teachers got tremendous improvement in classroom teaching especially in teaching science subjects.

At Zone Level SFYC, 269 schools participated where 60 schools were selected to take part in the National Science Fair for Young Children (NSFYC) 2012 which was held on 3rd to 5th August 2012 at the German Malaysian Institute, Bangi, Selangor. This year the judging team introduced hands on experiments for all the participants which were very challenging. But our Tamil school students performed very well throughout the fair. The spectators during the public viewing amazed with the performance of our students. The students also perform marvelously in their Conference Paper Presentation and Viva session on the final day. According to the judges the students spoke and answered questions with confidence and without hesitation.

The Advisory Board together with the Working Group Committee (WGC) organised the National SFYC Forum for all the Tamil School Zone Coordinators, Tamil School Head Masters Council's Head and Zone Coordinators. All the organisation heads in the forum agreed to work together in SFYC 2013 closely to bring more schools for next year's event.

The success of SFYC is relying on the success of the future scientists. In the near future we hope that our nation will have more scientists who can generate new ideas and technologies to develop this nation to be recognised at international level. The SFYC can be improved more by developing this idea to secondary school level as a continuous effort. This can help the scientific skills to be developed well when they reach the university level. The SFYC team also can have training sessions for students and teachers together for a better understanding and spread the information more effectively.

The SFYC 2012 team would like to express their thanks and appreciation to all who had contributed directly or indirectly for the success of SFYC 2012.

‘ Imagination is the highest form of research.’
- Albert Einstein

APPENDIX A
SCHOOL LEVEL SCIENCE FAIR PARTICIPATION LIST

ZONE 1: KEDAH & PERLIS

No	School Name	No. of Students Participated
1	SJK(T) LADANG BADENOCH	12
2	SJK(T) BINJOL	32
3	SJK(T) LADANG BUKIT SEMBILAN	52
4	SJK(T) LADANG KUALA KETIL	46
5	SJK(T) LADANG BATU PEKAKA	217
6	SJK(T) LADANG KIM SENG	55
7	SJK(T) LADANG MALAKOFF	16
8	SJK(T) LADANG PELAM	73
9	SJK(T) GANESAR	103
10	SJK(T) LADANG JABI	33
11	SJK(T) BARATHY	231
12	SJK(T) THIRUVALLUVAR	63
13	SJK(T) BEDONG	539
14	SJK(T) LADANG SUNGAI BATU	37
15	SJK(T) LADANG BUKIT JENUN	51
16	SJK(T) LADANG SUNGAI PUNTAR	74
17	SJK(T) SUNGAI TOK PAWANG	183
18	SJK(T) LADANG SOMME	24
19	SJK(T) SUNGAI TUKANG	139
20	SJK(T) LADANG PERBADANAN	611
21	SJK(T) TUN SAMBANTHAN	196
22	SJK(T) KALAIMAGAL	787
23	SJK(T) MAHAJOTHI	642
24	SJK(T) LADANG KUALA MUDA, BAHAGIAN HOME	49
25	SJK(T) SARASWATHY	933
26	SJK(T) SUNGAI GETAH	181
27	SJK(T) PALANISAMY KUMARAN	115
28	SJK(T) KALAIVAANI	146
29	SJK(T) CHANGLUN	69
30	SJK(T) LADANG PAYA KAMUNTING	196
31	SJK(T) DARUL AMAN	144
32	SJK(T) LADANG BUKIT SELARONG	187
33	SJK(T) LADANG HENRIETTA	287
34	SJK(T) LADANG PADANG MEIHA	143
35	SJK(T) LADANG VICTORIA	333
36	SJK(T) LADANG WELLESLEY	858
37	SJK(T) LADANG BAGAN SENA	21
38	SJK(T) LADANG BUKIT MERTAJAM	273
39	SJK(T) LADANG BUKIT SIDIM	62
40	SJK(T) KULIM	1330
41	SJK(T) LADANG SUNGAI ULAR	173
42	SJK(T) LADANG SUNGAI DINGIN	46
43	SJK(T) LADANG DUBLIN, BAHAGIAN 5	22
	TOTAL	**9784**

ZONE 2: PENANG

No	School Name	No. of Students Participated
1	SJK(T) PERMATANG TINGGI	804
2	SJK(T) BUKIT MERTAJAM	571
3	SJK(T) LADANG PRYE	190
4	SJK(T) AZAD	78
5	SJK(T) RAMAKRISHNA	335
6	SJK(T) SUBRAMANIYA BARATHEE	212
7	SJK(T) LADANG MALAKOFF	91
8	SJK(T) LADANG MAYFIELD	99
9	SJK(T) PALANIANDY	245
10	SJK(T) MAK MANDIN	1129
11	SJK(T) SUNGAI ARA	128
12	SJK(T) BATU KAWAN	131
13	SJK(T) TASEK PERMAI	329
14	SJK(T) LADANG VALDOR	206
15	SJK(T) LADANG JURU	121
16	SJK(T) NIBONG TEBAL	311
17	SJK(T) LADANG TRANSKRIAN	63
18	SJK(T) LADANG JAWI	330
19	SJK(T) LADANG BYRAM	41
20	SJK(T) PERAI	240
	TOTAL	5654

ZONE 3: PERAK

No	School Name	No. of Students Participated
1	SJK(T) LADANG JENDARATA 1	129
2	SJK(T) KHIR JOHARI	116
3	SJK(T) LADANG TONG WAH	32
4	SJK(T) BAGAN SERAI	330
5	SJK(T) LADANG CHANGKAT SALAK	59
6	SJK(T) LADANG KOTA LIMA	26
7	SJK(T) AYER TAWAR	33
8	SJK(T) LADANG SERAPOH	31
9	SJK(T) LADANG ELPHIL	47
10	SJK(T) LADANG BIDOR TAHAN	45
11	SJK(T) GERIK	37
12	SJK(T) TROLAK	41
13	SJK(T) MENGLEMBU	370
14	SJK(T) KERAJAAN	634
15	SJK(T) LADANG GLENEALY	42
16	SJK(T) PENGKALAN BARU	144
17	SJK(T) LADANG SUNGKAI	50
18	SJK(T) LADANG BIKAM	15
19	SJK(T) SELAMA	284
20	SJK(T) KAMPAR	244
21	SJK(T) LADANG BEHRANG RIVER	22
22	SJK(T) LADANG CHERSONESE	14
23	SJK(T) MAMBANG DIAWAN	140
24	SJK(T) METHODIST	247
25	SJK(T) KLEBANG	513
26	SJK(T) MAHATMA GANDHI KALASALAI	953
27	SJK(T) TRONOH	89
28	SJK(T) KAMUNTING	202
29	SJK(T) LADANG SUNGAI WANGI II	149
30	SJK(T) LADANG DOVENBY	108
31	SJK(T) LADANG SUNGAI BIONG	8
32	SJK(T) LADANG NEW COCONUT	29
33	SJK(T) LADANG KATOYANG	31
34	SJK(T) SAINT MARY'S	376
35	SJK(T) LADANG KELAPA BALI	35
36	SJK(T) KAMPONG TUN SAMBANTHAN	99
37	SJK(T) LADANG RUBANA 1	17
38	SJK(T) LADANG KATI	51
39	SJK(T) GOPENG	256
40	SJK(T) LADANG BULUH AKAR	25
41	SJK(T) KAMPUNG COLUMBIA	105
42	SJK(T) LADANG SUSSEX	166
43	SJK(T) LADANG KOTA BAHROE	33
44	SJK(T) LADANG TEMERLOH	27
45	SJK(T) LADANG SIN WAH	223
46	SJK(T) LADANG MATANG	27
47	SJK(T) MAHA GANESA VIDDYASALAI	469

48	SJK(T) LADANG STOUGHTON	30
49	SJK(T) SIMPANG LIMA	91
50	SJK(T) PONDOK TANJUNG	32
51	SJK(T) TANJUNG RAMBUTAN	516
52	SJK(T) GANDHI MEMORIAL	207
53	SJK(T) TAN SRI DATO MANICKAVASAGAM	308
54	SJK(T) YMHA	265
55	SJK(T) LADANG LAUDERDALE	64
56	SJK(T) THIRUVALLUVAR	273
57	SJK(T) TUN SAMBANTHAN, SUNGAI SIPUT(U)	136
58	SJK(T) TAPAH	307
59	SJK(T) BHARATHY	23
60	SJK(T) SLIM VILLAGE	48
61	SJK(T) LADANG SUNGAI REYLA	34
62	SJK(T) ENGGOR	28
63	SJK(T) KAMPUNG SIMEE	242
64	SJK(T) TUN SAMBANTHAN, BIDOR	297
65	SJK(T) LADANG FLEMINGTON	39
66	SJK(T) LADANG SOON LEE	103
67	SJK(T) LADANG GETAH TAIPING	83
68	SJK(T) GUNUNG RAPAT	222
69	SJK(T) LADANG BANOPDANE	62
70	SJK(T) BARATHI	438
71	SJK(T) SAINT THERESA'S CONVENT	715
72	SJK(T) ULU SEPETANG	52
73	SJK(T) LADANG KAMATCHY	50
74	SJK(T) SITHAMBARAM PILLAY	346
75	SJK(T) LADANG JIN SENG	50
76	SJK(T) ARUMUGAM PILLAI	17
77	SJK(T) TAMAN DESA PINJI	252
	TOTAL	12453

ZONE 4: SELANGOR

No	School Name	No. of Students Participated
1	SJK(T) JALAN MERU	746
2	SJK(T) BATU CAVES	1168
3	SJK(T) TAMAN MELAWATI	318
4	SJK(T) LADANG BUKIT IJOK	59
5	SJK(T) TELUK MERBAU	507
6	SJK(T) LADANG SUNGAI TERAP	53
7	SJK(T) LADANG WEST COUNTRY BARAT	75
8	SJK(T) TAMAN PERMATA	130
9	SJK(T) PERSIARAN RAJA MUDA MUSA	1220
10	SJK(T) LADANG KAMPUNG BARU	26
11	SJK(T) PULAU CAREY BARAT	94
12	SJK(T) KINRARA	515
13	SJK(T) RRI SUNGAI BULOH	452
14	SJK(T) LADANG SEMENYIH	448
15	SJK(T) LADANG RINCHING	600
16	SJK(T) LADANG CHANGKAT ASA	71
17	SJK(T) LADANG AMPAR TENANG	75
18	SJK(T) LADANG BATU AMPAT	945
19	SJK(T) BESTARI JAYA	876
20	SJK(T) DENGKIL	301
21	SJK(T) SEPANG	383
22	SJK(T) SUNGAI RENGGAM	1174
23	SJK(T) VIVEKANANDA, PETALING JAYA	1482
24	SJK(T) LADANG SELANGOR RIVER	72
25	SJK(T) METHODIST KAPAR	1306
26	SJK(T) BANDAR BARU SALAK TINGGI	255
27	SJK(T) LADANG EBOR	116
28	SJK(T) HICOM	235
29	SJK(T) TUN SAMBANTHAN	711
30	SJK(T) LADANG VALLAMBROSA	544
31	SJK(T) LADANG SUNGAI CHOH	393
32	SJK(T) LADANG KALUMPANG	141
33	SJK(T) GHANDIJI	117
34	SJK(T) CASTLEFIELD	470
35	SJK(T) LADANG SUNGAI TINGGI	58
36	SJK(T) LADANG ESCOT	49
37	SJK(T) LADANG EMERALD	461
38	SJK(T) LADANG COALFIELDS	118
39	SJK(T) LADANG GLENMARIE	117
40	SJK(T) LADANG BUKIT CHERAKA	199
41	SJK(T) SARASWATHY	735
42	SJK(T) BANGI	155
43	SJK(T) KAMPUNG PANDAN	284
44	SJK(T) VAGEESAR	673

45	SJK(T) PULAY CAREY TIMUR	42
46	SJK(T) LADANG RIVERSIDE	67
47	SJK(T) KUALA KUBU BHARU	457
48	SJK(T) JALAN TEPI SUNGAI	109
49	SJK(T) LADANG GADONG	145
50	SJK(T) BUKIT ROTAN BARU	62
51	SJK(T) TELOK PANGLIMA GARANG	701
52	SJK(T) RAWANG	1510
53	SJK(T) LADANG HIGHLAND	927
54	SJK(T) KAJANG	1221
55	SJK(T) SEAPORT	99
56	SJK(T) LADANG JUGRA	196
57	SJK(T) LADANG MIDLANDS	153
	TOTAL	24616

ZONE 5: W.P KUALA LUMPUR

No	School Name	No. of Students Participated
1	SJK(T) SEGAMBUT	416
2	SJK(T) JALAN SAN PENG	123
3	SJK(T) THAMBOOSAMY PILLAI	297
4	SJK(T) CHERAS	339
5	SJK(T) SENTUL	291
6	SJK(T) FLETCHER	385
7	SJK(T) VIVEKANANDA, KUALA LUMPUR	475
8	SJK(T) APPAR	145
9	SJK(T) SARASWATHY, KUALA LUMPUR	336
10	SJK(T) LADANG BUKIT JALIL	97
11	SJK(T) SUNGAI BESI	259
	TOTAL	3163

ZONE 6: NEGERI SEMBILAN

No	School Name	No. of Students Participated
1	SJK(T) CONVENT SEREMBAN 2	694
2	SJK(T) DESA CEMPAKA	116
3	SJK(T) LADANG BATANG BENAR	50
4	SJK(T) LADANG CAIRO	229
5	SJK(T) LADANG LABU BAHAGIAN 4	34
6	SJK(T) LADANG LENGGENG	70
7	SJK(T) LADANG SENAWANG	676
8	SJK(T) LADANG SEREMBAN	525
9	SJK(T) JALAN LOBAK	420
10	SJK(T) LORONG JAVA	1027
11	SJK(T) NILAI	626
12	SJK(T) TUN SAMBANTAN	295
13	SJK(T) RANTAU	363
14	SJK(T) PORT DICKSON	592
15	SJK(T) BANDAR SPRING HILL	335
16	SJK(T) LADANG TANAH MERAH	169
17	SJK(T) LADANG TAMPIN LINGGI	60
18	SJK(T) KEM ASKAR MELAYU	123
19	SJK(T) MUKUNDAN	144
20	SJK(T) LADANG LINSUM	125
21	SJK(T) LADANG SENGKANG	101
22	SJK(T) TAMPIN	534
23	SJK(T) KUALA PILAH	171
24	SJK(T) GEMAS	286
25	SJK(T) LADANG JERAM PADANG	43
26	SJK(T) LADANG CHEMBONG	173
27	SJK(T) LADANG BRADWALL	69
28	SJK(T) LADANG AIR HITAM	254
29	SJK(T) LADANG SAINT HELIER	315
30	SJK(T) LADANG KIRBY	54
31	SJK(T) LABU BAHAGIAN 1	83
32	SJK(T) LADANG SIALANG	110
33	SJK(T) LADANG JUASSEH	88
34	SJK(T) LADANG TANAH PANJIS/DATO PATMANABAN	182
35	SJK(T) LADANG KOMBOK	103
36	SJK(T) LADANG BAHAU	199
37	SJK(T) LADANG SAGGA	115
38	SJK(T) LADANG PERHENTIAN TINGGI	42
39	SJK(T) LADANG KUBANG	32
40	SJK(T) LADANG BATU HAMPAR	103
41	SJK(T) AIR KUNING SELATAN	152
42	SJK(T) LADANG SUNGALA	29
43	SJK(TAMIL/TELUGU) LADANG GEDDES	96
44	SJK(T) LADANG PERTANG	88
45	SJK(T) LADANG MIDDLETON	35
46	SJK(T) LADANG SUNGAI KELAMAH	22
	TOTAL	10152

ZONE 7: MELAKA

No	School Name	No. of Students Participated
1	SJK(T) LADANG GADEK	25
2	SJK(T) KEMUNING (H/D)	59
3	SJK(T) MELAKA (KUBU)	527
4	SJK(T) BUKIT LINTANG	183
5	SJK(T) DURIAN TUNGGAL	174
6	SJK(T) LADANG DIAMOND JUBILEE	87
7	SJK(T) RUMBIA	103
8	SJK(T) LADANG BUKIT KAJANG	122
9	SJK(T) LADANG SUNGAI BARU (H/D)	83
10	SJK(T) LADANG SERKAM	50
11	SJK(T) MERLIMAU	198
12	SJK(T) JASIN	561
13	SJK(T) ALOR GAJAH	420
14	SJK(T) PEKAN TEBONG	48
15	SJK(T) PAYA RUMPUT	132
16	SJK(T) LADANG JASIN LALANG	86
17	SJK(T) LADANG BUKIT ASAHAN	104
18	SJK(T) BATANG MELAKA	94
19	SJK(T) PULAU SEBANG	144
20	SJK(T) LADANG TEBONG	64
21	SJK(T) LADANG KEMUNING KRU DIVISION	92
	TOTAL	3356

ZONE 8: JOHORE

No	School Name	No. of Students Participated
1	SJK(T) LADANG TEBRAU	194
2	SJK(T) LADANG MOUNT AUSTIN	78
3	SJK(T) PERMAS JAYA	324
4	SJK(T) LADANG SUNGAI PLENTONG	49
5	SJK(T) MASAI	1301
6	SJK(T) PASIR GUDANG	416
7	SJK(T) DESA CEMERLANG	506
8	SJK(T) LADANG ULU TIRAM	581
9	SJK(T) LADANG MADOS	47
10	SJK(T) LADANG RINI	419
11	SJK(T) GELANG PATAH	131
12	SJK(T) TAMAN TUN AMINAH	2068
13	SJK(T) JALAN YAHYA AWAL	839
14	SJK(T) JALAN TAJUL	332
15	SJK(T) LADANG REM	71
16	SJK(T) LADANG PASAK	18
17	SJK(T) LADANG PELEPAH	51
18	SJK(T) LADANG NAM HENG	17
19	SJK(T) LADANG TELUK SENGAT	23
20	SJK(T) LADANG SUNGAI PAPAN	7
21	SJK(T) JALAN PARIT IBRAHIM	65
22	SJK(T) CANTUMAN CHAAH	394
23	SJK(T) LABIS	254
24	SJK(T) LADANG VOULES	137
25	SJK(T) BANDAR SEGAMAT	214
26	SJK(T) BATU ANAM	177
27	SJK(T) BEKOK	52
28	SJK(T) LADANG SEGAMAT	20
29	SJK(T) LADANG SUNGAI MUAR	70
30	SJK(T) LADANG SUNGAI SENARUT	37
31	SJK(T) LADANG GOMALI	34
32	SJK(T) LADANG FORTROSE	42
33	SJK(T) LADANG NAGAPPA	36
34	SJK(T) LADANG TANGKAH	55
35	SJK(T) LADANG SAGIL	53
36	SJK(T) LADANG BUKIT SERAMPANG	12
37	SJK(T) LADANG TANAH MERAH	91
38	SJK(T) JALAN SIALANG, TANGKAK	297
39	SJK(T) LADANG BEKOH	51
40	SJK(T) JALAN KHALIDI & SJK(T) LADANG AIR MANIS	167
41	SJK(T) LADANG LANADRON & SJK(T) LADANG PALANIAPPA	159
42	SJK(T) LADANG NORDANAL	36
43	SJK(T) LADANG BAN HENG	11
44	SJK(T) LADANG TEMIANG RENCHONG	13
45	SJK(T) KANGKAR PULAI	775
46	SJK(T) LADANG KULAI BESAR	824
47	SJK(T) LADANG KELAN	146
48	SJK(T) LADANG KULAI OIL PALM	156

49	SJK(T) LADANG SEDENAK	20
50	SJK(T) LADANG LAYANG	40
51	SJK(T) LADANG ULU REMIS	102
52	SJK(T) LADANG TUN DR ISMAIL	22
53	SJK(T) LADANG SEMBRONG	14
54	SJK(T) JALAN BUKIT RENGAM	228
55	SJK(T) LADANG SIMPANG RENGAM	20
56	SJK(T) LADANG SOUTHERN MALAY	75
57	SJK(T) LADANG BUKIT BENUT	10
58	SJK(T) LADANG LAMBAK	84
59	SJK(T) LADANG ELAEIS	60
60	SJK(T) JALAN HAJI MANAN	956
61	SJK(T) LADANG MENGKIBOL	161
62	SJK(T) LADANG PAMOL	47
63	SJK(T) KAHANG BATU 24	44
64	SJK(T) LADANG NIYOR	4
65	SJK(T) CEP NIYOR	31
66	SJK(T) JALAN SETESYEN, PALOH	242
67	SJK(T) MERSING	17
68	SJK(T) LADANG SERI GADING	33
69	SJK(T) SERI PELANGI	135
70	SJK(T) LADANG YONG PENG	122
	TOTAL	14317

ZONE 9: PAHANG & KELANTAN

No	School Name	No. of Students Participated
1	SJK(T) LADANG LANCHANG	43
2	SJK(T) LADANG KAWANG	65
3	SJK(T) LADANG SEMANTAN	104
4	SJK(T) LADANG KARMEN	33
5	SJK(T) LADANG MENTERI	124
6	SJK(T) LADANG KEMAYAN	107
7	SJK(T) LADANG KUALA REMAN	51
8	SJK(T) BANDAR INDERA MAHKOTA	404
9	SJK(T) LADANG TELEMONG	65
10	SJK(T) LADANG TEKAL	55
11	SJK(T) LADANG EDENSOR	110
12	SJK(T) LURAH BILUT	44
13	SJK(T) JERANTUT	182
14	SJK(T) KUALA LIPIS	76
15	SJK(T) KARAK	302
16	SJK(T) LADANG MENTAKAB	120
17	SJK(T) RAUB	277
18	SJK(T) LADANG SELBORNE	40
19	SJK(T) LADANG CHEROH	69
20	SJK(T) BENTONG	261
	TOTAL	2532

APPENDIX B
ZONE LEVEL SCIENCE FAIR PARTICIPATION LIST

ZONE 1: KEDAH & PERLIS

No	School Name	Experiment Title
1	SJK(T) LADANG PERBADANAN	RAMP TO RAMP JUMP
2	SJK(T) KULIM	RUBBER BAND POWERED BOAT
3	SJK(T) LADANG VICTORIA	RUBBER BAND POWERED BOAT
4	SJK(T) LADANG BATU PEKAKA	RUBBER BAND POWERED BOAT
5	SJK(T) LADANG BUKIT SEMBILAN	RUBBER BAND POWERED BOAT
6	SJK(T) LADANG KUALA MUDA, BAHAGIAN HOME	PARTITION STABILITY
7	SJK(T) LADANG WELLESLEY	LEVER CLASSES
8	SJK(T) LADANG PELAM	SPRING SHOOT
9	SJK(T) THIRUVALLUVAR	HYDRODYNAMIC
10	SJK(T) BARATHY	VOLUME OF AIR
11	SJK(T) BINJOL	TANG LONG
12	SJK(T) SARASWATHY	TANG LONG
13	SJK(T) SUNGAI TUKANG	SHUTTLE COCK AND FLIGHT
14	SJK(T) BEDONG	SOLAR OVEN
15	SJK(T) LADANG HENRIETTA	SOLAR OVEN
16	SJK(T) SUNGAI TOK PAWANG	SOLAR OVEN
17	SJK(T) MAHAJOTHI	ENERGY IN OIL
18	SJK(T) KALAIVAANI	ENERGY IN OIL
19	SJK(T) LADANG PADANG MEIHA	ENERGY IN OIL
20	SJK(T) CHANGLUN	OSMOSIS
21	SJK(T) SUNGAI GETAH	OSMOSIS
22	SJK(T) DARUL AMAN	OSMOSIS
23	SJK(T) LADANG SUNGAI PUNTAR	YOGURT
24	SJK(T) PALANISAMY KUMARAN	YOGURT
25	SJK(T) LADANG BUKIT MERTAJAM	YOGURT
26	SJK(T) LADANG SUNGAI BATU	RUSTING
27	SJK(T) LADANG PAYA KAMUNTING	RUSTING
28	SJK(T) LADANG SUNGAI DINGIN	RUSTING
29	SJK(T) LADANG KUALA KETIL	PHOTOSYNTHESIS
30	SJK(T) TUN SAMBANTHAN	PHOTOSYNTHESIS
31	SJK(T) GANESAR	RESPIRATION
32	SJK(T) LADANG JABI	RESPIRATION
33	SJK(T) LADANG BUKIT SELARONG	RESPIRATION
34	SJK(T) LADANG SUNGAI ULAR	RESPIRATION

ZONE 2: PENANG

No	School Name	Experiment Title
1	SJK(T) LADANG TRANSKRIAN	RESPIRATION
2	SJK(T) SUBRAMANIYA BARATHEE	SOLAR OVEN
3	SJK(T) LADANG JAWI	VOLUME OF AIR
4	SJK(T) SUNGAI ARA	YOGURT
5	SJK(T) LADANG VALDOR	VOLTAIC CELL
6	SJK(T) PERMATANG TINGGI	TANG LONG
7	SJK(T) RAMAKRISHNA	ENERGY IN OIL
8	SJK(T) BUKIT MERTAJAM	VOLTAIC CELL
9	SJK(T) LADANG PRYE	YOGURT
10	SJK(T) PERAI	YOGURT
11	SJK(T) MAK MANDIN	RUBBER BAND POWERED BOAT
12	SJK(T) BATU KAWAN	LEVER CLASSES
13	SJK(T) TASEK PERMAI	SOLAR OVEN
14	SJK(T) LADANG MALAKOFF	RESPIRATION
15	SJK(T) PALANIANDY	PHOTOSYNTHESIS
16	SJK(T) AZAD	ENERGY IN OIL
17	SJK(T) LADANG JURU	LEVER CLASSES
18	SJK(T) NIBONG TEBAL	RUBBER BAND POWERED BOAT
19	SJK(T) BAYAN LEPAS	ENERGY IN OIL

ZONE 3: PERAK

No	School Name	Experiment Title
1	SJK(T) LADANG GLENEALY	RAMP TO RAMP JUMP
2	SJK(T) SELAMA	RAMP TO RAMP JUMP
3	SJK(T) LADANG BIDOR TAHAN	RUBBER BAND POWERED BOAT
4	SJK(T) GERIK	RUBBER BAND POWERED BOAT
5	SJK(T) TAPAH	RUBBER BAND POWERED BOAT
6	SJK(T) LADANG BIKAM	POWER STRIKER
7	SJK(T) KHIR JOHARI	POWER STRIKER
8	SJK(T) THIRUVALLUVAR	PARTITION STABILITY
9	SJK(T) KAMPUNG SIMEE	PARTITION STABILITY
10	SJK(T) LADANG KOTA LIMA	LEVER CLASSES
11	SJK(T) SLIM VILLAGE	SPRING SHOOT
12	SJK(T) BAGAN SERAI	SPRING SHOOT
13	SJK(T) GANDHI MEMORIAL	HYDRODYNAMIC
14	SJK(T) LADANG JENDARATA 1	HYDRODYNAMIC
15	SJK(T) SIMPANG LIMA	VOLUME OF AIR
16	SJK(T) LADANG SOON LEE	TANG LONG
17	SJK(T) TUN SAMBANTHAN, BIDOR	TANG LONG
18	SJK(T) TAN SRI DATO' MANICKAVASAGAM	TANG LONG
19	SJK(T) SAINT MARY'S	SHUTTLE COCK AND FLIGHT
20	SJK(T) KLEBANG	SHUTTLE COCK AND FLIGHT
21	SJK(T) LADANG SUNGAI BIONG	SHUTTLE COCK AND FLIGHT
22	SJK(T) LADANG SUSSEX	SHUTTLE COCK AND FLIGHT
23	SJK(T) PONDOK TANJUNG	SOLAR OVEN
24	SJK(T) LADANG GETAH TAIPING	SOLAR OVEN
25	SJK(T) LADANG RUBANA 1	SOLAR OVEN
26	SJK(T) LADANG ELPHIL	SOLAR OVEN
27	SJK(T) LADANG BEHRANG RIVER	ENERGY IN OIL
28	SJK(T) SAINT THERESA'S CONVENT	ENERGY IN OIL
29	SJK(T) LADANG SERAPOH	OSMOSIS
30	SJK(T) BHARATHY	OSMOSIS

No	School Name	Experiment Title
31	SJK(T) LADANG SIN WAH	OSMOSIS
32	SJK(T) LADANG JIN SENG	YOGURT
33	SJK(T) LADANG DOVENBY	YOGURT
34	SJK(T) GOPENG	YOGURT
35	SJK(T) LADANG CHERSONESE	YOGURT
36	SJK(T) LADANG MATANG	RUSTING
37	SJK(T) LADANG CHANGKAT SALAK	RUSTING
38	SJK(T) PENGKALAN BARU	RUSTING
39	SJK(T) KERAJAAN	PHOTOSYNTHESIS
40	SJK(T) ENGGOR	PHOTOSYNTHESIS
41	SJK(T) KAMPAR	PHOTOSYNTHESIS
42	SJK(T) METHODIST	PHOTOSYNTHESIS
43	SJK(T) YMHA	RESPIRATION
44	SJK(T) MENGLEMBU	RESPIRATION
45	SJK(T) SLIM RIVER	RESPIRATION
46	SJK(T) LADANG KATI	RESPIRATION
47	SJK(T) LADANG BANOPDANE	WIND DAMPER
48	SJK(T) CHETTIARS	WIND DAMPER
49	SJK(T) TROLAK	VOLTAIC CELL
50	SJK(T) LADANG KATOYANG	VOLTAIC CELL
51	SJK(T) LADANG TONG WAH	GRAVITATIONAL FORCE
52	SJK(T) MAHATMA GANDHI KALASALAI	GRAVITATIONAL FORCE
53	SJK(T) LADANG KELAPA BALI	GRAVITATIONAL FORCE

ZONE 4: SELANGOR

No	School Name	Experiment Title
1	SJK(T) BATU CAVES	OSMOSIS
2	SJK(T) RRI SUNGAI BULOH	RESPIRATION
3	SJK(T) LADANG COALFIELDS	RUSTING
4	SJK(T) LADANG SUNGAI CHOH	RUBBER BAND POWERED BOAT
5	SJK(T) JALAN MERU	YOGURT
6	SJK(T) LADANG VALLAMBROSA	OSMOSIS
7	SJK(T) LADANG EMERALD	SOLAR OVEN
8	SJK(T) PULAU CAREY TIMUR	RESPIRATION
9	SJK(T) TELOK PANGLIMA GARANG	PHOTOSYNTHESIS
10	SJK(T) KUALA KUBU BHARU	TANG LONG
11	SJK(T) LADANG EBOR	PHOTOSYNTHESIS
12	SJK(T) METHODIST KAPAR	OSMOSIS
13	SJK(T) SIMPANG MORIB	ENERGY IN OIL
14	SJK(T) HICOM	WIND DAMPER
15	SJK(T) SUNGAI RENGGAM	RESPIRATION
16	SJK(T) LADANG GLENMARIE	SHUTTLE COCK AND FLIGHT
17	SJK(T) KINRARA	SOLAR OVEN
18	SJK(T) CASTLEFIELD	TANG LONG
19	SJK(T) AMPANG	OSMOSIS
20	SJK(T) VIVEKANANDA, PETALING JAYA	RUSTING
21	SJK(T) TUN SAMBATHAN	GRAVITATIONAL FORCE
22	SJK(T) LADANG BUKIT IJOK	VOLTAIC CELL
23	SJK(T) LADANG KAMPUNG BARU	RAMP TO RAMP JUMP
24	SJK(T) VAGEESAR	LEVER CLASSES
25	SJK(T) LADANG SUNGAI TINGGI	PHOTOSYNTHESIS
26	SJK(T) LADANG SELANGOR RIVER	HYDRODYNAMIC
27	SJK(T) TAMAN PERMATA	OSMOSIS
28	SJK(T) DENGKIL	LEVER CLASSES
29	SJK(T) TELUK MERBAU	HYDRODYNAMIC
30	SJK(T) BANDAR BARU SALAK TINGGI	RESPIRATION
31	SJK(T) KAJANG	POWER STRIKER
32	SJK(T) LADANG WEST COUNTRY BARAT	ENERGY IN OIL
33	SJK(T) LADANG SEMENYIH	SOLAR OVEN
34	SJK(T) TAMAN MELAWATI	VOLUME OF AIR
35	SJK(T) LADANG RINCHING	YOGURT

ZONE 5: KUALA LUMPUR

No	School Name	Experiment Title
1	SJK(T) APPAR	YOGURT
2	SJK(T) FLETCHER	WIND DAMPER
3	SJK(T) JALAN SAN PENG	RAMP TO RAMP JUMP
4	SJK(T) SENTUL	LEVER CLASSES
5	SJK(T) THAMBOOSAMY PILLAI	OSMOSIS
6	SJK(T) VIVEKANANDA, KUALA LUMPUR	SHUTTLE COCK AND FLIGHT
7	SJK(T) SUNGAI BESI	YOGURT
8	SJK(T) LADANG BUKIT JALIL	RAMP TO RAMP JUMP
9	SJK(T) SEGAMBUT	SPRING SHOOT
10	SJK(T) KAMPUNG PANDAN	ENERGY IN OIL

ZONE 6: NEGERI SEMBILAN

No	School Name	Experiment Title
1	SJK(T) NILAI	SHUTTLE COCK AND FLIGHT
2	SJK(T) MUKUNDAN	LEVER CLASSES
3	SJK(T) RANTAU	SPRING SHOOT
4	SJK(T) KUALA PILAH	TANG LONG
5	SJK(T) LADANG JUASSEH	PHOTOSYNTHESIS
6	SJK(T) PORT DICKSON	TANG LONG
7	SJK(T) BANDAR SPRING HILL	ENERGY IN OIL
8	SJK(T) LADANG BAHAU	ENERGY IN OIL
9	SJK(T) LADANG CAIRO	RESPIRATION
10	SJK(T) LADANG SENAWANG	SOLAR OVEN
11	SJK(T) CONVENT SEREMBAN 2	RESPIRATION
12	SJK(T) LADANG TANAH MERAH	TANG LONG
13	SJK(T) LADANG SEREMBAN	RESPIRATION
14	SJK(T) LORONG JAVA	WIND DAMPER
15	SJK(T) LADANG LABU BAHAGIAN 4	RESPIRATION
16	SJK(T) JALAN LOBAK	RESPIRATION
17	SJK(T) LADANG LINSUM	ENERGY IN OIL
18	SJK(T) LADANG AIR HITAM	POWER STRIKER
19	SJK(T) LADANG LENGGENG	SOLAR OVEN
20	SJK(T) TAMPIN	RESPIRATION
21	SJK(T) LADANG CHEMBONG	RESPIRATION
22	SJK(T) LADANG KIRBY	RUBBER BAND POWERED BOAT
23	SJK(T) DESA CEMPAKA	RESPIRATION
24	SJK(T) LADANG BATANG BENAR	POWER STRIKER
25	SJK(T) TUN SAMBANTAN	WIND DAMPER
26	SJK(T) LADANG JERAM PADANG	RUSTING
27	SJK(T) LADANG SAINT HELIER	YOGURT
28	SJK(T) LADANG TANAH PANJIS/DATO K' PATMANABAN	RESPIRATION
29	SJK(T) LADANG SENGKANG	RUBBER BAND POWERED BOAT
30	SJK(T) LADANG SIALANG	YOGURT

ZONE 7: MELAKA

No	School Name	Experiment Title
1	SJK(T) LADANG GADEK	YOGURT
2	SJK(T) KEMUNING (H/D)	ENERGY IN OIL
3	SJK(T) MELAKA (KUBU)	PHOTOSYNTHESIS
4	SJK(T) BUKIT LINTANG	ENERGY IN OIL
5	SJK(T) DURIAN TUNGGAL	RUSTING
6	SJK(T) LADANG DIAMOND JUBILEE	TANG LONG
7	SJK(T) RUMBIA	TANG LONG
8	SJK(T) LADANG BUKIT KAJANG	SPRING SHOOT
9	SJK(T) LADANG SUNGAI BARU (H/D)	YOGURT
10	SJK(T) LADANG SERKAM	RUBBER BAND POWERED BOAT
11	SJK(T) MERLIMAU	RESPIRATION
12	SJK(T) JASIN	POWER STRIKER
13	SJK(T) ALOR GAJAH	RUBBER BAND POWERED BOAT
14	SJK(T) PEKAN TEBONG	OSMOSIS
15	SJK(T) PAYA RUMPUT	SOLAR OVEN
16	SJK(T) LADANG JASIN LALANG	POWER STRIKER
17	SJK(T) LADANG BUKIT ASAHAN	LEVER CLASSES
18	SJK(T) BATANG MELAKA	SOLAR OVEN
19	SJK(T) PULAU SEBANG	SHUTTLE COCK AND FLIGHT
20	SJK(T) LADANG TEBONG	RUSTING
21	SJK(T) LADANG KEMUNING KRU DIVISION	RESPIRATION

ZONE 8: JOHOR

No	School Name	Experiment Title
1	SJK(T) LADANG TANAH MERAH	RAMP TO RAMP JUMPING
2	SJK(T) LADANG KULAI OIL PALM	RAMP TO RAMP JUMPING
3	SJK(T) KANGKAR PULAI	RAMP TO RAMP JUMPING
4	SJK(T) TAMAN TUN AMINAH	RUBBER BAND POWERED BOAT
5	SJK(T) LADANG LAMBAK	RUBBER BAND POWERED BOAT
6	SJK(T) LADANG VOULES	RUBBER BAND POWERED BOAT
7	SJK(T) LADANG ELAEIS	RUBBER BAND POWERED BOAT
8	SJK(T) LADANG AIR MANIS	POWER STRIKER
9	SJK(T) JALAN HAJI MANAN	PARTITION STABILITY
10	SJK(T) LADANG RINI	LEVER CLASSES
11	SJK(T) LADANG SUNGAI MUAR	LEVER CLASSES
12	SJK(T) LADANG KELAN	LEVER CLASSES
13	SJK(T) LADANG LANADRON	LEVER CLASSES
14	SJK(T) LADANG REM	SPRING SHOOT
15	SJK(T) LADANG SEMBRONG	SPRING SHOOT
16	SJK(T) LADANG ULU REMIS	SPRING SHOOT
17	SJK(T) BANDAR SEGAMAT	HYDRODYNAMIC
18	SJK(T) LADANG MENGKIBOL	TANG LONG
19	SJK(T) LADANG NORDANAL	TANG LONG
20	SJK(T) BATU ANAM	TANG LONG
21	SJK(T) LADANG FORTROSE	SOLAR OVEN
22	SJK(T) JALAN SIALANG	SOLAR OVEN
23	SJK(T) MASAI	SOLAR OVEN
24	SJK(T) LABIS	ENERGY IN OIL
25	SJK(T) LADANG SEGAMAT	ENERGY IN OIL
26	SJK(T) PASIR GUDANG	ENERGY IN OIL
27	SJK(T) LADANG KULAI BESAR	ENERGY IN OIL
28	SJK(T) CANTUMAN CHAAH	OSMOSIS
29	SJK(T) JALAN SETESYEN PALOH	OSMOSIS
30	SJK(T) LADANG MOUNT AUSTIN	YOGURT

No	School Name	Experiment Title
31	SJK(T) MERSING	YOGURT
32	SJK(T) JALAN PARIT IBRAHIM	YOGURT
33	SJK(T) LADANG PELEPAH	YOGURT
34	SJK(T) LADANG NAGAPPA	YOGURT
35	SJK(T) GELANG PATAH	RUSTING
36	SJK(T) LADANG ULU TIRAM	RUSTING
37	SJK(T) LADANG TUN DR ISMAIL	RUSTING
38	SJK(T) JALAN KHALIDI	RUSTING
39	SJK(T) SERI PELANGI	PHOTOSYNTHESIS
40	SJK(T) LADANG TEBRAU	PHOTOSYNTHESIS
41	SJK(T) LADANG YONG PENG	RESPIRATION
42	SJK(T) CEP NIYOR	RESPIRATION
43	SJK(T) DESA CEMERLANG	RESPIRATION
44	SJK(T) LADANG GOMALI	RESPIRATION
45	SJK(T) KAHANG BATU 24	RESPIRATION
46	SJK(T) LADANG PALANIAPPA	WIND DAMPER
47	SJK(T) LADANG PAMOL	WIND DAMPER
48	SJK(T) LADANG BUKIT BENUT	VOLTAIC CELL
49	SJK(T) JALAN BUKIT RENGAM	VOLTAIC CELL
50	SJK(T) JALAN YAHYA AWAL	VOLTAIC CELL
51	SJK(T) PERMAS JAYA	VOLTAIC CELL
52	SJK(T) BEKOK	VOLTAIC CELL

ZONE 9: PAHANG & KELANTAN

No	School Name	Experiment Title
1	SJK(T) MENTAKAB	ENERGY IN OIL
2	SJK(T) LADANG MENTAKAB	RESPIRATION
3	SJK(T) LADANG KAWANG	LEVER CLASSES
4	SJK(T) LADANG SELBORNE	SOLAR OVEN
5	SJK(T) RAUB	YOGURT
6	SJK(T) LADANG CHEROH	TANG LONG
7	SJK(T) JERANTUT	POWER STRIKER
8	SJK(T) LADANG KARMEN	RESPIRATION
9	SJK(T) LADANG MENTERI	TANG LONG
10	SJK(T) LADANG TEKAL	RESPIRATION
11	SJK(T) LADANG LANCHANG	YOGURT FERMENTATION
12	SJK(T) LADANG KEMAYAN	RUBBER BAND POWERED BOAT
13	SJK(T) BENTONG	SPRING SHOOT
14	SJK(T) LADANG SEMANTAN	RESPIRATION
15	SJK(T) LADANG KUALA REMAN	WIND DAMPER

APPENDIX C
REPORT SUMMARY OF ZONE LEVEL SCIENCE FAIR

Report Summary of Zone 1 : Kedah and Perlis

Implementation Of The School Level Science Fair

School Level Science Fair Teachers Training

At the beginning of the year, letters were sent out to all 59 schools in Kedah and Perlis to inform and invite the school teachers for the School Level Science Fair training. The road show for the SLSF teacher's training was held on 29 January 2012 at the SJK (T) Saraswathy Hall with 43 out the 59 schools participating and the training was conducted by Mr. Kugeneswaran and his team members. Teachers were briefed on how to conduct the science fairs at the schools and were also provided with relevant materials.

School Level Science Fair

The 16 schools which did not attend the road show training were visited by the organising committee members to promote the SLSF booklet and CD. The schools visit yielded good results as most of the schools were very attracted to this programme and agreed to organise the SLSF in their schools.

All the interested schools were required to send their proposals before sending it to the Central Working Committee for fund approval. Souvenirs and medals were sent to all the schools that had submitted their proposals based on the funding criteria set by the Central Working Committee. A total of 42 schools out of the 59 schools form Zone 1 conducted the science fair in their schools.

Implementation Of Zone Level Science Fair

Zone Level Science Fair Teachers Training

After completing the SLSF training, the Zone Level Science Fair teachers training was conducted on 31st March 2012 at SJK (T) Saraswathy Hall. A total of 40 schools took part and some of them were making their debut.

The training was conducted by Mr. Kugeneswaran and his team members and the schools were given one week to submit their titles. Meanwhile, training for the facilitators was held on 19th April 2012 at Ruang Legar, Institut Pendidikan Guru Kampus Sultan Abdul Halim. A total of 20 facilitators attended the training which was conducted by Mr. Themudu.

Judges Training

The training for judges was held on 18th May 2012 with 22 Judges participating and it was conducted by Mr.Vijendran. All the judges were briefed on the judging process, criteria and methodology.

School Visiting

The facilitator conducted one visit and their role is to assist and guide the students with their experiments. The Zone 1 facilitators were selected from higher institutions of education. The visits were held from 27h April to 17th May.

Event Day- Zone Level Science Fair

This year, the Zone 1 SFYC was conducted on 19th May 2012. A total of 34 schools from Kedah signed up and before the day of the event a committee comprising 15 departments and 20 volunteers was formed. All the preparations for the event day were done one week earlier by each department's volunteers and the respective heads.

The Zone 1 Science Fair for Young Children 2012 was a one day event which started at 7.00am and ended at 5.00pm. The details of the event are as follows:

Venue	: SJK (T) Saraswathy Hall
Date	: 19th May 2012

The registration counter was opened at 7.00am and the event started at 8.30am with the students and teachers preparing their science fair booths till 9.30am with the judging evaluation lasting nearly 3 hours. In between the judging, there were games and quizzes held for teachers and the public. A special talk was arranged for the teachers at a separate venue by Mejar Dr. Vikneswaran Munikanan, Project Director of the National Science Fair for Young Children 2012.

Lunch was served from 12.00 noon till 1.30pm. The public viewing started at 1.00pm and at 3.00pm, the closing ceremony started and ended two hours later. All the participants of Zone 1 SFYC 2012 were given medals, certificates, souvenirs and a thumbi magazine each. The top 5 winners of the exhibition received certificates, medals and prize money of RM1000, RM700, RM300, RM200 and RM100 respectively. The Champion received a Challenge Trophy of the Science Fair for Young Children 2012.

Financial Report of Zone 1: Kedah & Perlis

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee ***(SLSF)***	15,750.00	Hall Rental	500.00
Central Committee ***(ZONE)***	9,350.00	Food	210.00
Coordinator Allowance	1,000.00	PA System	150.00
1 Malaysia Indian Student Movement	1,000.00	Facilitator Visiting	220.10
Mr. R.S. Maniam	500.00	Hall Rental	1,200.00
Chennai Curry House	300.00	Exhibition Booths	10,100.00
Pusat Tuisyen Mutiara Indah	300.00	Air Cooler Rental	800.00
DO RE ME		Tents	400.00
Viskam Engineering Sdn.Bhd	300.00	PA System	1,000.00
Restoran Nanthabaalan	150.00	Prizes	2,300.00
Sivam Restoran	150.00	Teacher Souvenir	800.00
Nasi Kandar Shukria Sdn Bhd	150.00	Student Medal	760.00
Peruvai steel & Trading Sdn Bhd	150.00	Souvenir Book	2,000.00
Dr.Partheeban		Coordinator Allowance	1,000.00
Mr.Paneer	50.00	Banner/ Bunting	290.00
	50.00	Name Tags	377.60
State Coordinator Team		Photostat & Others	64.80
Contribution	11,044.65	Printing Colour	40.00
State Coordinator Team		Lunch	1,000.00
Contribution ***(SLSF)***	191.60	Hi-Tea	600.00
		Mineral Water	142.75
		Stationeries	178.70
		Rubber Stamps	9.00
		Games & Quiz	50.00
		Postage	25.90
		Invitation Cost	34.00
		Fax	16.00
		Phone	200.00
		Others	25.80
		SLSF	
		Hall Rental	500.00
		Food	210.00
		Medal	9,956.00
		Teacher & Judge Souvenir	4,730.00
		Bags	250.00
		Envelope	4.00
		Stamps	35.40
		Phone Top Up	100.00
		Photostat	11.20
		Distribute Charges	145.00
Total	**40,436.25**	**Total**	**40,436.25**

Report Summary of Zone 2 : Pulau Pinang

Implementation Of The School Level Science Fair

School Level Science Fair Teachers Training

On the 28 January 2012, the organising team conducted a School Level Science Fair teachers training at Universiti Sains Malaysia, inviting the headmasters and science teachers of all the Tamil schools in Pulau Pinang (mainland and island). Attendees were briefed on the Science Fair and were given the guidelines for the School Level SFYC experiments. Facilitators were allocated for the schools and contact numbers were given to schools so that the teachers could get back to the organizing committee regarding the fair.

School Level Science Fair

A total of 20 schools agreed to conduct the School Level Science Fair in their schools, five of which invited the team and graduates who are also members of Youth MC. It was the first time these schools in Pulau Pinang were conducting such a competition in their schools. Teachers and students were enthusiastic about their participation in conducting this competition and all the participants were confident in conducting the experiments. The three best groups were given the 1st, 2nd and 3rd prizes and others were given consolation prizes. Winners were briefed on how to improve their presentation skills and conduct the experiments. The winners were invited to attend the workshop that was to be conducted.

Implementation Of Zone Level Science Fair

Teachers, Facilitators and Judges Training

On 11th March 2012, the organising team conducted training for teachers, facilitators and judges at University Sains Malaysia. The teachers training was conducted by Dr Mohd Yunus Mohd Yasin and his team. The teachers and facilitators were briefed on the issues regarding the Zone Level SFYC. The organising committee conducted three workshops to brief the teachers on the experiments for the Zone Level Science Fair. During this training, the list of participation for the Zone Level Fair was finalised.

Workshop

Workshop 1 - North and Mid Zone
Workshop 2 - South Zone
Workshop 3 - Island

The workshops were conducted by the organisers for the Zone Level participants. The reason for conducting the workshop was because the team could not personally visit each school to brief them about the SFYC. The 20 participating schools were divided into three groups according to the zones: North and Mid Zone, South Zone and Island. Workshops were held on specific dates in the respective zones. In this workshop, participants from the respective zones were required to conduct their experiments in front of the organizers who observed and awarded marks. Upon observing, the organisers brainstormed several ideas to improvise the participant's mistakes besides teaching them soft skills and suggesting more projects in order to prepare them for the upcoming Zone Level Science Fair.

Event Day- Zone Level Science Fair

Facilitators arrived at USM a day earlier (26th May 2012) to make the preparations for the SFYC event. Hostels and dinner was provided for them. Booth set-up and briefing on the flow of the event was done. On the 27th of May, the Zone Level Science Fair was conducted in USM. 19 schools participated and the whole event was facilitated by 50 facilitators. There were a total of 30 judges, all consisting of Masters holders and PHD holders in the field of Science.

Apart from the main event itself, there were also many other activities for the parents and attendees. Among them were:

1) Health booth - conducted by medical students where they conducted simple health monitoring such as Blood Pressure monitoring, blood sugar level monitoring, weight, height and body mass index (BMI).
2) Games- paper dancing, musical chair, water rocket, soap bubble.
3) Contests- Coloring, Sudoku and Drawing.
4) Organ donor pledge – conducted by medical representatives from the government hospitals where organ donations were pledged.

At 7.30am, all participants and teachers were welcomed by the organisers and registered. As soon as the registration was done, the participants and teachers proceeded to set up their booths. While this was going on, the judges arrived and at 9am, the first judging took place. It went on till 10.30am when the participants and teachers had their breakfast. Then, the 2nd judging took place from 11am till 12.30pm. After judging, lunch was served at 12.30pm. The judges were divided into two groups where they discussed the logbook and experiments respectively.

At 1pm, the booths were open for public viewing while the activity booths at a nearby location was a hive of participation where children and parents took part. The closing ceremony started at 3pm at the Dewan Tunku Syed Putra (DTSP). All those who attended the event were welcomed to watch the closing ceremony as the hall could accommodate 1000 people. The welcome speech was given by Edwin Anand Raj, the project director of SFYC Penang and our guest of honour was Mr. TNC Hepa. The event was launched with a video presentation at 4pm and proceeded with the prize giving for activity booth winners and the SFYC Penang winners.

Winners:

1st prize - **SJK (T) Nibong Tebal**
2nd prize - **SJK (T) Permatang Tinggi**
3rd prize - **SJK (T) Bukit Mertajam**

The event which was a success ended at 6pm and the organisers had many joyous compliments and feedback from teachers, parents, and other attendees.

Financial Report of Zone 2: Pulau Pinang

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee ***(SLSF)***	8,000.00	January to May	11,973.65
Central Committee ***(ZONE)***	5,225.00	Kalai	420.60
Coordinator Allowance	1,000.00	Cash Prizes	2,250.00
1MSB	1,500.00	Booth Setup	3,500.00
Jabatan Belia Negara	1,000.00	T Shirt	1,580.00
Penang State Government	5,335.00	Catering	7,170.00
Youth Mc	6,269.25	Coordinator Allowance	1,000.00
Enricos'	500.00	Teacher's Hotel Stay	935.00
Total	**28,829.25**	**Total**	**28,829.25**

Report Summary of Zone 3 : Perak

Implementation Of The School Level Science Fair

School Level Science Fair Teachers Training

The first task for the 2012 Science Fair began by sending out invitations to the 134 Tamil schools in Perak. The letter was to inform the schools that this year the Zone Level Science Fair would be organised by DHRRA Malaysia. Invitations were sent out to all the teachers inviting them to attend the School Level Science Fair training program. During this programme, the teachers in-charge were told how to conduct the School Level Science Fair. In Perak the training was conducted in 3 zones namely Tapah (SJKT Tapah), Ipoh (SJKT Kg Simee) and Taiping (SJK T Saint Theresa). A total of 127 teachers from 86 schools attended the training which was held on 28th and 29th January 2012. The training was conducted by a representative from the National Science Fair team. During the training programme, all the schools present were given a guide book and CD's to help them conduct the School Level Science Fair.

School Level Science Fair

The School Level Science Fair started in March and the assigned facilitator from DHRRA Malaysia visited the schools during the Science Fair. The feedback from the facilitators was very positive, as all the schools put in a lot of effort in making the School Level Science Fair a success. It was also good to see the participation not only from the headmasters and teachers but also from the parents and PIBG. It was also interesting to see the involvement of the students in the Science Fair. The most interesting part was the participation of the lower primary students. The schools were provided with certificates and medals for their students and a total of 80 schools participated in the School Level Science Fair

Implementation Of Zone Level Science Fair

Zone Level Science Fair Teachers Training

Having completed the School Level Science Fair, letters for Zone Level teachers training was sent out. The training was held on 31st March - 1st April 2012. This training was also divided into 3 zones namely Tapah (SJKT Tapah), Ipoh (SJKT Kg Simee) and Taiping (SJK T St Theresa). A total of 83 teachers from 64 schools attended the Zone Level Science Fair training. During these training, the teachers were briefed on the preparation for the Zone Level Science fair. The teachers were also briefed on the 20 partially guided experiments and they were given group work and were asked to present to ensure that the teachers understood the concept well. This training also created an avenue for the teachers to clarify all doubts. The date for the Zone Level Science Fair was also discussed and decided during the training. All the teachers who attended were presented with a certificate of appreciation.

Judges Training

On 20th May 2012, the team managed to gather all the judges who were involved in the Perak Zone Level Science Fair judging at YMCA Hall, Ipoh. A total of 40 judges turned up for the training which was conducted by Mr.Sathya, the Perak Chief Judge. The training gave an overview on the Judging Methodology that will be used for the Zone Level Science Fair. The judges were also given forms that were to be used during the judging. The training session was held from 9am to 1pm.

Facilitators and Volunteers Training

Facilitators training were held in the month of January. A total of 20 facilitators were identified to assist in the School Level and Zone Level Science Fair. The training was held to provide the facilitators with their roles during their visits to the schools.

A total of 40 volunteers were identified to assist in the Zone Level Science Fair. The training was held on 24th May 2012 at Masterskill University College, at Ipoh Campus. During the training session volunteers were briefed on the event agenda and their role for the event. The training was held from 9am to 11am.

Event Day- Zone Level Science Fair

The Perak Zone Level Science Fair 2012 was held on 26th May 2012 at the Ipoh Masterskill University College, Ipoh Campus. A total of 53 schools took part in the Zone Level Science Fair 2012. Due to the distance factor one school arrived a day earlier and they were provided with accommodation and food at the Masterskill Campus. All logbooks and report books were collected by the assigned facilitators by 6pm on 25th May 2012. All the judges arrived at 6pm for marking the logbooks and report books. All logbooks and report books were marked by 11.30pm led by the chief judge of Perak.

On the event day the registration counter was opened at 7.00am for registration and breakfast was provided for the teachers and students. All the participating schools were given an hour for booth set up. At 9.00am, the teachers and parents were directed out from the booth area as judging began at 9.30am. Parents and teachers were gathered in a hall while the judging was going on. A talk on The Importance of Energy Efficiency was arranged for parents, teachers and public and delivered by Mr.Mahesh from SWITCH Malaysia. There was a briefing session on Judging Methodology by Mejar Dr.Vikneswaran for the teachers. All the parents and the public were guided to a different waiting area during the briefing session.

After the judging session over, the booths were open for public viewing. Lunch was served and the students together with their teachers took their turns to have their meals. It was really good to see how dedicated and passionate our young scientists are towards the Science Fair.

The Perak Zone Science Fair for Young Children was launched by Yang Berbahagia Dato'S.Veerasingam who represented Yang Amat Berhormat Dato' Seri Diraja Dr.Zambry Abdul Kadir. The other guest of honour was Datuk Marimuthu Nadason, Advisor DHRRA Malaysia, Mej.Dr.Vikneswaran, Director of NSFYC, Mr Ganesan, Sungai Siput Parliament BN Coordinator, Mr.Saravanan, Yayasan Bina Upaya, Mr.Manoharan, Education Department Perak.

The closing event started with an opening speech by Zone Level Project Director, Mr.Saravanan M. Sinapan. All students and teachers were given gifts as the organizers felt that all participants deserved an appreciation. Director of NSFYC 2012 Mej. Dr.Vikneswaran explained how the Science Fair started and its objectives while Chief Judge for this year, Mr.Sathya shared the difficulties that the judges experienced as all the participants did well. He applauded all the teachers for their dedicated efforts in preparing the young scientists for the event.

Dato'S.Veerasinggam, in his speech congratulated all students and said that the selected group which will be participating at the National level should do their best. He also encouraged to having more such events as this will directly benefit the students.

Financial Report of Zone 3: Perak

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee ***(SLSF)***	28,000.00	Booth Set Up	16,288.00
Central Committee ***(ZONE)***	14,575.00	Food and Drinks	9,250.00
Coordinator Allowance	1,000.00	Cash Prizes	4,000.00
Mah Sing Foundation	20,000.00	Souvenir/ T Shirt	5,500.00
Yayasan Bina Upaya	2,000.00	Medal	2,625.00
Perak State Government	20,000.00	Printing *(Souvenir book, Certificate, Tag, Bunting, Backdrop)*	9,500.00
DHRRA Malaysia	3,315.70	Postage	212.45
		Teacher's Training	400.00
		T-shirt	777.00
		Project Officer *(RM 2212.75* x *6 MONTHS* x *50%)*	6,638.25
		Staff	4,200.00
		Transportation	500.00
		Coordinator Allowance	1,000.00
		SLSF	
		Medal	18,900.00
		Certificate	3,240.00
		Transportation	3,300.00
		Postage	114.80
		Food for Teacher's Training	510.00
		Accommodation	339.00
		Stationary	407.00
		Printing	140.00
		Communication	1,049.20
Total	**88,890.70**	**Total**	**88,890.70**

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

Implementation Of The School Level Science Fair

School Level Science Fair Teachers Training

Invitations were send out to 97 schools in Selangor and 14 schools in Kuala Lumpur. The letters were to inform the schools that this year's Zone Level Science Fair will be organised by DHRRA Malaysia. All the schools were sent invitations to send the teachers for the School Level Science Fair teachers training. The first training session was held on 4th February 2012 at Petaling Jaya Zone, Lotus Restaurant *(Function Hall)*. A total of 98 teachers from 60 schools attended the training session which was conducted by Dr.Subramaniam, the Chief Judge from the National Science Fair and his team. During the programme, the teachers were briefed on how to conduct the School Level Science Fair. The teachers were also given guide books and CDs to help them conduct the School Level Science Fair.

School Level Science Fair

The School Level Science Fair was held from March till August. A total of 70 schools participated in the event. Facilitators from DHRRA Malaysia visited the schools during the Science Fair and during the school visits, facilitators gave positive feedback. With an encouragement from the organisers and facilitators, schools made an effort to make the School Level Science Fair a successful event. During the Science Fair, teachers, parents and headmasters together make the event more joyful. Children were excited when presenting their experiments. The schools received certificates and medals.

Implementation Of Zone Level Science Fair

Zone Level Science Fair Teachers Training

Invitations for teachers training were send out to all the 114 Tamil school from Selangor and Kuala Lumpur. The training was held on 24th March 2012 at the Mentari Court in Subang Jaya. A total of 63 teachers from 44 schools attended the first training session and the second teachers training was conducted on 7th April 2012 at SJKT Vivekananda, Petaling Jaya. A total of 22 teachers from 22 schools attended the training. The training was held to provide information and guidance for the Zone Level Science Fair. During the training the teachers were also briefed on the 20 partially guided experiments. Teachers were given group work and were asked to make a presentation to ensure that they understood the concept well. After the presentation, Dr Subramaniam commented on it and advised the teachers on how to improve it. The teachers also had a chance to clarify all their doubts and the date for the Zone Level Science Fair was also discussed. All the teachers who attended the session were presented with a certificate of appreciation.

Judges Training

The Judges training for Kuala Lumpur and Selangor Zone Level Science Fair was held on 19th May 2012 at IMM Petaling Jaya, Selangor. A total of 10 judges attended the training session which was conducted by Mr.Manivannan, the Kuala Lumpur and Selangor chief judge for this year. A second judges training stint was held on 15th June 2012 led by Dr.Subramaniam, the National chief judge. Total of 48 judges attended the training session and Judging Methodology that will be used for the Zone Level Science Fair was explained to them. The judges were also briefed on the forms that will be used during the Science Fair. The training session started at 9.00am and ended at 2.00pm.

Facilitators and Volunteers Training

The facilitator training for Kuala Lumpur and Selangor was held on 7th May 2012 at the DHRRA Malaysia office. A total of 10 volunteers attended the training session which was conducted by Mr.Agilan and Ms.Sangkari from the R & D Department and DHRRA. During the training session they were briefed on 20 partially guided experiments by the R & D team and event preparation by DHRRA Malaysia.

Event Day- Zone Level Science Fair

The Kuala Lumpur and Selangor Zone Level Science Fair was held on 16th June 2012 at the Dewan Tunku Canselor, University of Malaya. A total of 45 schools participated in Zone Level Science Fair. Logbooks and report books were collected three days before the Zone Level Science Fair started. The judges training was conducted by Dr. Subramaniam on 15th June 2012 together with the logbooks and report books marking which was marked by 11.30pm and led by Dr.Subramaniam. On the event day the registration counter was opened at 7.00am for registration. Breakfast was provided for teachers, students, judges and volunteers. At the registration counter, teachers and students were given goodie bags and the booth set-up started sharp at 8.00am. The teachers and students were given an hour for booth setup. At 9.00am teachers left the booth as the judging started at 9.30am sharp as the parents and teachers gathered in Dewan Siswa Perdana. A talk on The Importance of Energy Efficiency was arranged for parents, teachers and the public and was delivered by Mr.Mahesh from SWITCH Malaysia. There was a briefing session on the Judging Methodology by Dr.Subramaniam while the parents and the public were seated in a different waiting area while the briefing session was going on.

After the judging, the booths were opened for public viewing. Lunch was served for the students and teachers who took their respective turns. The children were excited when explaining and demonstrating their experiments. The public and parents were amazed seeing our young scientists excitement in handling the experiments and also their appearance.

The Guest of Honour Dato' S.K. Devamany, Deputy Minister in the Prime Minister's Department launched the Kuala Lumpur and Selangor Zone Level Science Fair. The other Guests of Honour were Dato Indrani Thuraisinggam, Advisor DHRRA Malaysia, Mr.Saravanan M.Sinapan, Presiden DHRRA Malaysia, Mej.Dr.Vikneswaran, Director of NSFYC 2012, Dr.G.Subramaniam, the National Chief Judge, Ms. Loschana Kumar Special Assistant to the Special Officer of the Prime Minister, Professor Dr.N.S. Rajendran Nagappan, Coordinator of the Action Plan for future of the Tamil Schools, Mr.Daniel Amaldass, (PST) Penyelia Sekolah-Sekolah Tamil Selangor.

The Guests of Honour visited all the booths and the young scientists were very excited to present and demonstrate the experiments and all of them performed very well to impress the VIP's.

All the pupils who participated in the Kuala Lumpur and Selangor Zone Level Science Fair were given medals, certificates and a Thumbi (Science Magazine) each as an appreciation with the teachers also being appreciated.

Dr.Subramaniam explained the difficulties that judges faced in picking the winner adding that Dr.Subramaniam there was no favoritism in choosing the champion. At the end of his speech, he thanked all the teachers and headmasters for their efforts in preparing for the young scientist for the event.

The event ended with the closing speech by Mr.Saravanan M.Sinapan, the Project Director who thanked all the teachers, headmasters, and parents who came forward to make the Kuala Lumpur-Selangor Zone Level Science Fair 2012 a thumping success. He also took the opportunity to thank University Malaya for giving permission to stage the event in their venue, and not forgetting the funders, who contributed to the success of this event. Next Mej.Dr.Vikneswaran Director of NSFY delivered his speech. Dato' S.K. Devamany, in his speech congratulated the young scientists and also the teachers for their passion in participating in the Science Fair. He motivated the students with his inspirational talk and also encouraged the selected group which will be participating in the National event to perform their best. He added that a programme like the Science Fair can produce more scientists in the future.

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

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee ***(SLSF)***	28,000.00	Hall (UM)	14,440.00
Central Committee ***(ZONE)***	12,375.00	Booth Set Up	15,500.00
Coordinator Allowance	1,000.00	Food and Drinks	16,250.00
Timbalan Perdana Menteri	50,000.00	Cash Prizes	6,200.00
KTM Berhad	2,000.00	Souvenir	4,500.00
Indah Water	2,000.00	Medal	1,500.00
STR-EON	200.00	Printing *(Souvenir book, Certificate, Tag, Bunting, Backdrop)*	9,510.00
YB Senator Kohilan Pillai	5,000.00		
DHRRA Malaysia	10934.65		
DHRRA Malaysia (SLSF)	4,557.00	Postage	287.00
		Teacher's Training	1,420.00
		T-shirt	630.00
		Part Time Staff	4,200.00
		Transportation	315.40
		Canopy	1,099.00
		Project Officer *(RM 2212.75* x *6 MONTHS* x *50%)*	6,638.25
		Coordinator Allowance	1,000.00
		SLSF	
		Medal	23,100.00
		Certificate	3,960.00
		Transportation	3,200.00
		Postage	471.00
		Food for Teacher's Training	960.00
		Communication	886.00
Total	**116,066.65**	**Total**	**116,066.65**

Report Summary of Zone 6 : Negeri Sembilan

Implementation Of The School Level Science Fair

School Level Science Fair Teachers Training

At the beginning of the year, letters were sent out to all 61 schools in Negeri Sembilan to inform and invite the school teachers for the School Level Science Fair training. The road show for the SLSF teacher's training was held on 11 February 2012 at the SJK (T) Lobak with 42 out the 61 schools participating and the training was conducted by Mej Dr. Vikneswaran and his team members. Teachers were briefed on how to conduct the science fairs at the schools and were also provided with the relevant materials.

School Level Science Fair

All the interested schools were required to send their proposals before sending it to the Central Working Committee for fund approval. Souvenirs, medals and payment were given to all the schools that had send their proposal based on the funding criteria set by the Central Working Committee. A total of 46 schools out of the 61 schools in the zone conducted the science fair in their schools.

Implementation Of Zone Level Science Fair

Zone Level Science Fair Teachers Training

The teachers training was organised on 24th March 2012 at SJK (T) Lobak and started at 8.30am and ended at 1.30pm. A total of 34 teachers from 32 schools attended the training which was led by Mr.Vijendran and his team.

Judges Training

The judges training wasconducted for potential judges and it was held on 12 May 2012 at SJK (T) Lobak where 15 judges attended the training which was conducted by judging coordinator Mr.Vijendran.

Event Day- Zone Level Science Fair

More than 400 people, students, teachers, headmasters and parents attended the programme which was held at SJK (C) Pei Hua, Seremban. The President of the Indian Graduates Association of Negeri Sembilan, Mr. Palani officiated the closing ceremony and Dr. Mohd Yunus Mohd Yasin, the founder of SFYC delivered the opening speech. Officers from the Negeri Sembilan Education Department and officers from the district Education Department also attended the function.

Prizes were given away to all the 30 school children and the winners of the first three places received cash and trophies. Lunch was served to all those who attended the event.

The Zone Education Department gave full support to the Headmaster's Council in running the programme. Officials from the SFCY also gave their full cooperation in running the program since this was a debut attempt. The Headmasters' Council would like to thank the National Science Fair Team for giving a chance to the HM Council to conduct the Science Fair for Young Children 2012.

Financial Report of Zone 6: Negeri Sembilan

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (SLSF)	16,100.00	Fixing & Dismantle booth	6,520.00
Central Committee (ZONE)	8,250.00	Transport	300.00
Coordinator Allowance	1,000.00	Breakfast & Lunch	2,500.00
HM Council NSDK	5579.20	Photocopy	48.90
		Cash Prizes	1,200.00
		Hamper VIP	150.00
		Trophy	1,544.00
		Backdrop	150.00
		PA System	200.00
		Hall Rental	450.00
		Cleaning Hall	200.00
		Chairs Rental	140.00
		SLSF Payment	16,100.00
		Road Show *(Breakfast)*	309.50
		Banner	30.80
		Sampul Surat	18.00
		V G Ganesh	68.00
		Coordinator Allowance	1,000.00
Total	**30,929.20**	**Total**	**30,929.20**

Report Summary of Zone 7 : Melaka

Implementation Of The School Level Science Fair

School Level Science Fair Teachers Training

The School Level Science Fair briefing in Melaka was held on 26 January 2012 and conducted by Dr. Subramaniam from the National Level Science Fair Organising Committee. The training was attended by 20 Tamil Schools Teachers *(Out of 21 Tamil Schools)* with 10 headmasters also attending the briefing. The briefing was also attended by Miss S. Vasuki, the Melaka Zone Education Department Officer for Tamil Schools.

The briefing commenced at 9.20am and ended at about 12.00 noon. The response from the schools was positive.

All the 21 Tamil schools were given 55 medals and collar pins as the prizes for organising the School Level Science Fair. The prizes were given away by YBhg. Datuk R. Raghavan, MICESS Chairman and YBhg. Datuk G.Kannan, Melaka Zone MIC Liaison Secretary to the respective teachers/ headmasters.

School Level Science Fair

All the 21 schools in Melaka successfully completed the School Level Science Fair in their schools within the given time duration. With an encouragement from the organisers and facilitators, the schools made a concerted effort to make the School Level Science Fair a successful event. During the Science Fair, teachers, parents and headmasters together make the event more joyful. The students were excited when presenting their experiments.

Implementation Of Zone Level Science Fair

Zone Level Science Fair Teachers Training

The Zone Level Science Fair teachers training in Melaka was held on 23 March 2012 and was conducted by Mr. Vijendran and his team which consisted of Mr. Velan, Miss Anna Louisa and Miss Priya. They are the representatives of the National Science Fair Organising Committee. The training was attended by all the 21 Tamil school teachers in Melaka and the session was attended by Mr. S. Asogan, the Penyelia Kanan Bahasa, Jabatan Pelajaran Melaka.

The training commenced at 2.20p.m. and ended at approximately 6.00pm and response from the schools looked positive.

All 21 Tamil schools were also handed RM 50.00 as an incentive before the Zone Level Science Fair. Participation certificates which was provided by the National Science Fair Organising Committee was also given to the teachers who attended the training. The cash and participation certificates were given away by YBhg. Datuk R. Raghavan, MICESS Chairman and YBhg. Datuk G.Kannan, Melaka Zone MIC Liaison Secretary.

Judges Training

The Zone Level judges training were held on 17th May 2012 at the Melaka MIC office and was conducted by Dr.Subramaniam, the Chief Judge of the National Level Science Fair. The judges were briefed on the judging criteria, logbooks and report books marking and also the Judging Methodology. They were also introduced to the forms that will be used during the judging.

Event Day- Zone Level Science Fair

The Zone Level Science Fair 2012 was held on 24 June 2012 at Rumah Media, Melaka International Trade Centre (MITC). The programmes began with the registration of the students and teachers. At the registration, the students were given the welcome pack containing multiple goodies, both purchased and sponsored. They then proceeded for the booth set-up and each school was given an hour to decorate and place all the necessary items for the judging process.

Subsequent to that, a briefing for all students and teachers continued with breakfast at 9.15am. The judging process began at 9.30am and concurrently a briefing was held separately for all the teachers by Dr. Subramaniam.

The judging process ended at about 12.30pm and all the students and teachers were then served lunch. The public viewing was opened at 1.00pm which attracted teachers, students, parents and the general public. About 700 people attended the fair.

The closing ceremony was graced by YB Datuk Seri G.Palanivel, Minister in Prime Minister's Department and President of the Malaysian Indian Congress (MIC), who visited every booth. Dr. Yunus Yassin attended on behalf of the national SFYC.

For three consecutive years, the fair achieved 100 percent participation from all the 21 Tamil schools in Melaka. The success of the Melaka schools and Zone Level Science Fairs is mainly due to the assistance given by 21 school headmasters and teachers who are continuously motivating and encouraging the improvement and development of the SFYC. The great success would not be possible without the support and assistance from MICESS Chairman, YBhg. Datuk R.Raghavan, HM Council Chairman, Mr Aloyxius Xavier and all the Education Department Officers. The top 5 schools were picked to take part in the National Level Science Fair.

Financial Report of Zone 7: Melaka

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (SLSF)	7350.00	Medals & Trophies	6,500.00
Central Committee (ZONE)	5775.00	School Incentive	1,050.00
Coordinator Allowance	1,000.00	Training Expenses	229.00
YB Datuk Yaakub Md Amin	1,000.00	Allowance for SLSF Judge	24.00
YB Datuk Seet Har Cheow	1,000.00		
SSDC Sdn Bhd	1,000.00	Cash Prizes	1,250.00
Setu Earthworks	200.00	Rental of Venue	1,700.00
Datuk R.Raghavan	200.00	Project "Glow in the Dark"	161.20
Datuk G. Kannan	200.00	Cameraman Charges	50.00
Datuk R. Subramaniam	300.00	Allowance to Cleaners	60.00
Mr. R. Nagappan	300.00	Banner & Bunting Printing	300.00
Mr. P. Ananthan	300.00	VIP Souvenir	50.00
Mr.SK Soma	100.00	Project Director Allowance	90.00
Mr.Thanasekaran	100.00	Launching Gimmick	186.00
Mr.Pubalan	150.00	Wiring Expenses	99.00
		Petrol Allowance	110.00
		Welcome Gifts for Students	210.00
		Stamps & Postage	150.40
		Judges Training Food	50.00
		Display Boards	800.00
		Tags	80.00
		Gift for Teachers	120.00
		Hand phone Allowance	90.00
		Meeting Expenses	114.60
		Food & Beverages	2,757.55
		Printing & Stationery	666.66
		Prizes	327.00
		Facilitators Allowance	710.00
		National SFYC Expenses	292.10
		Provision for SFYC Post-Mortem	500.00
		Provision for Appreciation Dinner	1,000.00
		Coordinator Allowance	1,000.00
Total	**18,975.00**	**Total**	**20,727.51**
		Deficit	-(1,752.51)

Report Summary of Zone 8 : Johor

Implementation Of The School Level Science Fair

Headmasters/Headmistress(HMs) and Teacher's Meeting for School Level Science fair

The headmasters and teachers meeting was held on 28th January 2012, at UTHM. All the 70 Tamil schools in Johor sent their representatives to this seminar which was led Dr Subramaniam who briefed them on the procedure to conduct the Johor Zone Level SFYC 2012 scheduled for 28 January 2012.

The team had full support from the attendees to participate in the School Level SFYC 2012. The training also served as a platform for teachers, to discuss issues they had faced in the previous years and how they solved them. This was a good session, especially for teachers who were involved in the event for the first time. During the meeting, the teachers and students were briefed about the School Level Science Fair concept and they were given CDs and booklets which served as a guide.

School Level Prizes Distribution

Prizes and souvenirs were given to all headmasters and headmistress to be delivered to the School Level winners. The volunteers from UTHM sent the prizes and souvenirs to the designated schools, according to the districts.

School Level Science Fair

The Johor Zone School Level Science Fair 2012 was similar to previous year, with an addition of experiments, catered for the lower primary students. This event was targeted for students of Standard 1 to 5. Quiz questions were evaluated similar to the previous years and the experiment presentation was conducted as a Zone Level event. Schools were given deadlines to complete the School Level event by the second week of April 2012. Based on the agreed dates, the prizes and souvenirs were distributed to the respective schools. The overall feedback received for this event was good.

Implementation Of Zone Level Science Fair

Students and Teachers Training Section

On the 24th of March 2012, the Johor Zone Level Science Fair (SF) team conducted a students and teachers training session which was held at UTHM, Batu Pahat led by Dr Subramaniam and coordinated by our facilitators. Both the training sessions were conducted simultaneously, at two different halls. Also present during the training were Dr Mohd Yunus Mohd Yasin, Mr. Manoharan and Mr. Nadarajah. A total of 55 schools sent two teachers and five participating students each.

Dr Subramaniam together with Mr Ram conducted the teachers training session and explained the scientific approach to an experiment using very simple methods and explained it well. Mr. Rajan conducted the students' training session and explained to them the scientific approach to an experiment using very simple methods which the students understood well. He also used a simple parachute experiment to show how a logbook is recorded. Dr Mohd Yunus Mohd Yasin concluded the training session.

Judges Meeting

The judges meeting was held at SJKT Tun Aminah on the 9th of June 2012 and were briefed on the evaluation procedure. The session was led by Dr Subramaniam and the evaluation of the logbooks and reports that had been collected was conducted after the briefing.

Event Day- Zone Level Science Fair

The Johor Zone Level SFYC 2012 was held at Universiti Tun Hussein Onn, on the 10th of June 2012. A total of 52 schools participated in the event. Schools began setting up their booths, as early as 7.00am and then had their breakfast. The first time judging started at 9.30am, followed by the second which was held between 12pm and 2.00pm. The final judging slightly delayed the closing ceremony.

Dato' Randhir Singh, MIC CWC Member officiated at the closing ceremony. Programme director, Mr. Sathiaraj addressed his welcome speech, followed by Mr Poobalan, the Vice President of the Johor Tamil Schools Headmasters' Council, and finally the Honorable Guest; Dato'Randhir Singh delivered his speech and officiated at the closing ceremony. Just before the prize giving session, Mr. Suresh, as the chief judge, presented an overall summary of the students' performance, highlighting a few points of improvement, on the whole. The top 15 schools were awarded a hamper each, whereas the top five schools took home, a total of RM 5,000.00 worth cash prizes, RM 20,000.00 worth Focus 'A' e-learning portals and victory trophies. Five teams were awarded the most Innovative title with the event ending with a photography session.

Financial Report of Zone 8: Johor

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (SLSF)	28,000.00	Prizes& souvenirs	32,515.00
Central Committee (ZONE)	14,300.00	Booth	12,900.00
Coordinator Allowance	1,000.00	Food & Drinks	10,938.60
MyNadi	13,300.00	Halls	10,000.00
UTHM	10,000.00	T-Shirt	5,850.00
Mr.Nila Raja	7,650.00	Facilitators' Claim	1,879.60
Mr.Soros Kim	7,200.00	Phone calls	630.00
Mr.Thenarsoo	1,325.00	Photocopy, Banner, Bunting &	638.40
YB Kamalanathan	1,000.00	Poster	
YBVithya	300.00	Stationeries	108.48
Mr.Nandha	300.00	Transport	500.00
Mr.Mohan Moorthy	300.00	Token of Appreciation	4,500.00
		Coordinator Allowance	1,000.00
Total	**84,675.00**	**Total**	**81,460.08**
		Balance Carried Forward	*3,214.92*

Report Summary of Zone 9 : Pahang & Kelantan

Implementation Of The School Level Science Fair

School Level Science Fair Teachers Training

The School Level teachers training was conducted at SJK(T) Raub and SJK(T) Bandar Mentakab respectively on 4 February 2012. The training was led by Mej. Dr.Vikneswaran and his team.

The teachers training at SJK(T) Raub started half an hour late due to late arrival of a few teachers. Teachers were very interactive and asked many questions to enhance their understanding of the fair. The Teachers Training at SJK(T) Bandar Mentakab started on time and finished at 5pm. Teachers were a bit more interactive and shared their experience of participating in SLSF 2011. A total of 18 schools participated in the training.

School Level Science Fair

Overall 20 schools agreed to conduct the School Level Science Fair and to date, a total of 12 schools have completed the fair and the remaining 8 schools had requested to conduct the fair in October.

Implementation Of Zone Level Science Fair

Zone Level Science Fair Teacher's Training

The training was held on 10th March 2012 (Saturday) at SJK(T) Bandar Mentakab and 37 Tamil schools were invited to attend the training with 17 schools participating in the training. The Teacher's training was held from 9.00 am till 2.00pm. The training was attended by 24 teachers from 17 schools. The training was conducted by Mejar Dr. Vikneswaran and finished at 3.00pm. Teachers were very active throughout the training.

Facilitator's visiting

Two facilitators visited the schools for the Science Fair. The first visit was held from 12th to 28th April 2012. The facilitators gave a positive response and feedback after the first visit to the schools to the zone coordinators. The second visit was held from 17th to 22th June 2012, during the final week before the Zone Level Science Fair was held. During the second visit, the facilitators collected the schools project book and the log book.

Event Day- Zone Level Science Fair

Fifteen schools from Pahang comprising 15 teams registered and took part in the SFYC 2012 which was held at SMK Hwa Lian Hall. 30 secondary school students and 25 volunteers themselves to help facilitate during the Science Fair. The event coordinator explained the event to all the facilitators who will help out in the science fair. Every facilitator was delegated work during the event day.

The fair started on time and the participating schools were given a briefing after their registration. They started their booth preparation and decoration on time. The event day was divided into 3 parts: Part 1 (morning) - Judges Evaluation, Part 2: Public Viewing (afternoon) and Part 3: The closing ceremony. Part 1 started half an hour late after the schools requested more time for preparations.

The judges evaluation finished later than planned. Part 2 started as early as 1.00pm even though the cross judging evaluation did not finish. During the public viewing, 3 competitions were arranged for the public to take part which were science sudoku, science quiz, and science word search.

Part 3: The closing ceremony started at 3.00 pm and finished by 4.30 pm. Our chief guest was Pahang Chief Minister Special Officer Mr.Goonasekaran. After the event ended, the cleaning up of the hall was over by 6.30pm. Three teams were selected from this Science Fair to represent Pahang at the National level SFYC 2012. All the participants were given medals and certificates while all the schools were given consolation prizes.

The team also appreciates the visits from the Chinese primary school students and their parents to make this year's Science Fair even better. Based on the number of visitors and participants, the event was very successful and we had achieved our core objectives

Financial Report of Zone 9: Pahang & Kelantan

Income	Amount (RM)	Expenditure	Actual (RM)
Central Committee (SLSF)	1,844.00	Food for Training	300.00
Central Committee (ZONE)	4,125.00	Drinks for Volunteers	72.00
Coordinator Allowance	1,000.00	Hall	500.00
Pahang Government	10,000.00	Hall Air-Cond (5hours)	1,000.00
School Participating Fees	750.00	PA Technician	400.00
Donation	700.00	Phone Claims	250.00
		Chairs	530.00
		T-Shirts for Volunteers & Junior Club	1,500.00
		Food for Event Day	1,600.00
		Photostats	40.00
		Electrical Appliance	93.60
		Courier	20.00
		Renting Houses *(Schools & Judges)*	500.00
		Pamphlets	350.00
		Visiting Allowance	1,100.00
		Cash Money for Winners	1,300.00
		Tag *(Participants, Volunteers, Judges)*	300.00
		Certificate for Volunteers	150.00
		Prizes, Trophy & Mock Cheque	3,000.00
		Banners *(8x4= 2 piece, 20ft* x *8ft)*	1,000.00
		Coordinator Allowance	1,000.00
		Garbage Bags	10.00
		Printer Cartridge	80.00
		Appreciation Dinner for Volunteers	500.00
		Donation to NSFYC'12 (PERINNBAM)	2,000.00
Total	**18,419.00**	**Total**	**17,595.60**
		Balance Carried Forward	*823.40*

APPENDIX D
PARTIALLY GUIDED EXPERIMENTS FOR SFYC'12

1. Ramp to ramp bike jumping is an extreme sport that needs an accurate calculation to complete the game safely. Trigger Gumm is a "dare devil" athlete who holds a world record of completing the ramp to ramp bike jump safely with gap of nearly 100 meter. It is said that the speed of the bike and the position of the landing ramp are directly proportional. Connecting to this, come-up with an experiment to investigate the relationship between the height of the initial ramp and distance between the ramps. You may use balls and platforms to test your model.

2. In our previous year's experiment, we proved that rubber band can generate kinetic energy to move an airplane made by balsam board. This year, you are requested to design a rubber band powered boat to test the relationship between the surface area of the pedal/propeller and the speed of the boat. If the surface area of the pedal/propeller increases, than the speed of the boat also increases'. To demonstrate this experiment, you are advised to test your model boat on a narrow pool.

3. In Fun Fairs, there will be lots of games to play. As one of the games is the "Power Striker". In this game, the contestants need to hit a red button as best as they can with a hammer and their score as the ball in the opposite tube rises. The person who hits with more force gets the higher scores. Now you are assigned to, create a similar game model replacing "hitting force" by falling mass to investigate the relationship between the mass and the score.

4. Have you ever wondered why the four panel foldable partition need to be partially folded or bent? And what will be its best position to be more stable? To answer these questions, you need to develop a mini model of an eight panel partition and test its stability by different angles in between the panels. The stability of the partition inversely proportional to the angles in between the panels.

5. As we learned in school, levers are important in evolution of our tools from the Stone Age until the current Cyber Age. There are three types of levers involving load, fulcrum and effort. By selecting different class of levers, determine the advantages and disadvantages of the different levers. Investigate the relationship between the distance of effort from the fulcrum and the effort needed to lift a load.

6. We knew that springs are used in many of our tools in daily live such as in pens, pencils and clips. A part from this, it's also used in some mechanical games like pin balls. Here, you are going to design a new type of game called 'Spring Shoot'. In your game, you need to squeeze the spring to shoot the ball and determine the impact created by the ball on the opposite clay wall.

7. Water sports are unique events which required good skills and stamina. When it comes to diving, the sports person not only need to be skillful and with good stamina but also need to be hydro dynamic just before entering the pool to get maximum scores. It is said that, more narrow the body, more deeper it can travel. With this information, come-up with an experiment to relate the hydro dynamic shape of an object and the depth it can reach below the water surface. The object should be less dense than water.

8. Air is less dense than any liquid. Therefore, the air bubbles which release from the bottom of any liquid will rise to its surface. The time taken by the bubbles to reach the surface depends on the size of the bubbles. Based on this information, investigate the relationship between the volume of air in an object and the time duration for the object to reach the surface. Test your experiment with the object which is less denser then the liquid that you use.

9. Tang Long is a kind of light festival which celebrated by the Chinese community, where they light up candles inside a light weight paper bags which come in various shapes, colours and designs. At the final moment of this festival, they will release the paper bags as the bags take off to the sky with the force generated by the candle lights. The more the fire is, the faster the paper bag will rise. As an investigator, you are requested to determine the facts about the relationship between the number of candle lights and the time taken by the paper bag to float in surrounding air.

10. Playing badminton is one of the favorite sports which have highest rank among Asians. During the game, have you noticed that the shuttlecock is only usable until its feathers are damage? And do you know what makes the feather so important in this game? Well, as young scientist, you are assigned to discover the relationship between the feathers and the distance of flight by the shuttlecock with a hypothesis that the longer the feather(s), the further the flight of the shuttlecock. Always remember that the mass of the front cock of your shuttlecock must be slightly higher than the total mass of the feathers (or feather like objects) that you use on it. Your experiment's flight test range should be within 3 meters.

11. Solar ovens have been used for thousands of years. Tiberius, a Roman emperor wanted to eat cucumber all year round but cucumber would not normally grow in the winter. His cooks, however devised a way to use flat plate collectors to grow cucumber even when it got very cold outside. Using a box and simple things from around the house like aluminium foil, plastic sheets and sugar paper, design your own solar oven. Investigate the factor affect maximum temperature. (NOTE: do not use any electronic device to construct the solar oven).

12. Since many years back, oil was used as burning fuel in oil lamps. Oil is an organic substance that we use in our daily life for various functions. It is known that, various oil contain various amount of energy. Investigate the amount of energy content in at least 5 types of edible oil and explain why the energy differs in different type of oils. You may use oil lamp to study the time taken to completely burn the oil.

13. Osmosis is the movement of solvent molecules through a selectively permeable membrane into a region of higher solute concentration, aiming to equalize the solute concentration on the two sides. In animals and plants, water is used to maintain the osmotic balance in the cells. Connecting to this, come up with an experiment that shows the relationship between the concentration of solution and the condition of cells. You may use potato cubes to conduct your experiments

14. Dairy products are widely consumed in Malaysia and it can be found in almost all shops and hypermarkets. Yogurt is a fermented milk product which is a part of Indian foods since centuries. Do you know that Yogurts can also be made easily at home? Demonstrate the making of yogurt by investigating the factors which are involved in yogurt making. A few factors that are involved in yogurt preparation are temperature, type of milk and amount of stock yogurt required for fermentation.

15. We have seen that a lot of metals in our house tend to rust after being exposed to water and air. In fact, USA and India are also facing a huge economical loss of RM872 billion and RM48 billion per year respectively due to corrosion. Countries are facing corrosion problem in sectors such as infrastructure, chemicals, oil and gas production, transportation and automobiles. As a young scientist, you are required to investigate and demonstrate how corrosion can be prevented by using various methods and their advantages.

16. Plants have the ability to make food on their own, which is why they are categorized as producer. Plants produce glucose by a process called photosynthesis. Photosynthesis process is regulated by a few factors, you as a young scientist are required to investigate the important factors involved in photosynthesis process.

17. Do you know that balloons can be expanded even without blowing them? Mixing of yeast with sugar in a container will able to expand the balloon on its own via a process called respiration. Figure out an ingredient formula to expand the balloon to a maximum volume. You may also investigate the effect of temperature on the ingredient formulation in expanding the balloons.

18. One of the world's tallest mega structure, Taipei 101, holds the world's largest passive tuned mass wind damper weights 660 metric tons with a diameter of 5.5 meters, suspended from Level 92 to Level 87. It helps to ensure stability of the tower and comfort for the occupiers. This tower was successfully constructed by the developers by manipulating the centre of gravity and the force generated by a mass towards gravity. Based on this information, built a mini model to test and reveal the function(s) of such wind damper.

19. In 1800 Alessandro Volta discovered that electricity could be produced by using small sheets of copper, zinc and cloth spacers soaked in an acid solution. Following this, the voltaic cell was built using different metals to create a voltage source. Later, based on this concept, battery was built and used to supply electric energy to light up bulbs. In your experiment use various metals to study the different levels of voltage output and come-up with an example of daily life application

20. We know that earth gravitational force keeps everything on earth surface from escaping. But, have you wondered how a motorcycle stunt rider is able to move in a circular loop without falling? This happens when an object possess enough speed in a circular motion, which will able him to overcome the earth gravitational force. You, as a young scientist are required to develop a model to demonstrate this scenario. You may use wheel in a fix position to simplify your model.

APPENDIX E
RESEARCH ANDDEVELOPMENT SURVEY REPORT

Zone Level Science Fair Teachers Training

The teachers training for the Zone Level Science Fair was conducted in March and April 2012. The teachers were briefed on the Scientific Methodology, Judging Methodology and Criteria and also Experiments Titles. The teachers also participated intheworkshop and presentation during the training. The R & D Department conducted surveys during the training to gather feedback from the teachers about the training.

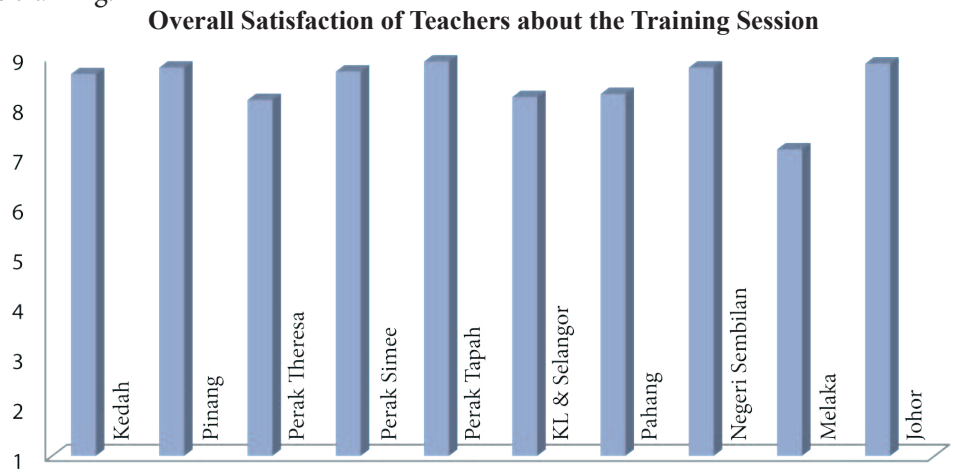


Figure E1: Overall Satisfaction of Teachers about the Training Session

Based on the evaluation carried out and the results in Figure E1, majority of the participants expressed a high level of satisfaction about the training. Suggestions from training participants indicated that they required hand-outs of the presentations and if possible hands on experiments to be conducted during the training. In addition, the teachers also suggested the training be conducted for students from every schools especially about the experiments. The teachers also requested videos of the best teams in the National level SFYC as well as photos ofthe previous year Zone Level and National level SFYC.

Zone Level Science Fair for Young Children

The Zone Level Science Fair was held in May and June 2012. A total of 269 schools participated in the Zone Level event held in9 zones. The R & D Department was tasked to conduct surveys during the fair to gather feedback from the teachers and students. The overall satisfaction of the teachersfrom each zone is shown in the figure below:

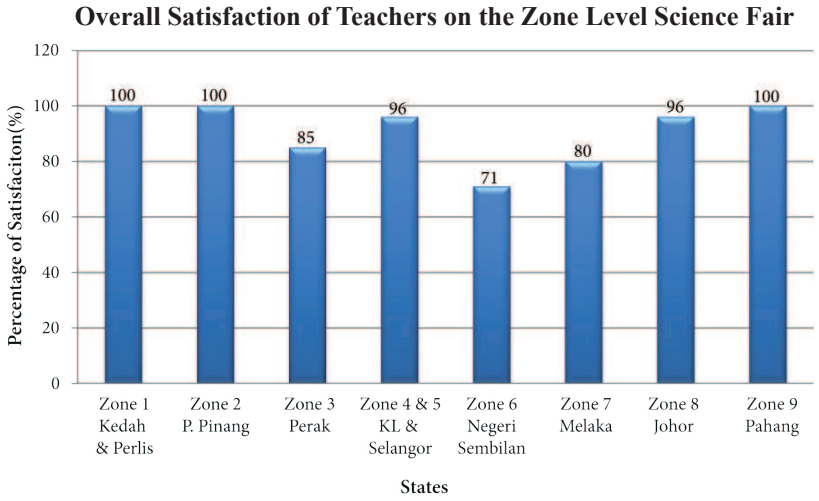


Figure E2: Overall Satisfaction of Teachers in theZone Level Science Fair 2012

ZONE 1:
According to Figure E2, 100% of the teachers rated the overall event as good.The teachers requested that theScience Fair be held earlier and provide more guidance and food items.

ZONE 2:
According to Figure E2, 100% of the teachers rated the overall event as good.Most of the teachers who were involved for the first time found that the experiments were tough but interesting as the material and information are easily available. Some teachers requested formore training for them and also the students.

ZONE 3:
According to Figure E2, nearly 85% of the teachersrated the overall event as good. Some teachers felt that the agenda neededimprovement with more attractive activities for viewers. They requested to add more activities for them. They also requested facilitators'guidance during the experiment development and requested that the fair be staged earlier so that it would not disrupt the school exams.

ZONE 4 & 5:
According to Figure E2, 96% of the teachers rated the overall event as good.Most of the teachers agreed that the venue is very good for upcoming events and the agenda was well prepared. The booth location, space and signage were satisfactory to all teachers. The teachers were happywith the food and beverages provided.

ZONE 6:
According toFigure E2, 71% of the teachersrated the overall event as good. They gave suggestions such as conducting theScience Fair twice a year and to have open titles. Another request from them was to have an evaluation report from the Judging Department for them to improve.

ZONE 7:
According to Figure E2, 80% of the teachers rated the overall event as good. Some teachers felt the agenda neededan improvement with interactive activities for teachers. Booth allocations were satisfactory but some teachers showed dissatisfaction due to congested space at a certain row andwere disappointedabout the usage of cardboards without any notice. Majority of the teachers were satisfied with the food and beverages provided butthey preferred food for all teachers who were present in the event.

ZONE 8:
According to Figure E2, 96% of the teachers rated the overall event as good.The venue was recommended by teachers for future events. Theregistration counter and agenda were satisfactory to the teachers with some of them commenting that souvenir books neededto be prepared. Some teachers commented that the questions were difficult for the primary school students and requested to improve the teacher's training before the programme.

ZONE 9:
According to Figure E2, 100% of the teachers rated the overall event as good.The agenda was average as some teachers felt that it was lengthy. The respondents commented that the overall facilitators were very friendly and helpful to teachers and the booth space was satisfactory to them.The food and beverages were rated average and the teachers expect better food in future events.

The overall satisfaction of students of each zone as shown in the figure below:

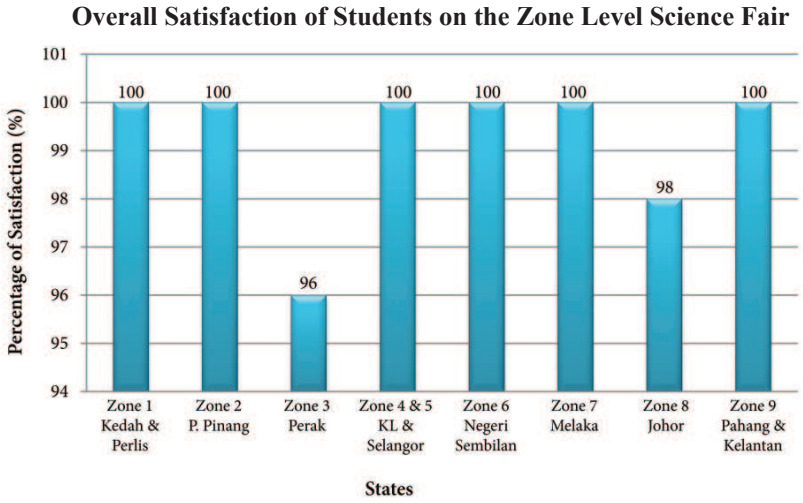


Figure E3: Overall Satisfaction of Students on Zone Level Science Fair 2012

ZONE 1: According to Figure E3, 100% of the students rated the overall event as good and they really enjoyed themselves in this event.

ZONE 2: According to Figure E3, 100% of the students rated the overall eventgood and they really enjoyed themselves in this event. There are comments to improve the booth set up for all the schools as it was quite congested.

ZONE 3: According to Figure E3, almost 96% of the students rated the overall event as good and they really enjoyed themselves in this event. They commented that the event venue was not comfortable due to the hot weather and also requested for more drinking water to be provided.

ZONE 4 & 5: According to Figure E3, 100% of the students rated the overall event as good and they really enjoyed themselves in this event.

ZONE 6: According to Figure E3, 100% of the students rated the overall event as good and they really enjoyed themselves in this event.

ZONE 7: According to Figure E3, 100% of the students rated the overall event as good and they really enjoyed themselves in this event.

ZONE 8: According to Figure E3, 98% of the students rated the overall event as good and they really enjoyed themselves in this event. The students commented that through the science fair they hadimproved a lot in their science subjects and wanted more science fairs to be conducted in a fun way for them to participate. Some of them preferred individual projects.

ZONE 9: According to Figure E3, 100% of the students rated the overall event as good and they really enjoyed themselves in this event.

National Level Science Fair for Young Children 2012

The Research and Development (R&D) Department conducted a few tasks on the event day which included surveys and experiment observations. The R&D team members carried out observation during the Experiment Presentation by the students and also the Experimental Survey. This survey was conducted on a few selected experiments based on the popularity of the experiment among the schools. At the same time, surveys involving teachers, students, judges and visitors were also conducted. The R&D Department tasks started on the 2nd day of the event until the 3rd day of the event.

After the judging process on the 2nd day of the event around 3pm,the R&D team conducted a survey for judges. The main purpose of the judges' survey was to get their opinion and feedback about experiment questions. Then R&D team observed the students experiments and this was done mainly to ensure that the experiments were conducted in line with experiment questions, students understanding level of the experiments and developing a new idea or invention in the experiment.

The survey was conducted on the 3rd day of the National Science Fair event for the students, teachers and visitors. The experimental survey was carried out from 10am until 2pm. About 7 volunteers were involved and they surveyed the students and the visitors. The teachers' survey was performed by the Head of the Department. The main purpose of this survey was to identify the satisfaction and dissatisfaction levels and the overall opinion of the teachers, students and visitors regarding the event. The survey commenced at 10am until 10.30am for teaches after the special launching in the Hall. The R&D Department targeted to survey 120 teachers -- 2 teachers from each school but they only managed to get feedback from74 teachers.

During the event, selected volunteers gathered in front of the event hall by 10.30am and they were briefedabout the survey forms by the Head of the Department andthe forms were distributed to each volunteer. A total of 60 students and 40 visitors were targeted for the survey. The students' survey was completed by 4 volunteers, each volunteer surveyed 15 schools thus completing all the participating schools. Similarly, the other 3 volunteers surveyed 27 visitorstargeting themin the hall and the event venue. The students and visitors surveys were conducted from 10.45am until 1pm. By 1pm all the forms were collected from the volunteers. Two R&D members and 2 volunteers conducted the Experimental Survey after being briefed by the Head of Department about this survey concept. This survey was developed to identify the factors that were involved in the selection process of the experiments by the schools. In conclusion, theoverall tasks pre-planned by the R&D Department were completed successfully without any problems.

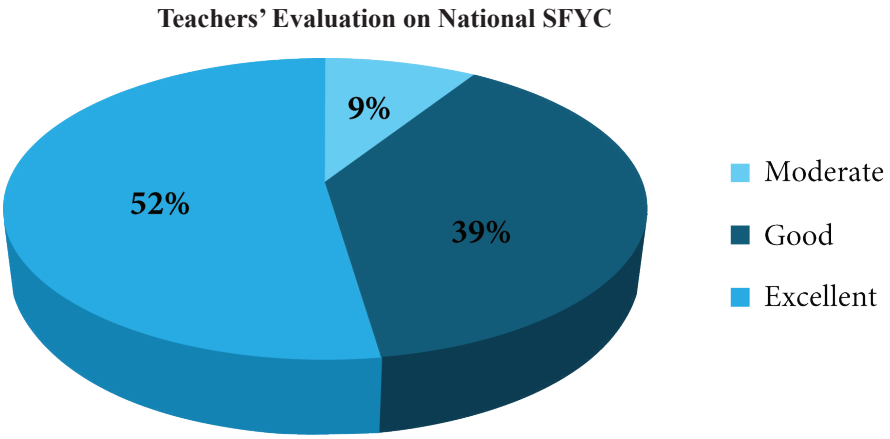


Figure E4:NSFYC 2012 Event Overall Satisfactory Level of Teachers

The survey conducted among teachers on the National Science Fair for Young Children 2012 revealed that the majority of the teachers (52%) ranked the National SFYC 2012 as an excellent event. In addition, 39 percent of the teachers ranked the event as good as there is still room for improvement. They highlighted that apartment accommodationshould be provided as it wasmore clean. It was also enlightened that teachers are being receptive of the National SFYC and hopeful that the programme will be continued with the good effort of the organisers.

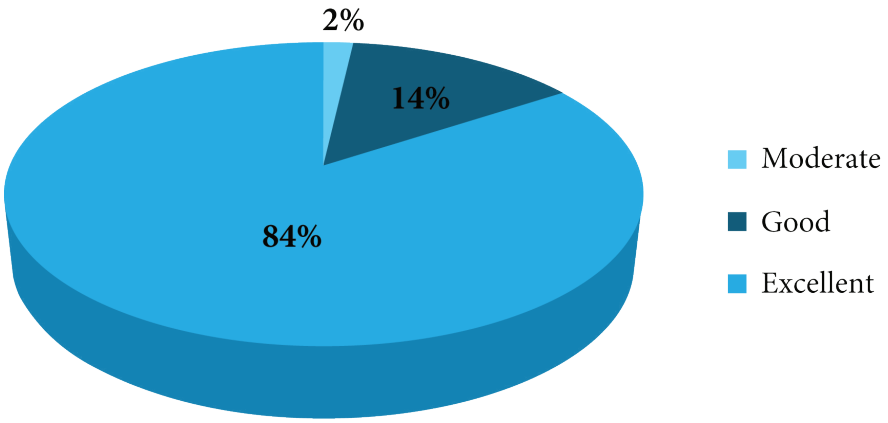


Figure E5: NSFYC 2012 Event Overall Satisfactory Level of Students

Based on the Figure E5above, 84% of the students ranked the National Science Fair for Young Children 2012 as excellentand none of the students rated the event negatively indicating that the NSFYC had benefited them. They claimed that, they had fun as well as gained knowledge byparticipating in the event. TheNSFYC event also created a great opportunity for the students to view many other experiments from other fields of sciencebesides having a chance to learn science outside their school education system.

Judges' Evaluation on the National SFYC

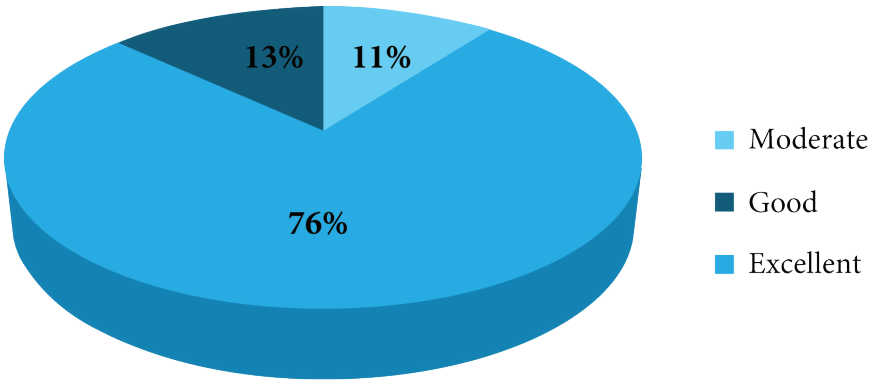


Figure E6: NSFYC 2012 Event Overall Satisfactory Level of Judges

The outcome from the survey conducted among judges in the National SFYC, shows that 13% ofthemare satisfied with the programme and ranked the event excellent in the survey. However, 76% of the judges ranked the overall National SFYC as good andthis served as an indicationthat the judges are looking forward to more improvements. The judges also suggestedimprovingthe judging criteria besides enhancing students understanding and their performance during the event.

Visitors who attended the event, prefer to have more time allocation for public viewing and also expect some facilities such as seating, food and beverages stalls to be set up.Overall, visitors were satisfied with the event.

Generally, all the teachers, parents and the public were mesmerized with the presentation by the students as well as the event that was grandly organised. However, as there is always room for improvements our survey has gathered some suggestions to further enhance and improve the event. The NSFYC can be improved further by seeking more publicity in the Mass Media and other means of publicity and promotion to create more public awarenessof this event. This can also help the public to apply science in their daily life.

APPENDIX F
SCHOOL LEVEL SCIENCE FAIR SURVEY REPORT

The evaluation and survey was conducted randomly on the chosen schools from each zone. The teacher responsible for organising the School Level Science Fair was interviewed by phone for 15 minutes. A total of 72 teachers were interviewed on the following aspects:

I. School Level Science Fair Teachers Training
II. Usefulness of information in the booklet
III. Usefulness of information in the CD
IV. Payment or Prizes given to the schools
V. How the event benefitted the students and teachers

SCHOOL LEVEL SCIENCE FAIR TEACHERS TRAINING

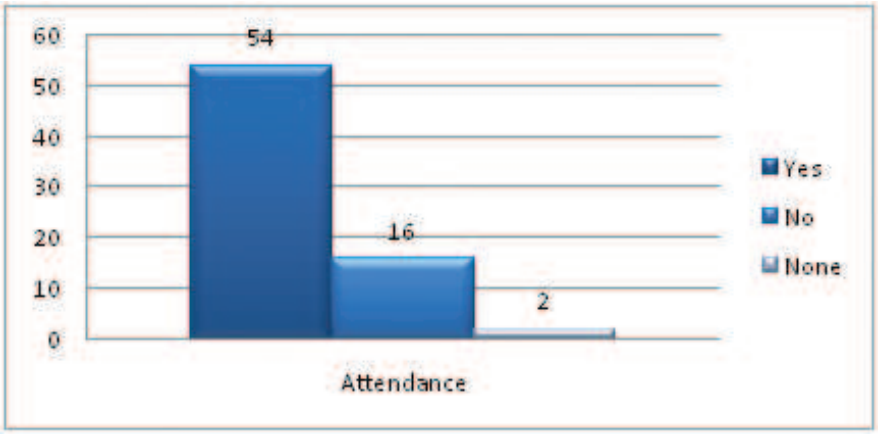


Figure F1: Attendance of Teachers for the SLSF Teachers Training

Figure F1 shows, the number of teachers who attended the training for the School Level Science Fair. About 54 out of 72 school teachers attended the training and 16 of them did not attended the training but the schools sent a representative. Two schools did not attend the training.

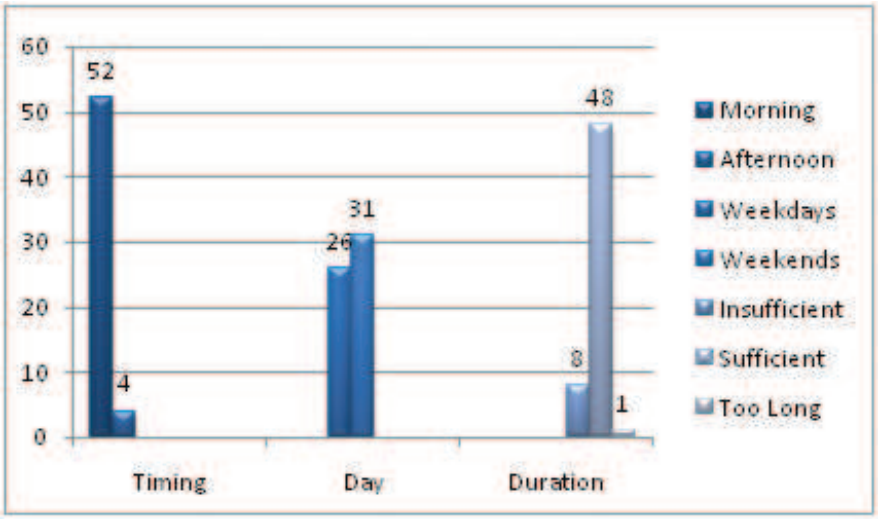


Figure F2: SLSF Training Timing, Day and Duration

Figure F2 shows the timing, day and duration preferred by the school teachers for the upcoming training session for the School Level Science Fair. Majority of school teachers were keen to attend the training during the morning session rather than the evening session. Meanwhile, about 26 teachers said that they prefer to attend the training during the weekdays and 31 teachers preferred to attend the training during weekends. 48 teachers were satisfied with the time duration allocated for the training compared to previous years and said that the duration was very sufficient. But eight teachers said that they were not satisfied with the time allocated for the training as it was too short. One teacher said that the duration of training was too long and the duration should be reduced to save time.

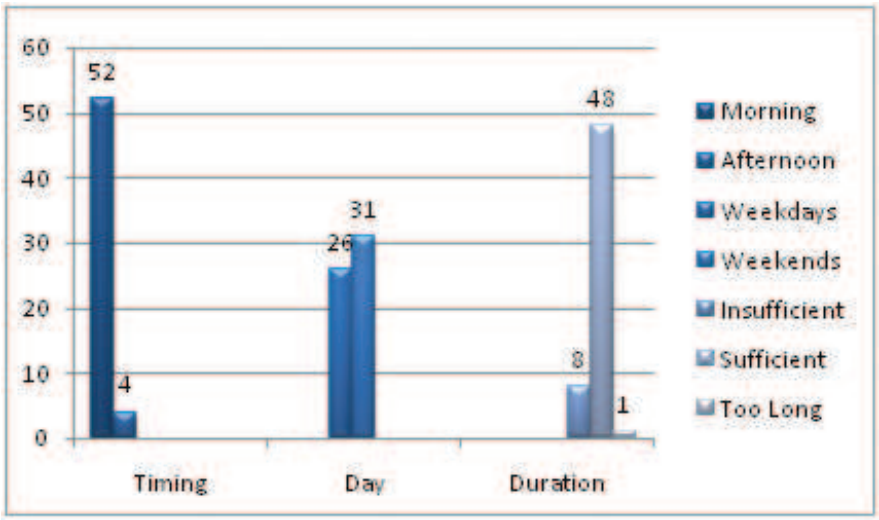


Figure F3: Information obtained during the training

Figure F3 shows the information gathered during the training for the Schools Level Science Fair Training 2012. About 50 schools teachers were satisfied with the information provided during the training and said that it was very sufficient, but two teachers were not happy because the information was insufficient. Five teachers stated that the information was more than enough.

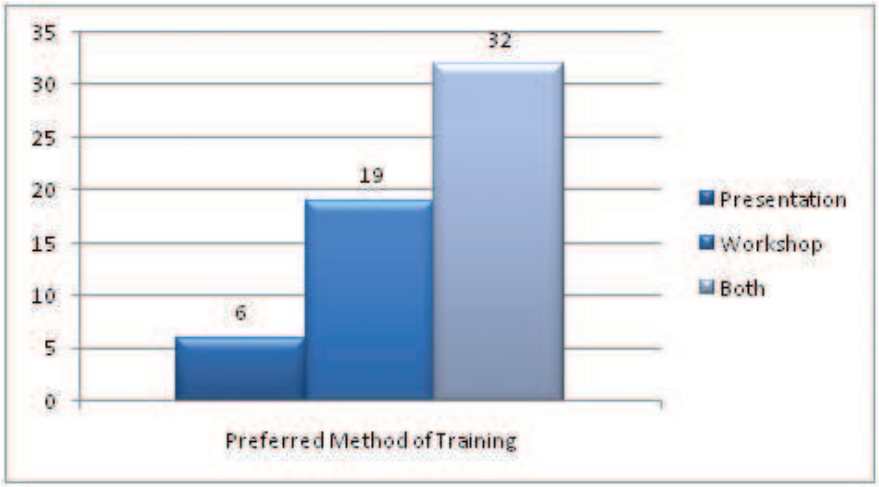


Figure F4: Preferred Method of Training

Figure F4 shows the preferred method of training by the school teachers. 32 out of the 72 teachers preferred both the presentation and workshop methods so that they could learn and get involved in some activities. Furthermore, both methods could be used as a platform by them to share ideas and information with others and be involved in some hands-on activities to enhance their skills. Meanwhile, 19 out the 72 teachers preferred the workshop method while six teachers opted for the presentation method. The teachers also requested for "hands on" experiments to be conducted during the training.

Suggestions for further improvement of SLSF Training:

- All selected topics must follow the syllabus and should be provided with full details.
- Topics should not be limited.
- Experiments should be explained in more detail during the training.
- Provide more information.
- Increase the training period/Change the training timing.

USEFULLNESS AND IMPROVEMENT FOR THE INFORMATION GIVEN IN THE CD AND THE BOOKLET

Majority of the teachers said that the information given in the CD and the booklet were very useful and sufficient to conduct the School Level Science Fair in their schools.

There were a few requests from the teachers for further improvement of the SLSF:

- They requested to use and provide experiments relevant to the syllabus for the School Level Science Fair.
- Most of the teachers were familiar with the experiments in the syllabus in the past years of the SLSF.
- They disclosed that the apparatus and materials for the experiments in the syllabus were already available in the schools.
- The teachers requested for the pictures and videos of past years SLSF.

PAYMENT/PRIZES

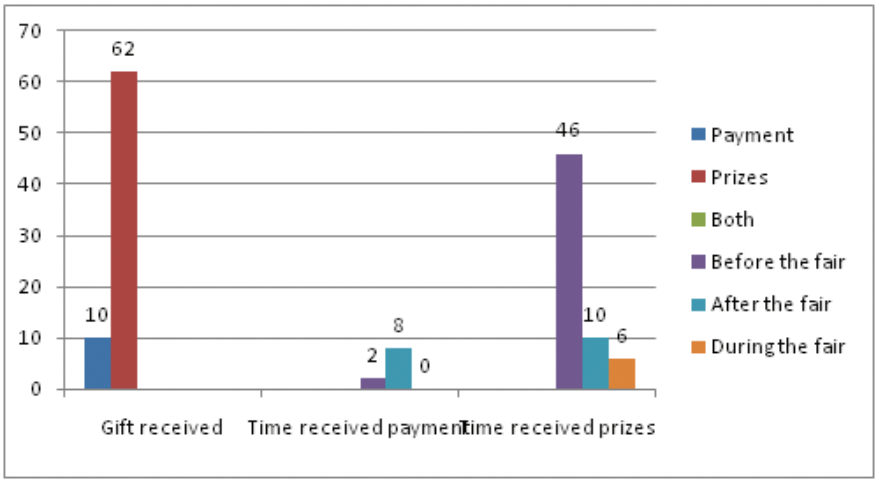


Figure F5: Type of Gifts received for the SLSF by the Schools

Figure F5 shows the type and timing of the gifts received by the schools for the School Level Science Fair 2012. Most schools received prizes such as medals and trophies for the students and judges. 62 schools received prizes and 46 of them received it before the fair whereas 10 schools received it after the fair while 6 schools receive it during the event. Meanwhile, 10 schools received an amount of money between RM250 - RM300, and 8 of them received the cash after they had conducted the School Level Science Fair.

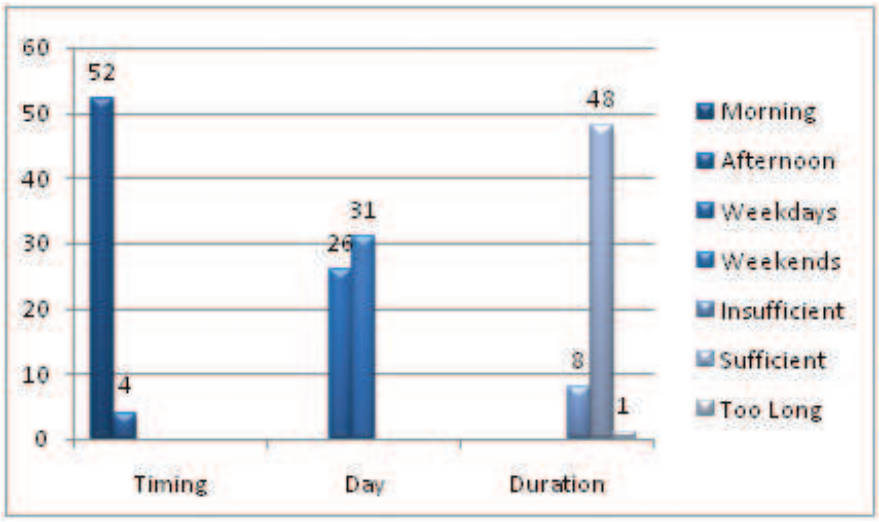


Figure F6: Preferred Payment or Prizes for SLSF

Figure F6 above shows the type of gifts preferred by the schools for the upcoming School Level Science Fair. Majority of the schools preferred to receive prizes compared to cash payment. 52 schools wanted prizes and 15 schools were keen to receive money for their schools. Only 5 schools preferred to receive both cash payment and prizes. The students were excited and happy to be presented prizes such as medals for their efforts and talent.

HOW THE EVENT BENEFITTED THE STUDENTS AND TEACHERS:

Students

- Improvement in science subjects.
- Showed interest in science subjects.
- Active involvement and cooperation among students.
- Enhancement of scientific skills.
- Gathered more information from the internet.
- Exposure to new science terms and concepts.
- Ability to solve science related problems.
- Ability to understand and explain the experiments.
- Ability to identify the hypothesis variables easily.
- Preparation of good reports.
- Enhance presentation skills.
- Create an awareness about the importance of science.
- Ability to carry out a few simple experiments without the guidance of science teachers.

Teachers:

- Good cooperation and involvement of other teachers.
- Gathering of information.
- New ways to conduct easy methods of teaching.
- Gain new experience.
- A way to understand students' talent.
- Easy to conduct experiments.

Most of the school teachers have noticed a lot of changes and improvement in the students after participating in the School Level Science Fair, particularly in their behaviour, thinking and performance in the science subjects. Many students are now very interested in science subjects and talk about science experiments. The students are now able to create and carry out some simple experiments very well without the guidance of a science teacher. A good understanding of science terms and concepts allows them to conduct an experiment and identify hypothesis, variables and so forth easily. Furthermore, the students are now can gather more information about science experiments and science related concepts via internet. The students are also able to prepare a good science report and showed good presentation skills. In addition, they are also able to answer the questions in Section B in the science exercise book and have started to think scientifically and are actively involved in the experiments.

APPENDIX G
SFYC 2012 IN PUBLIC MEDIA