



**18/19** Science Centre Board's  
**ANNUAL REPORT**



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# MESSAGE FROM THE TOP

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# CHAIRMAN'S REVIEW



Ms Tan Yen Yen  
Chairman  
Science Centre Board

## Introduction

2018 has been a fruitful year for Science Centre Board: we played to our STEM strengths by harnessing new technologies that would impact people and society, and incorporated the arts to make science relevant and approachable for the masses. These combined efforts aim to equip the future generation with a holistic set of knowledge and skills that would be highly applicable to a workforce involved in realising Singapore's dream of becoming a Smart Nation.

## Technology at the Forefront

Drone technology has been a trending topic in recent years and with that focus in mind, the Centre rolled out its Drone Odyssey initiative with several flagship events and fringe activities. These included the Drone Odyssey Challenge, a first-of-its-kind primary and secondary level drone competition, and the Asia Drone Championship, the largest and most prestigious drone racing event to-date for local and regional adult pilots.



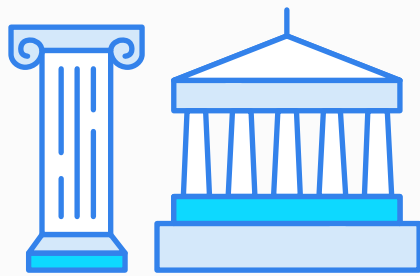
This led to forging meaningful partnerships with companies and organisations getting together to offer more drone-related events including the *PS Invaders* event held at Plaza Singapura which achieved the Largest Indoor Drone Festival certification from the Singapore Book of Records. This January, the Science Centre collaborated with the Institute of Technical Education to launch the inaugural Drone Technology for Urban Solutions Conference for industry players to share best practices.

Moving forward, the Centre will continue to nurture the local drone ecosystem through the Drone Odyssey initiative and in the process, advocate for greater awareness and interest in STEM fields.

Yet another form of technology took centre stage during the annual Singapore Science Festival (SSF) aptly themed "Hello World, A.I. You Ready?". SSF 2018 hosted a spectrum of events and activities to address the increasing interest in artificial intelligence and the vast areas it can be applied to, from industries to even simply checking bus arrival timings. SSF 2018 also clinched a Silver at the PR Awards, under the Best Use of Technology category for its innovative integrated communications campaign.

With eyes on the future, the Centre probed into the past to understand how modern technology evolved. Launched in October 2018, *The Inventions of Ancient Greece: Origins of Our Modern Technology* exhibition

brought to fore technologies invented and used by Ancient Greeks that laid the foundation for modern engineering and technology. This travelling exhibition followed successful stints in Paris and Athens and showcased inventions that spanned a multitude of disciplines from automation to programming, timekeeping, astronomy, and music.



## Meshing Arts and Science

As a frontrunner for STEM education, the Centre constantly explores creative formats and platforms to connect with the young. Through *One Kind of Science*, the first-ever children's musical conceptualised by KidsSTOP™ and Singapore Kindness Movement, young children learn the importance of kindness and are exposed to simple scientific concepts through creative drama and play. The encouraging reception by the audience proved how complex topics in science could be effectively communicated through compelling and relatable storytelling.

The same applies to the drama competitions the Centre co-organises every year – from *Abbott Grow Show You Can!* for pre-schoolers, to the *International Science Drama Competition* for primary school students from all over Southeast Asia - these events have harnessed the science knowledge and theatre background of participants, challenging their creativity as they attempt to merge the two disciplines together through their performances.

## Inspiring a Smarter Nation

Aside from new initiatives, the Centre continued to strengthen its legacy and collaborations with various partners through events such as A\*STAR Talent Search, National Robotics Competition and Sony Creative Science Award. These annual school competitions that target students and participants from various age groups encouraged them to explore, experiment and innovate. Several competitions also provided opportunities for winners to then proceed onto international platforms, where they could showcase their work and further hone their skills.



## Support and Appreciation

We could not have achieved what we have without the continuous support of partners, sponsors and the community. Through partnerships and assistance, we have been able to create engaging content and build on our existing STEM resources of exhibitions, education programmes and events to reach out and inspire all who visit and interact with the Centre.

I would like to thank the Board for their efforts and contributions over the past year, and my gratitude towards exiting members Mr Zaqy Mohamad, Mr Lim Eng Hwee, Ms Melissa Ow and the late Ms Tricia Huang. I would also like to take this opportunity to welcome our new members, Ms Yasmin Zahid, Ms Hwang Yu-Ning, Professor Ng Huck Hui and Mr Chang Chee Pey who joined us this year. Additionally, I would also like to sincerely thank the management and every Science Centre Board colleague for their unwavering dedication and for working as one united team to help realise the Board's mission.

# CHIEF EXECUTIVE'S REVIEW



Assoc Prof Lim Tit Meng  
Chief Executive  
Science Centre Board

## Introduction

Over the decades, Science Centre Singapore has established itself not only as an informal learning institution for science and STEM, but also as one of the leading voices of Science, Technology, Engineering and Mathematics. In reinforcing its branding, the Centre raised greater awareness of its mission and vision to the public, which led to more extensive co-creation with the community. The good work and our achievements have also reached foreign shores, and the Centre welcomed a number of overseas media and influencers eager to explore the Science Centre and its many offerings last year.

## Voice of Authority and Beyond

The Centre's STEM initiatives are highly regarded by both local and foreign agencies and organisations, with many expressing their interest to understand and learn more from an industry leader on how to structure and launch programmes and workshops that would advocate better STEM education. From learning journeys for foreign counterparts, to visits by delegates and interview requests from regional media, we have been able to build our reputation. This year alone, the Centre, STEM Inc and the STEM Applied Learning Programme were featured in two Japanese publications and covered by the Thai Public Broadcasting Service.

Staying relevant and attuned to the latest trends has also helped the Centre gain prominence. For example, there has been much discussion on efforts to encourage more women to pursue STEM and STEM-related careers. The Centre supported the movement by organising DiscovHER, a series of activities that featured achievements by female scientists and researchers, and which also coincided with the International Day of Women and Girls in Science.

Astronomy continues to be a popular topic both for our audiences as well as media. I am heartened to share that the Centre is seen as an authority and we witnessed a surge in public and media enquiries to help explain the phenomena or even debunk myths about certain phenomena. From television features on mainstream media (Channel 8 feature and Channel News Asia documentary) to year-end meteor showers and the February 19 super moon, the Centre has been invited on many occasions to share our knowledge and enlighten the public on the science behind these astronomical events.



Our exhibitions and initiatives have also been featured through opinion pieces attributed to the Centre and key spokespeople. From addressing the ageing population issue with our Dialogue with Time – Embrace Ageing exhibition, to healthy habits with the new health-related exhibits at KidsSTOP™ launched in partnership with the Health Promotion Board, to addressing phobias with our Phobia<sup>2</sup>: The Science of Fear exhibition, there have been many avenues and opportunities to demonstrate how science is omnipresent and thereby emphasise its importance.



## Community Co-Creation and Outreach

The Centre worked with the community on a number of events and programmes in 2018, engaging several makers to showcase their creations at Future City at the Istana Open House on Labour Day and inviting notable scientists and creators such as Dr Mike North and

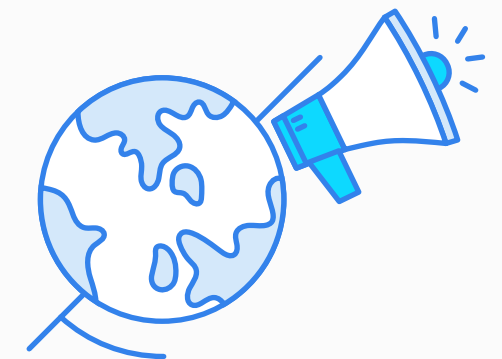
Matthew Gardiner to helm workshops and share their craft with students and wider audiences. The Centre also received requests to share simple DIY activities that families could bond over for the March school holidays, which were eventually published in The Straits Times.

Our student and senior volunteers also had a chance to shine as they were featured in a special article by Lianhe Zaobao. The story talked about the volunteer shortlisting and selection process, as well as the training these volunteers go through for both science knowledge and interaction with visitors. Having volunteers on board helps the Centre tremendously in its outreach efforts and widens our network of engaging passionate people committed and earnest in befriending and transforming the minds of millions through science and STEM.

## Attention from Overseas

In recent years, more people and organisations have come to learn about the Centre and its group of attractions. Key opinion leaders and lifestyle writers from countries such as Spain and Italy have covered the Science Centre on their digital platforms and publications. Through the Singapore Tourism Board, the Centre also facilitated visits by Taiwanese media (ETtoday) and key opinion leaders from neighbouring countries such as Malaysia and Indonesia who helped spread word about the Centre among the communities back home.

These efforts, coupled with quality experiences and engagement have propelled the Centre and its people to greater heights. The Science Centre Board and its Group of Attractions will continue to strive towards promoting interest, learning and creativity in science and technology to a wider audience and cement its world class status.



# OUR TEAM

- > **Board Members**
- > **Management Team**





# BOARD MEMBERS



Ms Tan Yen Yen



Mr Soh Gim Teik



Mr Hian Goh



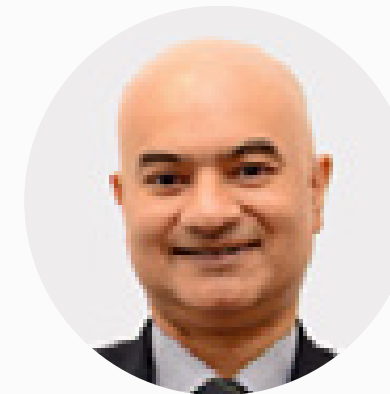
Ms Shirley Wong



Mr Bruce Poh



Ms Cherie Nursalim



Mr Chandran Nair



Mr Cheong Chee Hoo



Mr Sin Kim Ho



Mr Chew Kwee San



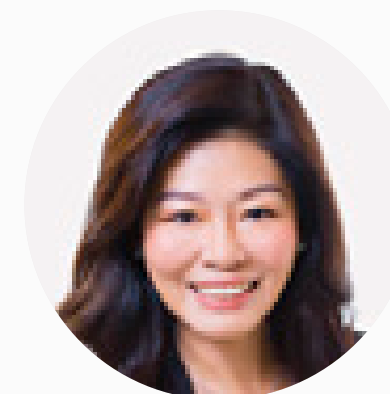
Mr Howie Lau



Ms Leonie Lee



Prof Ng Huck Hui



Ms Yasmin Zahid



Mr Chang Chee Pey



Ms Hwang Yu-Ning

# MANAGEMENT TEAM



Assoc Prof Lim Tit Meng  
**Chief Executive**



Mrs Anne Dhanaraj  
**Senior Director,  
Education Programmes**



Mr Daniel Tan  
**Senior Director,  
Projects & Exhibitions**



Dr Florence Francis  
**Assistant Director,  
Organisational Excellence**



Mr Aaron Chew  
Director,  
Human Resources



Ms Cham Lee Fin  
Director,  
Finance & Administration



Mr Gerald Tee  
Director,  
Marketing &  
Communications



Ms Kamaria Abdul Ghani  
Director,  
Science Upstream &  
Gallery Programmes



Dr Lee Song Choon  
Director,  
Life Sciences &  
KidsSTOP™



Mr Michael Chay  
Director,  
Business Development



Mrs Ong Me Lan  
Director,  
STEM Inc



Mrs Veronica Heng  
Director,  
Operations



Mrs Susan Chang  
Deputy Director,  
Visitor Services



Mr Edwin Teng  
Assistant Director,  
MIS



Mr Eugene Wambeck  
Assistant Director,  
Exhibitions



Dr Kiruthika Ramanathan  
Assistant Director,  
Education Programmes



Mr Lee Lian Soon  
Assistant Director,  
Travelling Exhibitions &  
Special Projects



Mr Mohd Jaafar Dollah  
Assistant Director,  
Facilities &  
Estate Management

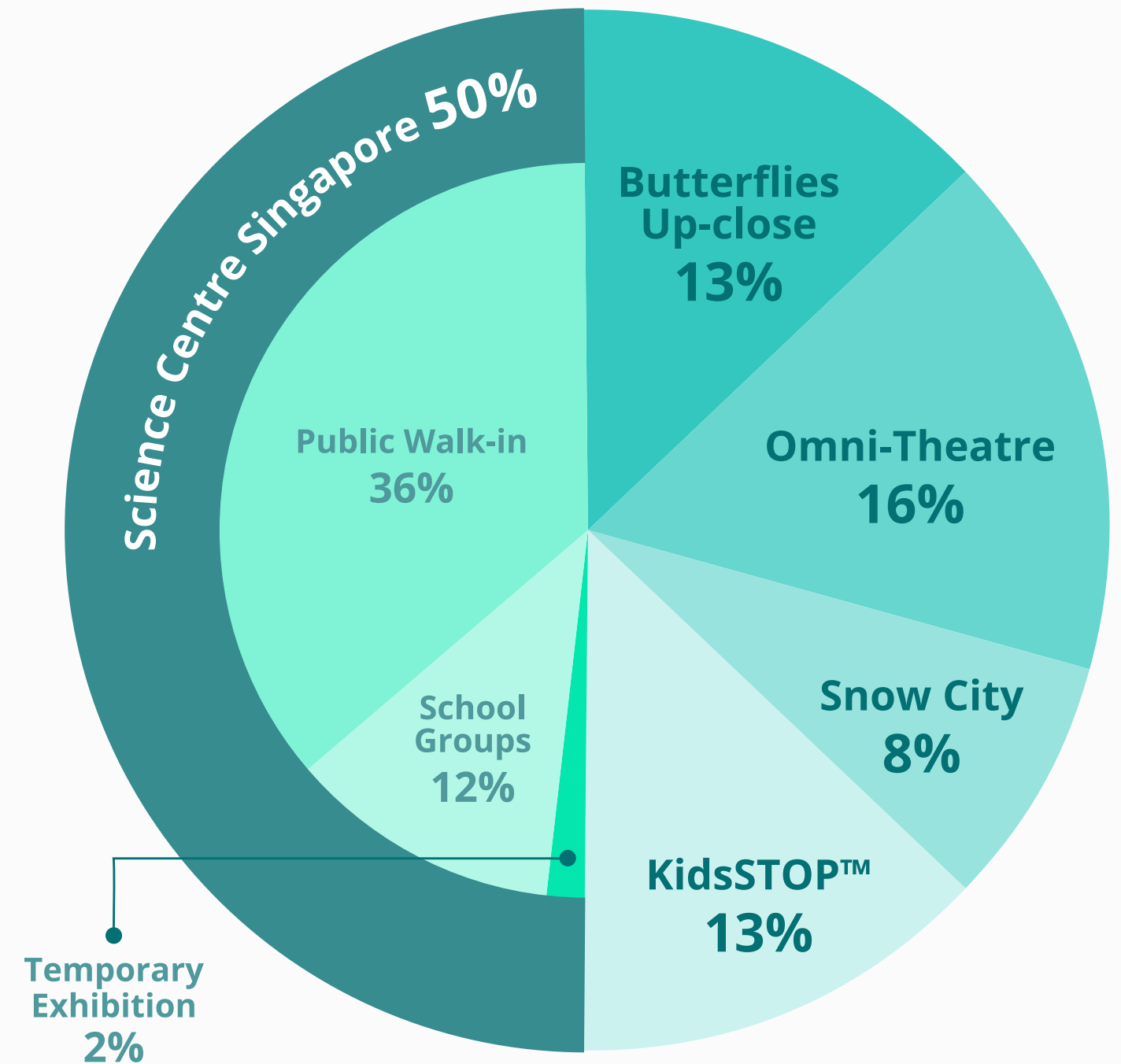
# ACHIEVEMENTS & AWARDS

- > **Visitorship & Enrichment Programmes**
- > **List of Awards**



# VISITORSHIP: 1,175,800 GUESTS

<span style="color: #008080;">●</span> Science Centre Singapore	<b>585,482</b>	<span style="color: #008080;">●</span> KidsSTOP™	<b>153,176</b>
<b>Break down:</b>			
<span style="color: #008080;">●</span> Public Walk-in	<b>427,603</b>	<span style="color: #008080;">●</span> Snow City	<b>94,011</b>
<span style="color: #008080;">●</span> School Groups	<b>139,625</b>	<span style="color: #008080;">●</span> Omni-Theatre	<b>192,064</b>
<span style="color: #008080;">●</span> Temporary Exhibition	<b>18,254</b>	<span style="color: #008080;">●</span> Butterflies Up-close	<b>151,067</b>



# ENRICHMENT PROGRAMMES: 260,413 PROGRAMMES

# LIST OF AWARDS

## 2018

### 2018 MOE Innergy Awards

**Commendation Award for Family Science Clubs**  
@ Science Centre Singapore Project  
by Ministry of Education

### 2018 Stevie Award Winners

**Website Awards Category**  
**Best User Experience**  
– **GOLD STEVIE® WINNER**  
Adelphi Digital Consulting Group, Singapore and  
Science Centre Singapore  
by The International Business Awards

### Friends of Institute of Engineers' Award

**Outstanding contributions to IES Groups and Committees in the Council Year**

### Excellent Service Awards

**19 Star Awards, 1 Gold Award and 6 Silver Awards** to Science Centre staff  
by Association of Singapore Attractions

### bizSAFE Level 3 Certification

by Workplace Safety and Health Council

## 2019

### PR Awards 2019

**Best Use of Technology**  
– **Silver for Singapore Science Festival 2018**  
AKA Asia and Science Centre Singapore  
by Marketing Interactive

### PRISM Awards 2019

**Outstanding Integrated Campaign (Lifestyle)**  
– **Merit for Phobia<sup>2</sup> Party**  
Burson, Cohn & Wolfe and Science Centre Singapore  
by Institute of Public Relations of Singapore

### TripAdvisor 2019

**Certificate of Excellence**  
by TripAdvisor

# EXHIBITIONS & PROGRAMMES

- > **Exhibitions**
- > **Science Outreach & Competitions**
- > **Science Programmes**
- > **STEM Inc**
- > **CRADLΣ**
- > **Singapore Science Centre  
Global Pte Ltd**



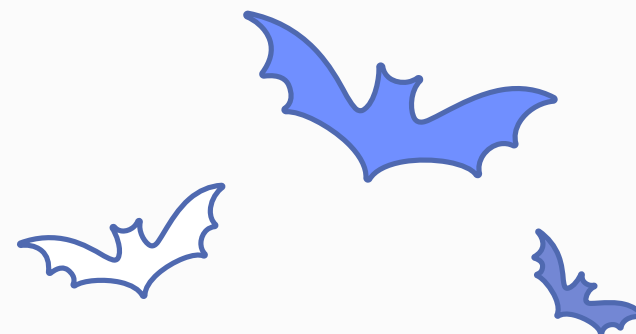
# EXHIBITIONS



## Phobia<sup>2</sup>: The Science of Fear

Phobia<sup>2</sup>: The Science of Fear opened in April 2018. Specially curated by the Centre and Newman Entertainment International, this exhibition touched on the subject of fear through a unique and immersive exhibition experience. It explored the topic of fear, from its historical and cultural significance, to the psychology and physiology of fear and how it affects our daily lives. It also focused on capturing the interest and imagination of our guests, through the use of original pop-art design and show styled elements. Its novel approach has delighted and impressed guests of all ages. Both mainstream media and lifestyle sites featured the exhibition extensively for its engaging content and visually-appealing exhibits.

### Various Exhibits

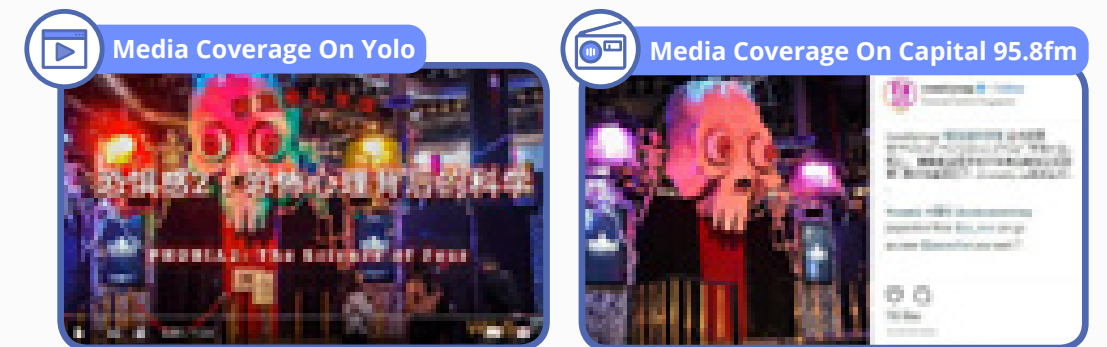


Over **30** Exhibits On Various Phobias And Fears

### Media Preview

**40**  = **\$353,731**  
 Pieces Of Coverage Worth Of Advertising Value Equivalent

Mainstream media such as The Straits Times, Lianhe Zaobao, Tamil Murasu covered the exhibition launch extensively. Other media platforms include Mothership, DiscoverSG and YOLO Sg. Radio interviews on 938NOW and Capital 95.8FM were also aired.



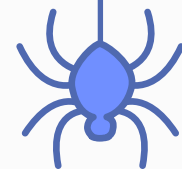




## Phobia Party

 13 & 14 Apr 2018  434 pax

To celebrate the launch of Phobia<sup>2</sup> exhibition, the Phobia Party was organised to promote the new exhibition to young adults through an after-hours event. Selected exhibition galleries within Science Centre Singapore were opened from 6pm to 11pm during the party to give event attendees a sampling of our offerings. Carnival-style game stores and “hipster” food stalls with IG worthy creations livened up the atmosphere at our western entrance near Eco Garden. The experience was complemented with stargazing, open-air movie screening, open-mic stand-up comedians and singers.



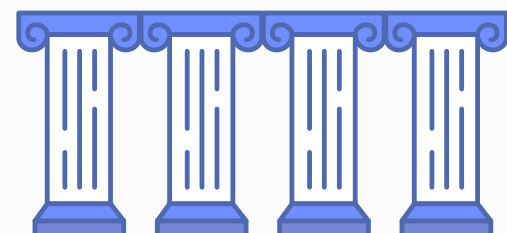
## The Inventions of Ancient Greece: Origins of Our Modern Technology

 19 Oct 2018 - 24 Mar 2019  21,484 pax

As part of our year-end festivities, “The Inventions of Ancient Greece” exhibition was specially brought in from Greece. The exhibition featured more than 40 inventions, carefully curated by the Kotsanas Museum in Athens, Greece. The inventions spanned across a multitude of disciplines; such as automation, programming, astronomy, time-keeping, and music, just to name a few. All exhibits were built with great accuracy, referenced from ancient texts. The exhibits were accompanied by rich audio-visual material, such as explanatory labels, information panels, detailed diagrams, photos, and complete bibliographical references.



From left: A/Prof Lim Tit Meng (Chief Executive, Science Centre Board), Mr Kosta Kotsanas (Founder, Kotsanas Museum, Greece), H.E. Ms Constantina Koliou (Ambassador of Greece to Singapore)





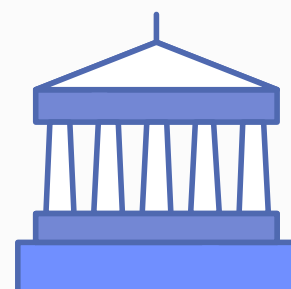
## Greek Valentine's Day Dinner 2019

 14 Feb 2018  30 pax

Couples were invited to experience a romantic Valentine's Day dinner at Science Centre Singapore as part of our efforts to reach out to young adults; since the Centre is more than just a science institution for students. It was full-house as 15 couples enjoyed a sit-down dinner with authentic Greek cuisine catered for this event. The couples enjoyed the Ancient Greece exhibition, with many of them returning to the exhibition after dinner. The guests were also meaningfully engaged as many of them were seen reading the exhibits' explanations and trying out the different hands-on activities.

“ Very unique experience to dine within Science Centre. The Antique Greece science exhibition is interesting and fun. Science Centre should consider doing more of such events to attract more people visiting the Centre at various special occasions. ”

**Ricky Lim, Event Specialist**





## The beauty of Art & Nature in Science exhibits

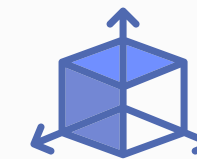
A series of exhibits was featured at Science Centre in 2018. These exhibits featured the beauty of art and nature in science.

### Giant Zoetrope: The Illusion of Motion

Part artful sculpture, part optical illusion, the zoetrope is a contemporary version of the Victorian optical toy that used the same principle as the cinema to create the illusion of movement. Standing at 1.5 metres in diameter and 1.5 metres high, this zoetrope could be considered an iconic giant; one of four such structures in the World!

The artwork represents three stages of evolution of our world: past, present and future. "The Spiral of Time" starts from the prehistoric era, through to current times of modern technology, and finally culminating with the conquest of the universe.

- Elaborate kinetic artwork that is nearly 2m tall



Size:

**1300 x 1300 x 1945mm**



Weight:

**Approx 200kg**

- Consists of 605 individual objects



**3 months**

of 3D Modelling, Sculpting  
and Animation Efforts



**4 weeks**

to 3D print

- Each object hand-painted in great detail



**1220 hours**

of work

- Entire zoetrope took 960 hours to assemble



**960 hours**

to assemble



### **Bloom**

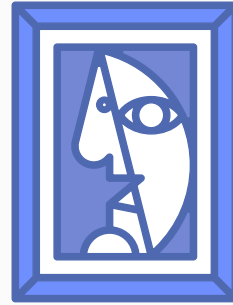
Synonymous with its name, the BLOOM is an animated sculpture that endlessly unfolds and blossoms as it spins beneath a strobe light. Its spiral patterns were designed upon the golden angle ( $137.5^\circ$ ), which is the same angle that Nature employs to make spiral patterns in many plants such as pinecones and sunflowers. By using the golden angle, the 'movement' of the sculpture is very natural, and it appears to come alive!

### **Sisyphus table**

A metal ball rolls silently through sand, creating and easing patterns along its path... The captivating artwork is controlled by "Sisbot", two stepper motors which are programmed to work in polar coordinates, controlling a magnet which pulls the metal ball along its path. The Sisyphus table is the first of its kind, a museum-quality kinetic controlled art sculpture. The brainchild of former Artist-in-Residence, Dr Bruce Shapiro; Sisyphus Table is also being displayed at Questacon National Science and Technology Centre and Swiss Science Centre Technorama.



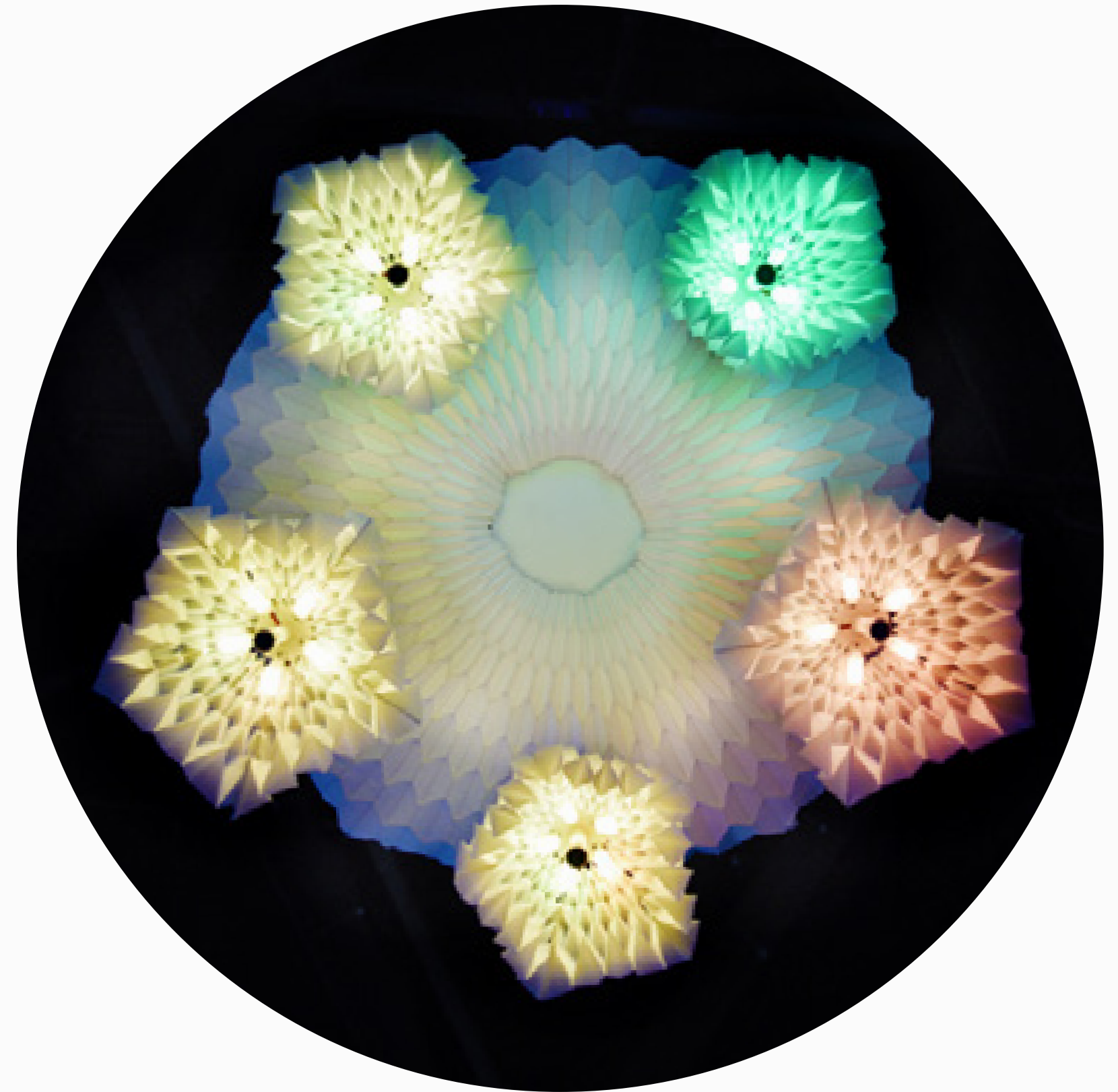
## VisualSG 2018



 17 Nov 2018 - 28 Feb 2019

VisualSG is a showcase event of the E3 exhibition that marries the arts and sciences. Every year, Visual SG features the interactive installations of Artists-in-residence. The focus for this year is origami and robotics. Artist Matthew Gardiner was invited to display his Oribots at the E3 exhibition hall. Oribots are a playful representation of biomimicry. Akin to the venus flytrap, the Oribots respond to guests by opening and closing based on guests' proximity to the art installation.

Aside from showcasing art science installations, our resident artist also conducted public and school workshops to share what inspired him to create this work. The workshop participants got to create their own miniature versions of the Oribot to take home. This and future installations will inspire us to think about how arts can play an important role in Science and be integrated into STEM education and learning.





## E3: E-mmersive Experiential Environments

Green, verdant forests now adorn the walls of E3! In this third refresh, E3 has been revitalised with a dynamic 360 projection mapped environment that is based on the unreal game engine. In this environment, guests get to experience day and night transitions, weather changes, learn about some of the endangered animals in Southeast Asia and even help save the forest from a forest fire. Another new feature is the river projection that leads from the entrance all the way to the Exhibition's central feature, Cube Mountain. The river installation is not just a pretty addition, guests can create ripples in the river and interact with the fishes.

The most ambitious work undertaken in this refresh is the new Virtual Reality experience in Cube Mountain. Guests get to interact with one another in a multiplayer VR game. Using the Virtuix Omni, a VR rig that allows guests to walk or run in a virtual environment, guests can become virtual explorers. Coupled with Leap Motion sensors and the Oculus headsets, this virtual set-up will give the Centre the first-of-its kind ability to create new experiences for experimentation.



## 3D: Printing the Future Exhibition

Imagine a world without limits, where any object could be produced at the drop of a hat.

Recent advances in 3D printing mean that more people than ever can make their ideas real. This burst of creativity has created millions of interesting things – some of them could even change your life. No wonder 3D printing is always in the news. But are the stories accurate, or even true?

Developed by London Science Museum, this exhibition looked at the different types of 3D printing and how some 3D printed items had been used in the medical field to save lives.







## Launch of revamped Supermarket and Know Your Body zones at KidsSTOP™

Together with the Health Promotion Board (“HPB”), the Centre announced the launch of new exhibits at the Supermarket and Know Your Body Zones at KidsSTOP™ on 14 May 2018. Ms. Low Yen Ling, Senior Parliamentary Secretary, Ministry of Education graced the event as the Guest of Honour.

The aim of the partnership is to bring educational health and science elements to life through play at KidsSTOP™, to encourage good health habits including eating healthily, staying active and having positive mental well-being.



# SCIENCE OUTREACH & COMPETITIONS

## Singapore Science Festival

 17 Aug - 8 Sep 2018  Various locations

The Singapore Science Festival (SSF) is Singapore's largest annual science event. The 2018 Science Festival hosted a series of workshops and events around the theme "Hello World, A.I you ready?".



**Visitorship 90,000**  
(Students, Families, Young Professionals)



**More than 50**  
Events, Seminars and Shows



**28** Public Agencies + **16** Private Organisations involved

## Singapore Maker Extravaganza

 17 -19 Aug 2018  Our Tampines Hub

Mr Desmond Choo, Mayor of North East District was the Guest-of-Honour at the Maker Faire Singapore as part of Singapore Maker Extravaganza 2018 (an event of Singapore Science Festival).



More than **10,000** Guests



**116** Maker Groups + **1,500** Makers



**358** Booths

### STAR Lecture 2018

 23 & 24 Aug 2018  
1 Oct 2018  MediaCorp Channel 5

Prof Sophie Scott from the University College London, an expert in Cognitive Neuroscience gave an entertaining lecture entitled the "Language of Life" where she explored one of the fundamentals of human and animal life: the unstoppable urge to communicate.

### Science Buskers Festival

 23 May - 1 Sep 2018  Science Centre Singapore & Plaza Singapura

Extensively covered by mainstream media.



**More than 1000**  
Students, Educators and Professionals attended



**125,000**  
Television Viewers



**3**  
Sessions



**Over 18,000**  
Supporters and Public members attended



More than  
**200 Teams**



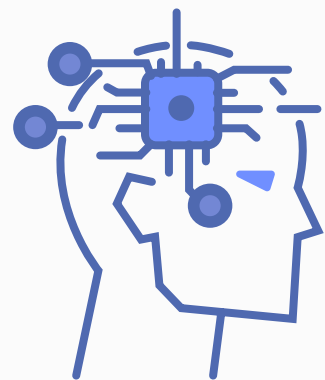
**518**  
Participants



## A.I. Ready @ SCS

 1 - 8 Sep 2018  Science Centre Singapore

A.I. Ready was held at the Science Centre with a workshop entitled "Introduction to Artificial Intelligence" on Augmented Reality Dodgeball game and a special Gallery Trail. There was also a talk by Abhilash Murthy, the 24-year-old creator of Singapore's very own chatbot "Bus Uncle". This new event attracted more than 6,000 participants.



## Singapore Book of Records Activity

 6 Sep 2018  Fusionopolis

Held in partnership with Oppo phone and more than 300 enthusiastic participants, the Singapore Book of Records was set for the Most Number of Animated Emojis Created Using Facial Recognition in just under two hours.



## X-periment!

 7 - 8 Sep 2018  one-north

A public showcase of the latest research work done by 25 organisations, including research institutes and institute of higher learnings, as well as eight private organisations was presented at this event.



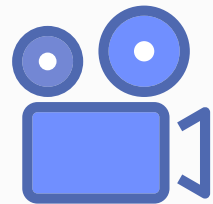
## National Science Challenge 2018

 14 Sep 2018  MediaCorp Channel 5

A televised science quiz aimed to create an interest in science as well as raise scientific awareness among the masses in its 15<sup>th</sup> season.



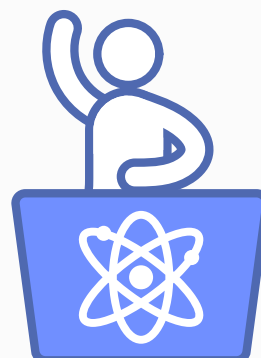
**40 Teams**  
(Secondary schools) took part in the qualifying round



**24 Teams**  
Made it through to the televised rounds



**More than 325,000**  
Television and Social Media Viewers



Champion team Victoria School received the Champion Trophy from the Guest-of-Honour, Dr Vivian Balakrishnan, Minister of Foreign Affairs at the grand final on 14 September 2018

## Future City – Towards United Nations Sustainable Development Goals

 1 May 2018  Istana Open House

Organised by the Lifelong Learning Council and Science Centre Singapore as part of the May Day Open House activities at the Istana, members of the maker movement showcased their products, tools and resources to help achieve the United Nations Sustainable Development Goals (SDG) at the event.

The event featured the role of Science, Tech, Engineering, Art and Culture in working towards the SDGs. Also, the event showed how the individual and the community could play a role in achieving the SDGs through collaborative partnership.

Participating Makers included Sustainable Living Lab (SL2), Anjali Design, Just Love Crafts, 3D-Printing-Hub Asia, STEM Inc, Engineering Good, Yarn Bombing Singapore, Dona Banerjee, Cathy Ooi and Gabriel Koh. The programme was sponsored by the Skills Future Singapore under the Learn@SG seedfund.



## RADTalk 2018

 25 Oct 2018  
1 Nov 2018  SCAPE & Star Vista

Science Centre Singapore and the National Research Foundation jointly organised RADTalk where radiation experts and personalities shared their expertise and insights, as well as answered questions that students and the general public may have about radiation.

The first two talks in the series were presented by A/Prof Thomas Osipowicz from National University of Singapore and Dr Christelle Chua from Singapore Nuclear Research and Safety Initiative. The talks attracted close to 400 students to the sessions.



# Drone Odyssey Initiative

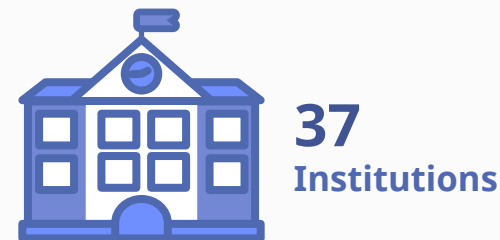
## Drone Odyssey Challenge

 22 May - 6 Jul 2018  ITE College Central & Suntec City Convention Centre

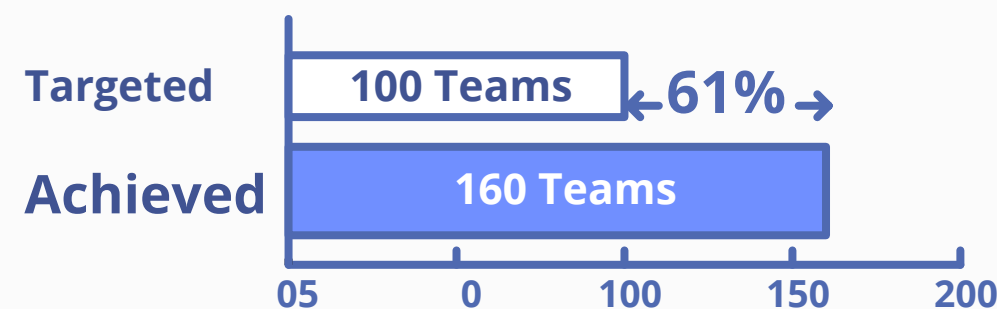
Drone Odyssey Challenge is an exciting game-based competition that promises plenty of fun for students at the Primary and Secondary levels while inculcating technical skillsets, critical thinking and an appreciation of new and disruptive technologies relevant to the modern world.

Participants worked together in teams to code their programmable drones so as to transform them into Unmanned Aerial Vehicles (UAVs) capable of performing tasks under given scenarios. A series of workshops and live demonstrations have been specially developed for both students and mentors to complement their learning journeys leading up to the competition proper.

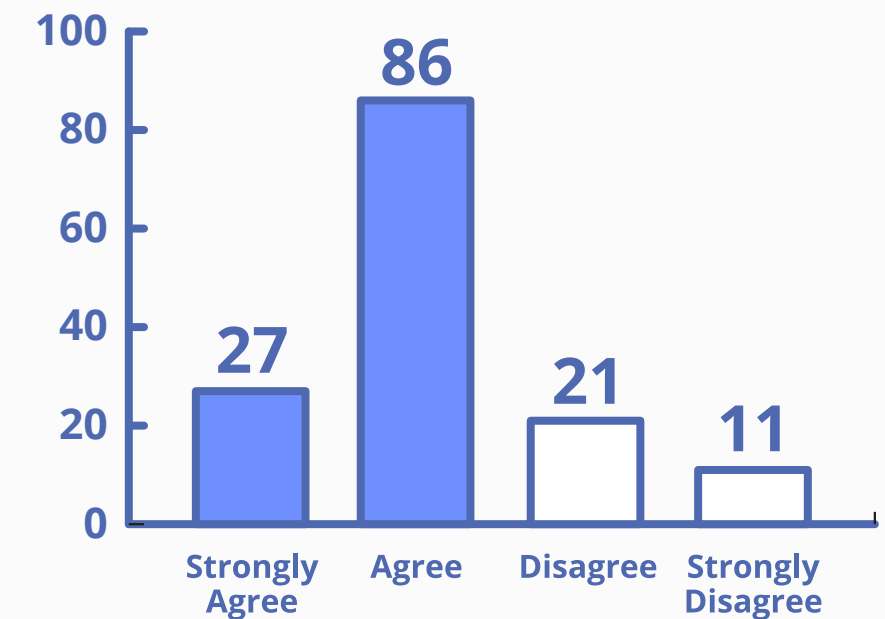
The theme of the competition for 2018 was "Surveillance Management". The basic premise for the problem statements of the competition arose from the global backdrop of terrorism with drones (Unmanned Aerial Systems) functioning as effective surveillance management systems that could monitor, identify and even neutralise potential threats.



The target number of teams for Drone Odyssey Challenge 2018 was 100 teams, but we significantly surpassed our target by 61%.



A post survey conducted with 435 correspondents (84.8% of participants) indicated favourable feedback about the competition. When the participants were asked if their "participation in Drone Odyssey Challenge 2018 had enhanced their understanding of science beyond the classroom", 339 correspondents (77.9% of participants) responded positively.





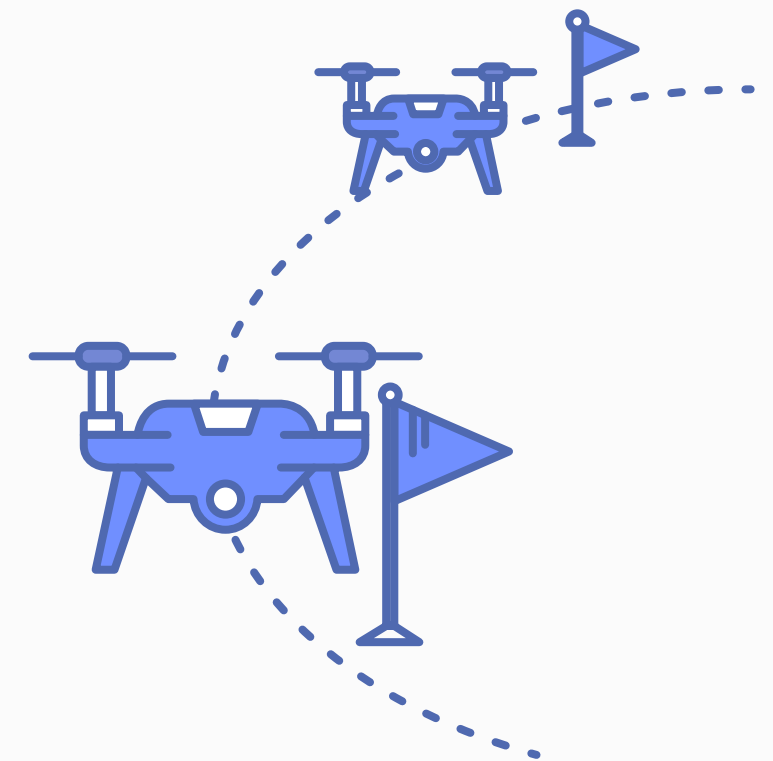
Mr Ong Ye Kung, Minister for Education, capturing the drone in action



Participants code their programmable drones to fly autonomously



Participants worked as a team to perform tasks under given scenarios



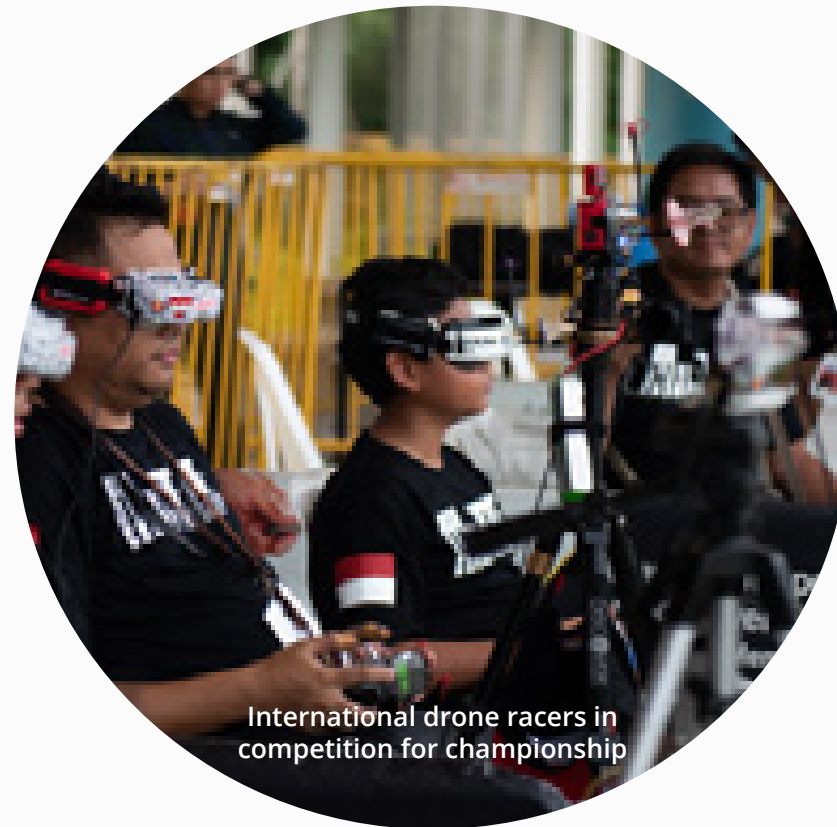


## Asia Drone Championship

 8 Sep 2018  Marina Bay Golf Course

Jointly organized by the Centre and Multi Rotor Association Singapore, the second edition of the Asia Drone Championship (ADC) was an exciting and thrilling drone racing spectacle that featured top tier drone racing, cool drone demonstrations, drone products display and sales as well as hands-on activities for the public.

Held at the Marina Bay Golf Course, it featured 50 elite First Person View (FPV) racing pilots from Asia Pacific who battled it out through a massive multi-level, world-class race course specially designed against the beautiful backdrop of Singapore's enchanting city skyline. Over 2,000 people attended the event and engaged in fringe activities that aimed to unite drone communities, introduce the joy of learning new technologies to wider audiences and encourage greater interest in this thrilling e-sport of the future.



International drone racers in competition for championship



Chief Executive of Science Centre Board, A/Prof Lim Tit Meng presenting the Asia Drone Championship trophy to Ryan Tan from Singapore



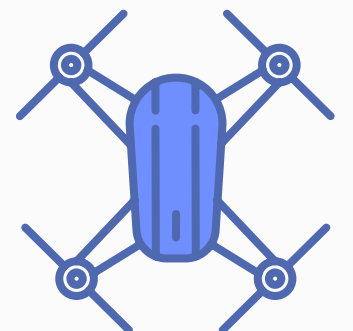
Asia Drone Championship 2018



**50**  
International  
Pilots



**2500**  
Public members



## Singapore Science & Engineering Fair (SSEF) 2019

 6 - 7 Mar 2019  Our Tampines Hub

Singapore Science & Engineering Fair (SSEF) is organised by the Ministry of Education (MOE), the Agency for Science, Technology and Research (A\*STAR) and Science Centre Singapore (SCS). SSEF is the ideal platform for students from the upper secondary and JC levels who have conducted research over the past year to showcase their findings. The SSEF entries are often of very high quality as many of them were carried out under the supervision of lecturers and scientists in the Institutes of Higher Learning (IHLs) and Research Institutes and Centres (RICs).

The excellent projects were judged by various research and industry experts, with a total of 117 Gold, Silver, Bronze and Merit awards handed out, as well as an additional 37 Special Awards given out on the same day by STEM-related organisations based on the project reports or interviews with the students during the SSEF Judging Day.



**3,000**  
Supporters and Public Walk-ins



**570**  
Registered entries



## International Science Drama Competition

 14 Apr - 14 Jul 2018  Science Centre Singapore & Kuala Lumpur, Malaysia

The International Science Drama Competition aims to promote science through drama and allow participants to compete at an international level. This is the fourth year that the competition is organised. There are two categories – Primary School category and Open Category. The Primary School category was open to teams from primary schools; while secondary and tertiary students, as well as members of the public of any age group, could take part in the Open Category. The theme for 2018 was “Science in Sports”.

Each participating country organised their own regional Finals. The Singapore Finals was held for all local teams (Primary School and Open categories) on 14th April 2018. The champion from each category – Kuo Chuan Presbyterian Primary School and Nanyang Girls’ High School – was selected to represent Singapore in the Grand Finals.

The Grand Finals were held at KDU College, Glenmarie Campus in Kuala Lumpur, Malaysia on 14th July 2018. This was the first time that the Grand Finals was held outside Singapore.

In the Grand Finals, Kuo Chuan Presbyterian Primary School won 2nd Prize in the Primary School Category.

Nanyang Girls’ High School won 1st Prize in the Open Category. Other than participating in the competition, the Singapore contingent also took part in a city tour and visited Petrosains – The Discovery Centre together with the participants from the other countries.

### Singapore Finals



Primary School Category:  
**18 Teams**

Open Category:  
**21 Teams**

### Grand Finals

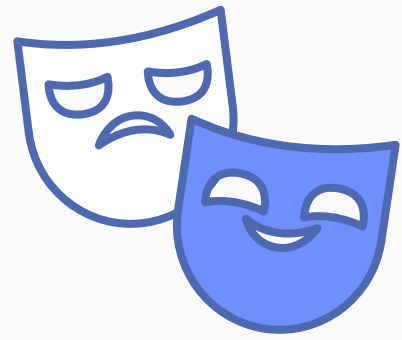


**6**  
Countries



**12 Teams**  
7 Primary Category  
5 Open Category





## A\*STAR Talent Search 2018

 26 Apr 2018  Biopolis

612 students registered for this year's competition and eight finalists were carefully selected after two gruelling rounds of judging. The eight ATS finalists impressed the panel of judges with their high-quality research outcomes, deep analytical thinking, as well as the aptitude to carry out independent research with ingenuity and passion. The interview panel was headed by ATS 2018 Chief Judge, Prof Arie Warshel, 2013 Nobel Laureate in Chemistry.



## Energy Innovation Challenge 2018

 26 - 28 Jul 2018  Suntec Convention Centre

The Energy Innovation Challenge (EIC) was jointly organised by the Institution of Engineers, Singapore (IES) and Science Centre Singapore with the support of the Ministry of Education and the National Research Foundation (NRF). The competition's inaugural event was held in 2015. In 2018, EIC was again held in conjunction with the annual National Engineers Day (NED) as an anchor event showcasing energy engineering innovations by students. EIC engages students from secondary schools, junior colleges, ITEs, polytechnics and universities.



**Category 1**  
Secondary school teams

**Category 2**  
Junior College teams

**Category 3**  
ITE & Polytechnic teams

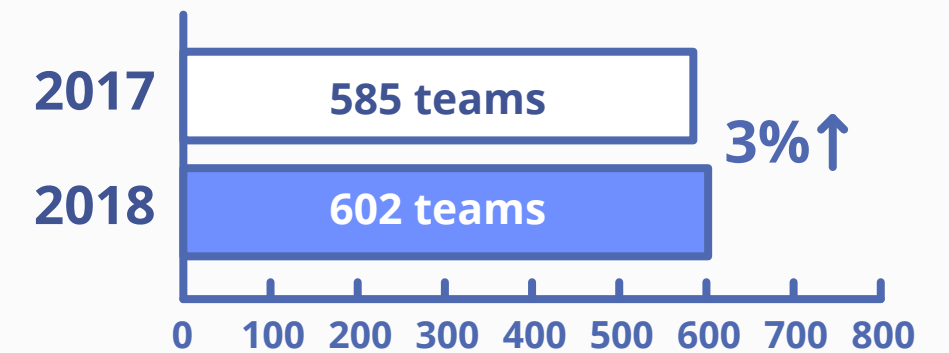
**Category 4**  
University  
(local and overseas teams)

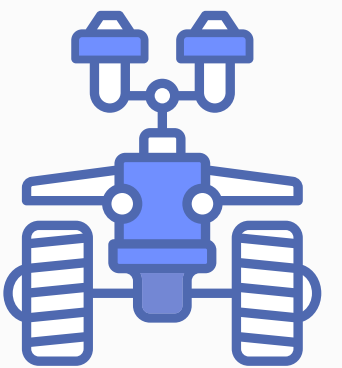
Setting a new record, 118 teams took part in this year's competition. The top prize team of categories 1- 3, went on the sponsored educational overseas trip to BMW Immersion Programme in Munich, Germany.

## National Robotics Competitions 2018

 3 - 8 Sep 2018  Science Centre Singapore

The National Robotics Competition 2018 (NRC) spurs students' interest and innovation in STEM by applying what they have learnt in school textbooks via a hands-on manner through NRC. NRC celebrates the process of learning through interactive and meaningful experiences and encourages students to develop problem-solving skills, entrepreneurial skills, creative thinking skills and team spirit among the participants.





## Sony Creative Science Award 2018

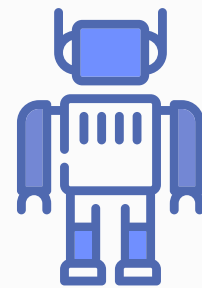
 **8 Nov 2018**  **Science Centre Singapore**

The 21st edition of SCSA 2018 was jointly organised by the Sony Group of Companies in Singapore and Science Centre Singapore (SCS), with the support of Ministry of Education (MOE).

The objective is to promote creativity and to provide an opportunity to learn about science beyond the classrooms in a fun and enjoyable way through making toys. As this was the 21st year of the competition, a new element was introduced with shortlisted finalists from the Whizkid category invited for a toy-making session and an interview to showcase their aptitude and skills to the selection panel.



**90**  
Primary Schools involved

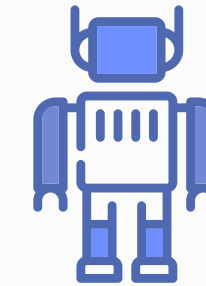


**4,478**  
Toys Created



More than  
**5,700 Participants**

**Over the past 21 years**



**Over 68,000**  
Toys Created

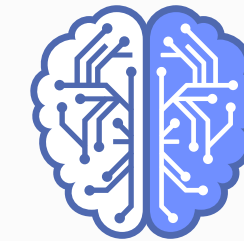


**85,000**  
Student Participants

# SCIENCE PROGRAMMES

## Amgen Biotech Experience

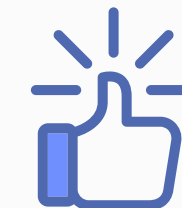
Sponsored by Amgen Foundation, the Amgen Biotech Experience (ABE) is an innovative science education programme that introduces secondary and tertiary students to the excitement of scientific discovery. ABE provides secondary and tertiary teachers with the loan of research-grade equipment, curriculum and professional development.



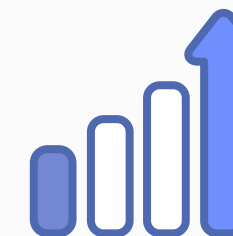
**97% of the Teachers** who attended the workshop said that they can apply the ideas and skills learnt



**82%** said that they learnt something new



**85%** said that the hands-on activities were fun



**2000+ Students** Expected in year 2020



**14 Schools** Participating



**870** Number of Students reached



**100% of the Teachers** who attended the workshop said that they will recommend it to others



**Celebrating One Year** of bringing Biotech to Classrooms in Singapore



**35 Teachers and Lab Technicians** trained to date





Teacher conducting a DNA analysis experiment during the Professional Development Workshop



Students performing a protein purification experiment.



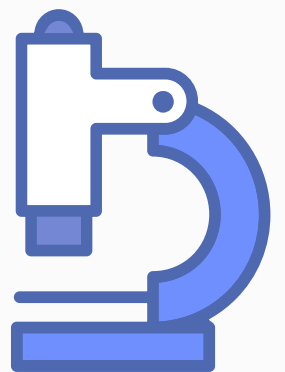
Student viewing the results of a DNA analysis experiment.



Student spreading bacteria on an agar plate during a bacterial transformation experiment.



Students using micropipettes during the workshops.



## Abbott Young Scientist Programme

 Jan - Sep 2018

Sponsored by Abbott Laboratories and started in the year 2013, the Abbott Young Scientist Award is organised by Science Centre Singapore and Abbott Laboratories, and supported by the Ministry of Education. The programme consists of a structured programme on project work, science content and science communication skills. The Award is given as a form of bursary for receiving mentorship by Science Centre's educators in science content and communication. 35 students will be given opportunities to learn about science through resources and visits to the Science Centre with their families.

They will be mentored through a series of programmes that include project research skills, oral presentation techniques and science communication, and even the opportunity to interact with scientists. In 2018, activities included a Summer Week Camp with a Team Bonding Day in June and a trip in July to Abbott Manufacturing Plant. The programme culminated in a project presentation ceremony held in August 2018 at Science Centre called 'Abbott Young Scientist for a Day' where families, teachers and school representatives were invited to participate in.



**35 Mentees**  
From 23 schools

**32 Mentors**  
From Science Centre Singapore



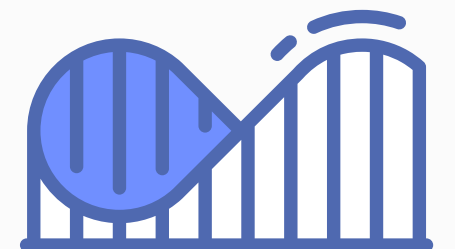


## Mindfest 2018 – Power Up Power Down

 20 Mar - 6 Apr 2018

Mindfest 2018 offered an open-ended challenge on energy where students learnt to build structures that had the ability to convert energy. Families and friends in teams of five bonded over creative and immersive tinkering activities that encouraged science and technology exploration.

The programme was sponsored by SkillsFuture Singapore, under the Learn@SG seedfund.



## Brain Fest



12 - 27 May 2018

A moment of folly caused the lab assistants to teleport back to the past through the time machine. In this exciting mass escape game, participants role-played as the lab assistants who raced against time to unlock the time machine's emergency return button before the fuel ran out. Based on the theme of 'Time Travel', this is the fourth year that Brain Fest has been running as part of the mid-year post-examination programme.

Participants also learnt about DNA, hereditary and DNA separation techniques to find out King Tut's parentage in the hands-on workshop in the DNA labs. On weekends, scientists from Duke-NUS Medical School had a demonstration booth to show how they studied circadian rhythms and sleep patterns in *Drosophila* (fruit flies). The event was opened to school groups on weekdays and public on weekends. Brain Fest partners are BRANDS and Society for Neuroscience.

### Activities:

1. Mass Escape Game – Race Against Time
2. Hands-on workshop – DNA in the Ancient World
3. Tuning In: Brain and Body Exhibition Gallery Trail
4. Neuroscience Demonstration – Circadian Rhythms and Sleep in *Drosophila*




**12,184**  
Students & Teachers

**3,007**  
Public



## Caltex Fuel Your School Tech Jam 2018 – From E-waste to robots

 10 - 15 Jul 2018

The Caltex Fuel Your School Tech Jam introduced school children from Primary 5 to Secondary 3 to robotics, app design, e-waste and innovative sustainability through a fun hands-on workshop. Students worked in groups to use a blended learning approach taking apart e-waste, extracting usable parts and then transforming them into a robot controlled by the BBC Microbit. Students also designed an app to control the robot.



**1000**  
Participants



**40% increase**  
From 2017

“ Seeing the kids come in, so hesitant, and then slowly realizing that they can do it and then when they get into it, the enthusiasm that the children had just working together, creating and coming up with ideas of what they wanted to do was truly rewarding. ”

Seema Norris, Chevron Employee Volunteer



## Science 2025 – Towards Science communication for SG 60

 1 - 2 Dec 2018  214 Participants

The aim of Science 2025 hackathon was to challenge the community to co-create solutions to problems around science communication, specifically local problems involved with experiential learning of Science and Technology. The programme was supported by Caltex and by SkillsFuture Singapore.

“ We should try to challenge ourselves to create something that seems impossible. ”

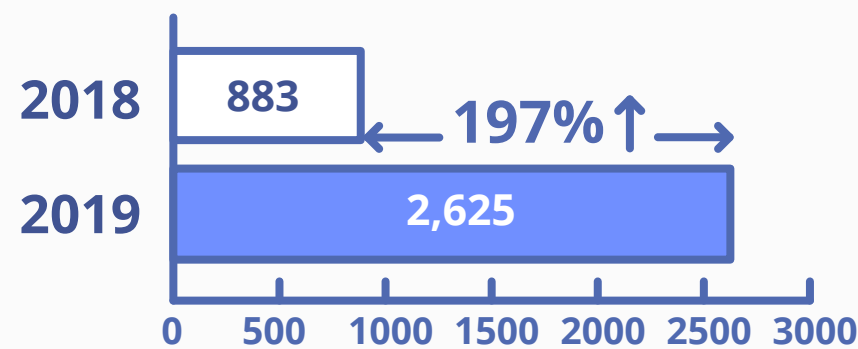
Arash Nur Iman



## DiscovHER

 7 - 11 Feb 2019

DiscovHER celebrated the “International Day of Women and Girls in Science”. The programmes featured women’s contributions in science discoveries with the aim of encouraging girls to participate in Science, Technology, Engineering and Mathematics (STEM) education, training and research related activities.



“ Fantastic! Make it a permanent feature! ”

Molly, Guest

“ Fabulous, fun and very educational for the children ”

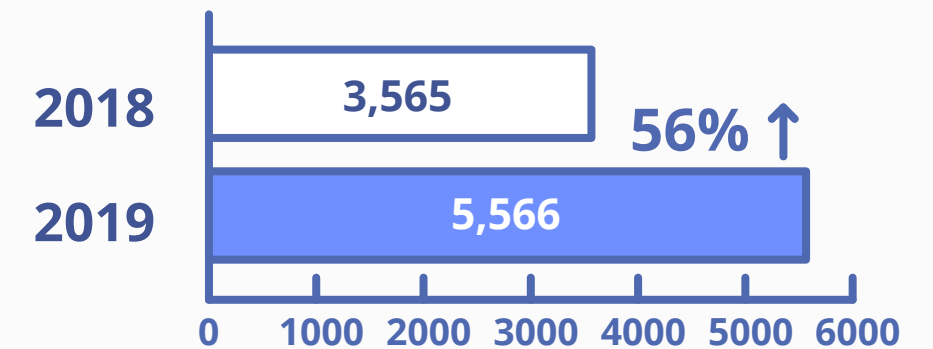
Audrey, Guest



## Instπre

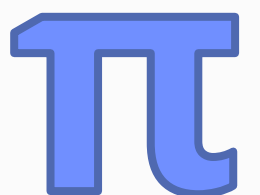
 14 - 22 Mar 2019

Instπre celebrated the Joy of Numbers and Pi Day by engaging guests in enriching mathematical activities. One of the programme highlights was the “π memory challenge” which required guests to memorise as many digits of π as possible. The record of 1,004 π digits memorized set in 2018 still stands.



“ The activity was fun. I learnt something new! ”

Anna Tan, St Margaret’s Primary School



## Children's Season Programme - I'm a Science Explorer!

 26 May - 24 Jun 2018  12,274 Participants

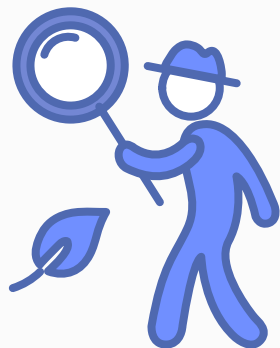
As part of the annual festival, Children's Season, "I'm a Science Explorer!" had various programmes catered for children aged 3 to 12 years old and their families during the mid-year school holidays. In 2018, children explored ways to be environmentally-friendly through a gallery trail or a "I'm a Young Environmentalist" workshop. Partners involved include Museum Roundtable and National Heritage Board.



//

It was fun and educational and it is great for people of all ages! //

**Kayla Lee, Haig Girls' School**



## Sci-sational Christmas

 14 - 25 Dec 2018

"Sci-sational Christmas" is Science Centre's annual year-end holiday programme. This year, guests were welcomed to join the jolly elves and participate in "The Elf Academy" to learn toy-making skills or catch the elves in an exciting show whereby two elves battled it out with their best science acts.



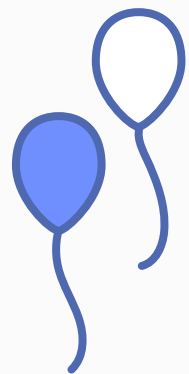


## Science Shows

### “Fun with Fear” Science Show

 May - Aug 2018

This science show complemented the “Phobia2: The Science of Fear” exhibition. Through exciting science demonstrations, guests were shown the difference between fear and phobia and how fear could help keep us safe from danger.



### “Ancient Greek Inventions” Science Show

 Sep - Dec 2018

The “Ancient Greek Inventions” science show was specially curated to complement “The Inventions of Ancient Greece: Origins of Our Modern Technology” exhibition. The show featured some of the ancient inventions of Greece that were similar to modern inventions seen and used today.

# STEM INC

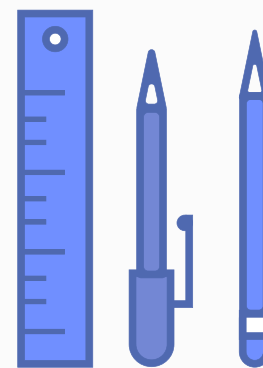
Five years on, STEM Inc remains resolute in purpose – inculcating joy in learning, entrepreneurial dare and a passion for STEM among students.

Over the last four years, it has successfully rolled out its signature series of STEM Applied Learning Programmes (ALP) across Secondary Schools, many of which continue to be proudly showcased during their open houses.

STEM Inc has since expanded its reach to primary schools, following then Education Minister Ng Chee Meng's announcement that all primary schools will be on board the ALP by 2023. STEM Inc is currently collaborating with MOE's Curriculum Planning and Development Division (CPDD) to develop an exemplar STEM ALP module designed to help students learn through experimentation via a try-fail-try approach.

In line with this, STEM Inc continues to bring the STEM industry closer to schools by working with over 50 industry partners to provide authentic learning experiences.

Apart from exposure to the real-world innovations, teachers also form networks and undergo skills upgrading through our Communities of Practice (CoP) sessions and professional development courses. Youth talents are also being nurtured through our pilot mentorship programme where students come together to cross fertilise ideas and work collaboratively on self-initiated projects.

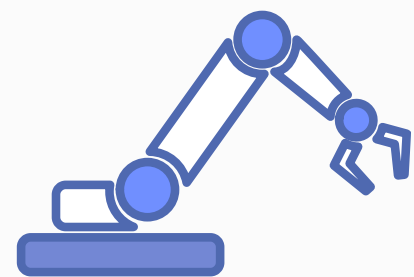


# CRADLΣ

## CRADLΣ SMART Camps Robotics Reloaded

In this two-day robotics camp at CRADLΣ's teaching lab, participants were introduced to basic mechanical, electronic and software components needed to assemble a robot from scratch and let it perform tasks such as playing the "Towers of Hanoi" puzzle. Participants also enjoyed an industry talk by Mr Hui Wing Feh (Kurve Automation Pte Ltd).

The camp was met with high demand, being conducted multiple times for the public, a local school, and an international education provider.



A student programming an industrial robot arm to perform complex motions. (CRADLΣ SMART Camp Robotics Reloaded, 1 Jun 2018)

## Participation in the Asia Pacific Metrology Programme 2018

In collaboration with the National Metrology Centre (A\*STAR), Venkat Tummala (student) and CRADLΣ staff designed and exhibited a Kibble balance (a device to implement the new definition of the kilogramme coming into force on 20 May 2019) at the Asia Pacific Metrology Programme conference in November 2018, where it garnered the attention of high-profile researchers including Dr Terry Quinn, the emeritus director of the international bureau of weights and measurements (BIPM).

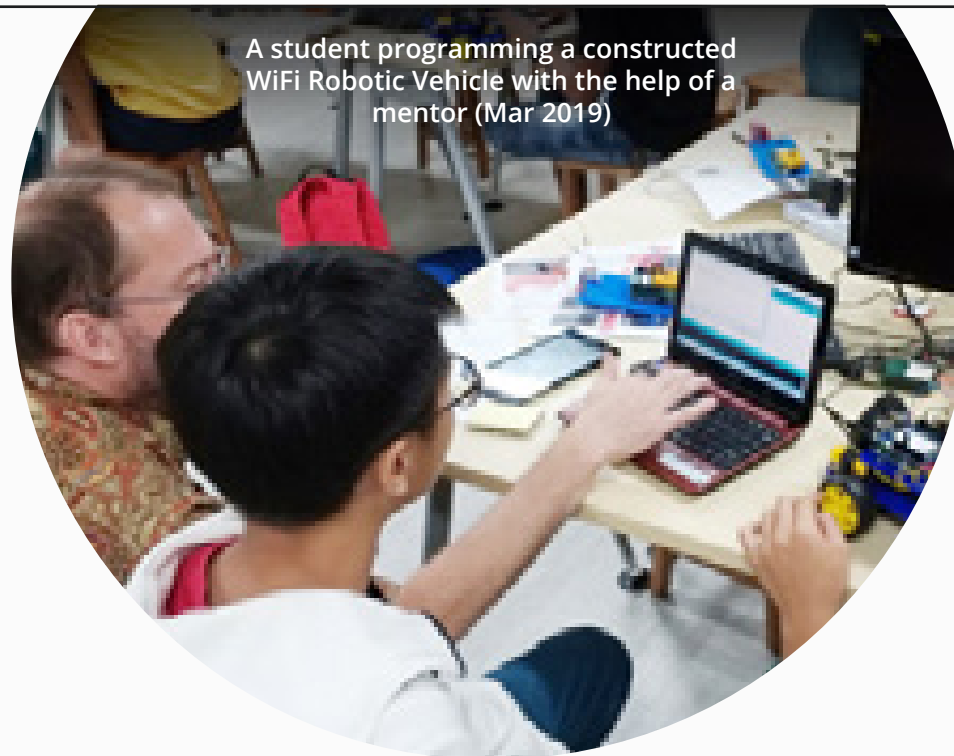
Inspired by the success of the Kibble balance prototype, MOE's Curriculum and Planning Division and CRADLΣ held joint full-day workshops in March 2019 where teachers and technicians from 20 schools built Kibble balances to take back to school for use in the classroom.



Venkat Tummala (SAYES) demonstrating the CRADLΣ Kibble balance prototype to Dr Terry Quinn, emeritus director of the BIPM, at the APMP2018 symposium (28 Nov 2018)

## CRADLΣ Robotic Vehicle Smart Camp 2019

Participants built three different models of robotic vehicles in this two-day robotics camp at CRADLΣ's teaching lab. These include Bluetooth Robotic Vehicle, Line Tracking Robotic Vehicle, and WiFi-Controlled Robotic Vehicle. Through the programme, participants used electromechanical actuators, graphical user interface, and sensors to operate the vehicles.



A student programming a constructed WiFi Robotic Vehicle with the help of a mentor (Mar 2019)



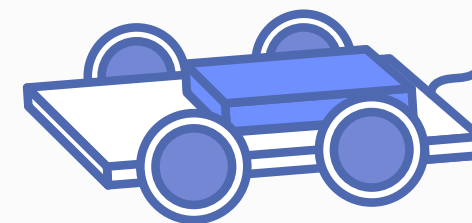
Students working together to programme a Bluetooth Robotic Vehicle (Mar 2019)

## CRADLΣ Research & Development Experience Programme

CRADLΣ Research & Development Experience Programme exposes students to real-life applications, utilizing what they have learnt in school as well as for them to pick up skills that are difficult to achieve in a school setting. It is also for students to explore STEM-related fields and research projects. In this programme, students either work on a pre-determined engineering project or pre-determined research project which is to be presented at the end of the attachment.

“ I like that this project incorporated mechanical and technical work, very much like what an engineer does. To make this car, I had to write the codes and perfect my design using libreCAD. Both the code and the design are related to each other. ”

**Gao Tianlu, Nanyang Girls' High School (WEP)**



# SINGAPORE SCIENCE CENTRE GLOBAL PTE LTD

On 29 Nov 2017, Science Centre Holdings Pte Ltd was renamed Singapore Science Centre Global Pte Ltd (SSCG) to better align with its vision of becoming the preferred global partner for STEM and Science related educational products.

In 2018, the team expanded its reach to many developing countries in Asia through road shows, the STEM Festival event and Science Conferences showcasing the Centre's wide array of products, services and programmes. The efforts helped attract more than 1,000 additional overseas students coming for science workshops conducted at the Science Centre.

Licensing of STEM Thematic programmes was also rolled out to educational establishments overseas. Vietnam, Thailand and Cambodia are some of the countries that had taken up our programmes as licensees. The STEM Thematic programmes teach students on how to address real life issues and programmes are customised based on

local relevance. Students acquire STEM knowledge through problem solving techniques and systematic project work.

Moving forward, SSCG plans to develop STEM professional training for educators and enhance our position as the preferred STEM partner in the region.



STEM Festival at Phnom Penh, Cambodia organised by our partners.



Visit to Xiamen Science and Technology Museum with SSCG Chairman, Ms Chong Phit Lian.

# GROUP OF ATTRACTIONS

- > **KidsSTOP™**
- > **Snow City**
- > **Omni-Theatre**
- > **Butterflies Up-Close**



# KidsSTOP™

The Children's Science Centre, KidsSTOP™ opened in June 2014. Specially dedicated to children aged 18 months to 8 years of age, KidsSTOP™ offers an excellent variety of engaging and immersive programmes to enhance their skillsets of inquiry, investigation and innovation.

## Abbott Grow Show You Can!



2 Aug 2018

An annual creative drama competition where young children showcase their talents while learning more about science. With the inclusion of creative arts into science learning, the competition aims to: (i) develop and cultivate interest in science among young children, (ii) to improve their understanding in science communication, (iii) to gain awareness, as well as address the current socio-scientific issues in our society. It is a thematic competition where different science themes, appropriate for children aged 4 – 6, will be introduced every year. Pre-schoolers are required to stage a performance in English not exceeding 5 minutes. Each team comprises a maximum of 10 participants.



**18 Teams**  
from 15 schools participated



**Total of 150**  
Participants



## TOTally Science

Introducing Singapore's first-ever toddler science programmes that offer 2 to 3 year-olds opportunities to learn through play and enquiry. TOTally Science recognises that young children are little scientists; they instinctively reach out to explore the surrounding with their senses.

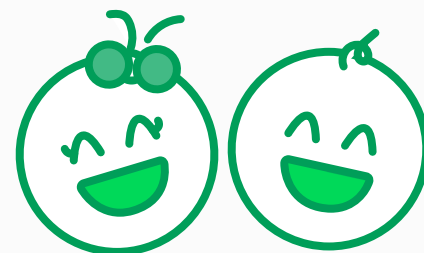
Their curiosity of the world makes them an ideal learner to introduce the fundamentals of science to them. Activities are, thus, designed to help toddlers engage, explore, and experiment with science. Children are treated to a wide array of fun-filled workshops that consist of live music, stories and hands-on experiments. TOTally Science also aims to have an enriching and unique parent-and-child bonding session in a conducive learning environment.



**338**  
Parent-child pairs



**12**  
Sessions Conducted





## KidsSTOP™'s partnership with My First Skool

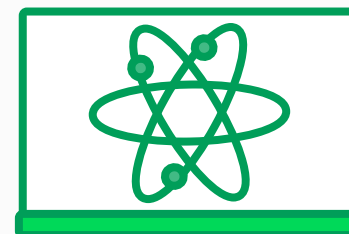
### Monthly sessions over a 3-year period

The partnership, which leverages on KidsSTOP™'s expertise in science communication and pedagogy to young children, will bring science-enabled learning to MFS. This partnership also involves equipping MFS teachers with skills to design interesting STEM-based learning programmes, by working alongside KidsSTOP™'s science educators. Professional development sessions are held monthly, where STEM topics are selected from the MFS curriculum. Teachers learn to break down complex science concepts with bite-sized activities, which they are then able to execute in the classroom.

The professional development sessions culminated in an annual STEM Fair, co-organised by KidsSTOP™ and MFS, where MFS teachers and students showcased their projects based on STEM-focused activities that had been co-created.



**36 Teacher Participants**  
From 2018 -2019



## KidsSTOP™ Academy

 10 Nov 2018

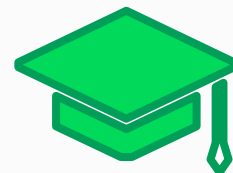
KidsSTOP™ Academy offers a holistic learning journey which consists of holiday programmes, workshops and activities that are held at KidsSTOP™. With every programme, workshop or activity completed, members can attain a stamp / sticker.

Members are encouraged to accumulate as many stamps / stickers to complete a learning journey that leads to a “graduation” ceremony. There are two tracks for children to pursue; the “LEAP” Degree or the “PAL” Degree, each denoting the number of workshops/ activities the participants have to complete.

This motivational journey advocates the continuous pursuit of scientific knowledge from a young age and encourages the development of inquiry-based and investigation skills.



**Total of 469**  
Members



**7**  
PhD holders  
**10**  
Masters holders  
**26**  
General Degree holders




Assoc Prof Lim Tit Meng, Chief Executive, Science Centre Board, posing with a graduate at KidsSTOP™ Academy's Graduation Ceremony



Happy graduates of KidsSTOP™ Academy 2018 with Assoc Prof Lim Tit Meng, Chief Executive, Science Centre Board

## One Kind Of Science Musical

 28 Sep - 6 Oct 2018

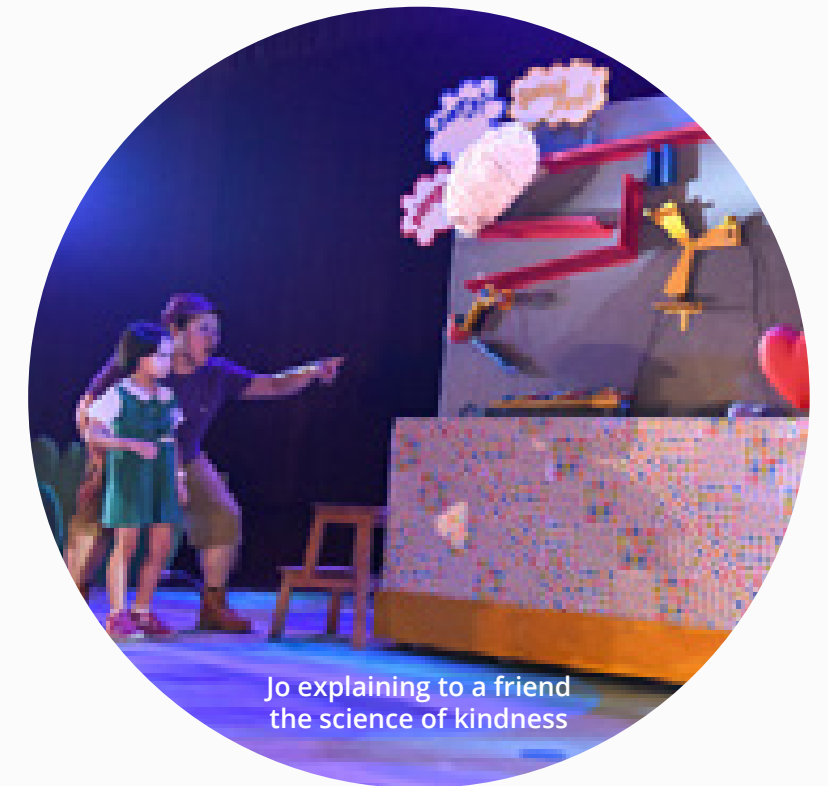
KidsSTOP™ and Singapore Kindness Movement presented a Children's Day special - One Kind of Science Musical produced by Players Theatre.

The KidsSTOP™ mascots and the Kindness Cubbies head outdoors for an adventure of their lifetime - with tents and camping rhymes! Through 12 shows, a total of 5,000 pre-schoolers enjoyed songs, dance and a mystery in this specially produced musical as they discovered more about their brain and heart, in deciding to be kind.

As part of the experience, audiences also enjoyed a series of hands-on activities as they learnt how to be kind to the environment.



The KidsSTOP™ founders looking excited for their camping trip!



Jo explaining to a friend the science of kindness



The Kindness Cubbies save the day!



The Kindness Cubbies checks on the Compassion Tower and it is shining bright!





Jo, Pepper and Miss Train Conductor having a sing along with pre-schoolers



## KidsSTOP™ Comes To You! (A KidsSTOP™ Outreach Programme)

The KidsSTOP™ Outreach Programme aims to spark young children's interest in STEM through play, music and dance. Making sense of the scientific world through our interactive drama and inquiry-based activities, this programme is curated for children aged 8 years and below. It is delivered directly at the pre-schools.

The programme includes a 15-min performance by KidsSTOP™ founders and a 20-min hands-on activity, helping young children to understand complex concepts through bite-sized learning with the mascots of KidsSTOP™!



Reached out to  
**1,200 children**



**18**  
Bookings

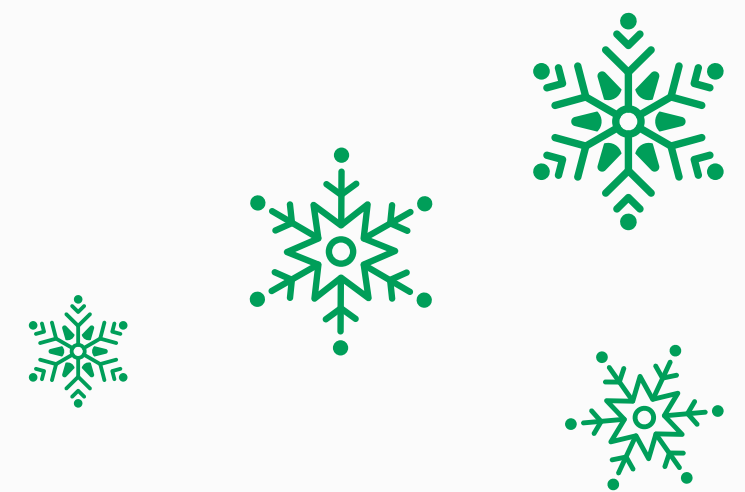


# SNOW CITY

Snow City continues to be popular with interesting and new activities to attract locals and tourists alike.

As part of Christmas festivities, Snow City introduced the Hansel and Gretel's Winter Adventure in December 2018, complete with storytelling sessions, a candy house and Meet and Greet sessions with mascots. To further publicise the event and inform the public of the newly launched Snow City online ticketing system as well, guests who booked tickets online enjoyed a \$2 discount on their admission. A total of 1,467 tickets was sold during the year-end holidays.

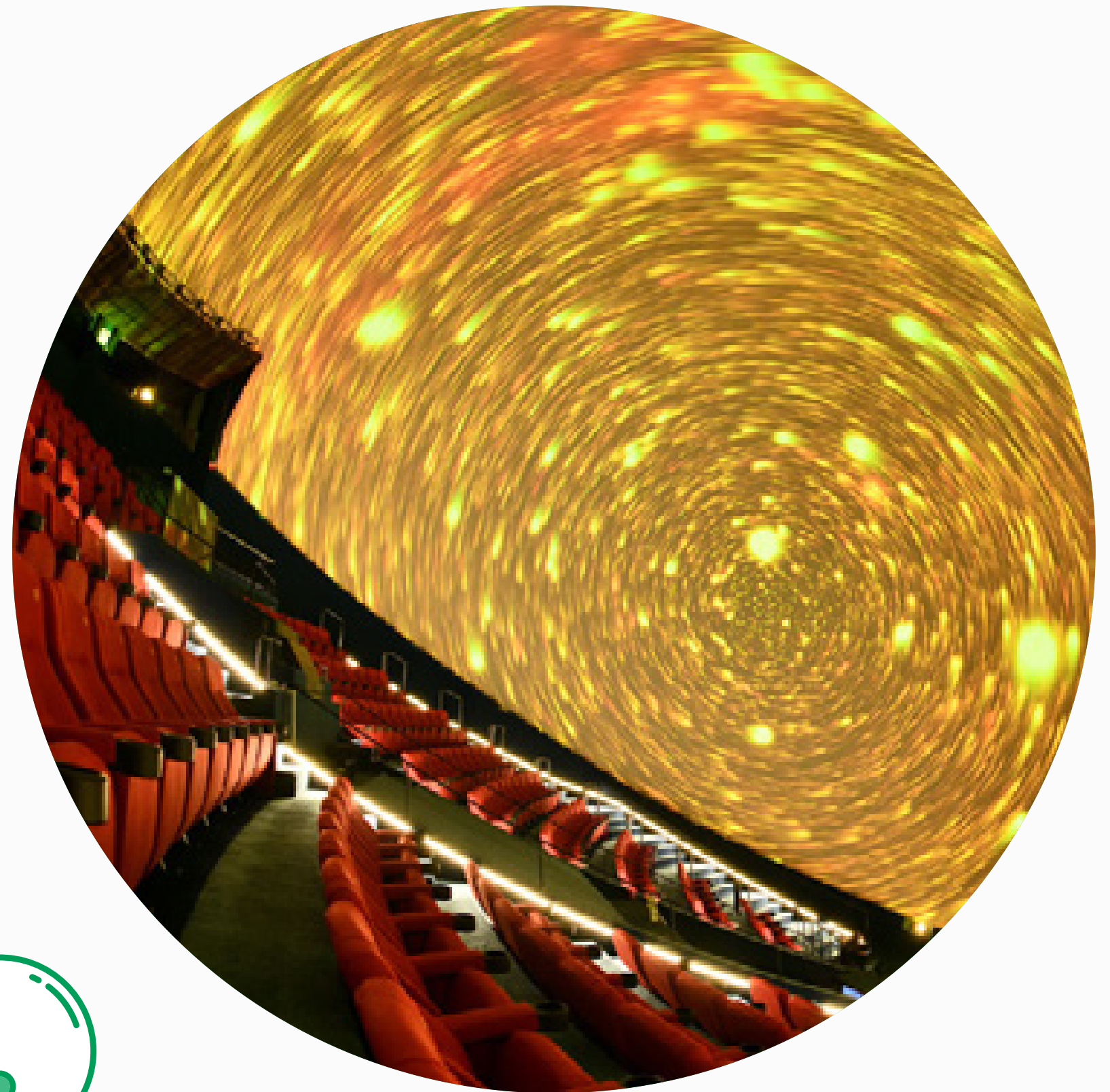
In January 2019, Snow City launched new enrichment programmes for children to learn about their environment and themselves while in a sub-zero climate. A total of six new programmes was added to the current five – these include Fun with Snowman, Dancing Lights and Coloured Ice, What a Pollution, The Arctic Avengers, Ice Fishing, and Whose House Is It. These new programmes were developed to help pre-schoolers develop inquisitive and creative minds, while also instilling in them values and learning outcomes appropriate with the school curriculum. Since its commencement, it has been well received by the preschool sector.



# OMNI-THEATRE

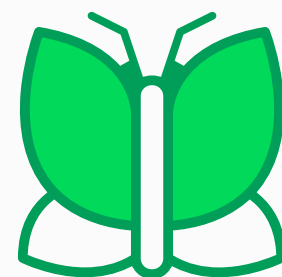
The ever-popular Omni-Theatre delivers a distinctly immersive experience with a choice of digital full-dome movies or live planetarium shows with topical, real-time presentations on space science conducted by our science educators. The new planetarium shows introduced in 2018 included “Exploring New Worlds”, “Climate Change” and “What’s Up There - Christmas Edition”.

The real-time, 8K-resolution presentations brought guests on an amazing cosmic journey, not possible anywhere else in Singapore. In addition, we celebrated space science with special programming on International Asteroid Day and World Space Week to much enjoyment by the young and old.



# BUTTERFLIES UP-CLOSE

The Butterflies Up-Close exhibition has been well-received by students and the general public since its inception in 2016. Our indoor enclosure allows guests to experience a wonderful journey through the stages of a butterfly's metamorphosis; where they get to learn fun facts as they enjoy rare close-up views of various butterfly species. In 2018, seasonal highlights such as the Great Orange Tip and Malay Lacewing delighted everyone with their vibrant colours, with many photos making their way into social media circles!



# COMMUNITY & PARTNERS

- > **Volunteer Programme**
- > **List of Sponsors**
- > **Sponsorship Fund**
- > **Distinguished Guests**
- > **Sub-Board Committees**
- > **Project Committees**





# VOLUNTEER PROGRAMME

The Centre welcomed a total intake of 141 new volunteers from all walks of life who contributed 3,800 hours of service in floor engagement and activity interaction in 2018. Student volunteers showcased simple science experiments at their activity booths in our Galleries and even at Event Booths from time to time, which helped crystalized difficult science concepts for guests. These efforts greatly enhanced the experience of our guests.

As a special tribute, we acknowledge Mr So Hon Fatt's contributions to the Centre and congratulate him on receiving "Volunteer of the Year 2018" from RSVP.

All in all, our volunteers at the Centre had contributed tremendously to the guests' experience and the various staff teams are very grateful for their kind efforts.



Mr So Hon Fatt receiving "Volunteer of the Year 2018" award from Mr Koh Juay Meng, Chairman of RSVP Singapore and Ms Grace Fu, Minister for Culture, Community and Youth.



## Year 2018



**141**  
New volunteers



**3,800 hours**  
In total

## Retired & Senior Volunteer Programme (RSVP)



**24**  
Senior volunteers



**1,636**  
Volunteered hours

## Observatory Volunteers



**Served more than 4,000 guests**  
Within 4 hours at the "Once in a Blue Moon" Lunar Eclipse event



**332**  
Volunteered hours  
(including regular Friday Observatory Sessions)



# LIST OF SPONSORS

1. ABB Pte Ltd
2. Abbott Laboratories (Singapore) Pte Ltd
3. Agency for Science, Technology & Research
4. Amgen Foundation
5. Asia Pacific Centre of Management Education
6. Autodesk Asia Pte Ltd
7. Chevron Singapore Pte Ltd
8. Cognizant Technology Solutions Asia Pacific Pte Ltd
9. Defence Science & Technology Agency
10. DSO National Laboratories
11. Earth Observatory of Singapore
12. Education Development Center, Inc
13. ExxonMobil Asia Pacific Pte Ltd
14. Health Promotion Board
15. Lifelong Learning Institute Pte Ltd
16. National Heritage Board Museum Roundtable
17. National Research Foundation
18. NUS, Centre for Quantum Technologies
19. NUS, SERIS [Solar Energy Research Institute of Singapore]
20. Pilot Pen (S) Pte Ltd
21. Shell Eastern Petroleum Pte Ltd
22. Singapore Pools (Private) Limited
23. Singapore Totalisator Board
24. Singapore Technologies Endowment Programme
25. Singapore Telecommunications Ltd

# SPONSORSHIP FUND

## Including contributions in-kind:

Mitsui Chemicals Asia Pacific, Ltd  
Panasonic System Solutions Asia Pacific  
SG Tooling Pte Ltd



# DISTINGUISHED GUESTS

## 2018

### Apr

#### Joohan Kim

##### President

Daegu National Science Museum, Korea  
Potential Collaboration with Science Centre Singapore

#### Encik Awangku Merali

##### Principal Assistant Secretary

Education Division, Ministry of Education, Science and Technological Research Sarawak

Learning Journey – Educational Programmes

**Delegation from Daegu National Science Museum, Korea**

### Aug

Visit from Sarawak Delegation on Possible Consultancy by Science Centre Singapore

#### Puan Rakayah bt Madon

##### Director of Education Sarawak

### Sep

#### Dr Chen Hsuch Yu

##### Director-General

(National Taiwan Science Education Center, Taiwan)

## 2019

#### Dato Sri Michael Manyin anak Jawong

##### Minister for Education

Science and Technological Research Sarawak

#### Dr Annuar bin Rapae

##### Assistant Minister for Education

Science and Technological Research Sarawak

#### Professor Abdul Rahman Deen

##### Deputy Permanent Secretary

Ministry of Education, Science and Technological Research Sarawak

### Nov

Learning Journey – Exhibitions and Programmes

#### Minister Ong Ye Kung

##### Minister for Education

Ministry of Education

### Feb

Learning Journey – Singapore Science Centre Global

**Delegation led by Mayor of Kaga City, Japan**

# SUB-BOARD COMMITTEES

## Executive Committee

**Chairman:** Tan Yen Yen  
**Members:** Soh Gim Teik  
 Shirley Wong  
 Sin Kim Ho  
 Hian Goh  
 Chandran Nair

## Audit & Risk Management Committee

**Chairman:** Soh Gim Teik  
**Members :** Bruce Poh  
 Cheong Chee Hoo  
 Leonie Lee  
 Hwang Yu-Ning  
 Sin Kim Ho

## Projects Financing & Investment Committee

**Chairman:** Hian Goh  
**Members:** Chew Kwee San  
 Cherie Nursalim  
 Howie Lau  
 Chang Chee Pey  
 Yasmin Zahid

## Advancement Committee

**Chairman:** Shirley Wong  
**Members :** Chew Kwee San  
 Chandran Nair  
 Cherie Nursalim  
 Howie Lau  
 Prof Ng Huck Hui



# PROJECT COMMITTEES

1. A\*STAR Talent Search 2018 Awards Committee
2. Singapore Science & Engineering Fair 2018 Working Committee
3. Singapore Science Festival 2018 Working Committee
4. Science Buskers Festival 2018 Advisory Committee
5. Sony Creative Science Award 2018 Organising Committee
6. National Science Challenge 2018 Review Committee
7. National Science Challenge 2018 Working & Science Content Committee
8. Energy Innovation Challenge 2018 Working Committee
9. SAYES 2018 EXCO
10. International Science Drama Competition Steering Committee

## Conflict of Interest Policy

The Science Centre Board has implemented a conflict of interest policy that covers both the Board members and the staff. The document procedures require the Board members and staff to make a declaration of potential or actual conflicts of interest at the start of their term of office or at the start of their employment of service respectively. Thereafter, Board members are required to provide updates whenever there are changes to the original declaration, while staff are required to make such declarations annually.

Reserves policy is not applicable as funds received are used for their intended purposes.



# FINANCIAL STATEMENT





## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

*(Established under the Science Centre Act, Cap. 286)*

### ANNUAL REPORT

*For the financial year ended 31 March 2019*

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

*(Established under the Science Centre Act, Cap. 286)*

### ANNUAL REPORT

*For the financial year ended 31 March 2019*

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## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

### STATEMENT BY DIRECTORS

For the financial year ended 31 March 2019

In the opinion of Science Centre Board (the "Board"),

- (a) the consolidated financial statements of the Group as set out on pages 7 to 63 are drawn up so as to present fairly, in all material respects, the financial position of the Board and of the Group as at 31 March 2019, and the financial performance of the business, changes in capital, funds and accumulated surplus of the Board and of the Group and cash flows of the Group for the financial year then ended; and
- (b) proper accounting and other records have been kept, including records of all assets of the Group whether purchased, donated or otherwise have been kept in accordance with the provisions of the Public Sector (Governance) Act 2018, Act 5 of 2018 (the PSG Act) and the Science Centre Act, Cap. 286 (the Act); and
- (c) the receipts, expenditure, investment of moneys and the acquisition and disposal of assets by the Board during the financial year have been made in accordance with the provisions of the PSG Act and the provisions of the Act.

On behalf of the Board



Ms Tan Yen Yen  
Chairman



Associate Professor Lim Tit Meng  
Chief Executive

20 June 2019



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15 Raffles Quay #23-00  
Hong Leong Building  
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Fax +65 6225 0964  
Internet www.kpmg.com.sg

### Independent auditors' report

Science Centre Board and its Subsidiaries

### Report on the audit of the financial statements

#### Opinion

We have audited the financial statements of Science Centre Board (the Board) and its subsidiaries (the Group), which comprise the consolidated balance sheet of the Group and the balance sheet of the Board as at 31 March 2019, the statements of comprehensive income, and statements of changes in capital, funds and accumulated surplus of the Group and the Board and the consolidated statement of cash flows of the Group for the year then ended, and notes to the financial statements, including a summary of accounting policies, as set out on pages 7 to 63.

In our opinion, the accompanying consolidated financial statements of the Group and the balance sheet, statement of comprehensive income, statement of changes in capital, funds and accumulated surplus of the Board are properly drawn up in accordance with the provisions of the Public Sector (Governance) Act 2018, Act 5 of 2018 (the PSG Act), the Science Centre Act, Cap. 286 (the Act) and Statutory Board Financial Reporting Standards (SB-FRS) so as to present fairly, in all material respects the state of affairs of the Group and the Board as at 31 March 2019 and the results and changes in equity of the Group and the Board and cash flows of the Group for the year ended on that date.

#### Basis for opinion

We conducted our audit in accordance with Singapore Standards on Auditing (SSAs). Our responsibilities under those standards are further described in the 'Auditors' responsibilities for the audit of the financial statements' section of our report. We are independent of the Group and the Board in accordance with the Accounting and Corporate Regulatory Authority Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities (ACRA Code) together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### Other information

Management is responsible for the other information contained in the annual report. Other information is defined as all information in the annual report other than the financial statements and our auditors' report thereon.

KPMG LLP (Registration No. T06110001), an accounting limited liability partnership registered in Singapore under the Limited Liability Partnership Act (Chapter 162A) and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.



We have obtained the Statement by the Board of the Science Centre Board, prior to the date of this auditors' report.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information obtained prior to the date of this auditors' report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

*Responsibilities of management and the Board of Directors for the financial statements*

Management is responsible for the preparation and fair presentation of the financial statements in accordance with the PSG Act, the provisions of the Act and SB-FRS, and for such internal control as management determines is necessary to enable preparation of financial statements that are free from material misstatement, whether due to fraud or error.

A statutory board is constituted based on its Act and its dissolution requires Parliament's approval. In preparing the financial statements, management is responsible for assessing the Board's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless there is intention to wind up the Board or for the Board to cease operations.

The Board of Directors is responsible for overseeing the Group's financial reporting process.

*Auditors' responsibilities for the audit of the financial statements*

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SSAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:



- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- Obtain an understanding of internal controls relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal controls.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Audit Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal controls that we identify during our audit.



## Report on Other Legal and Regulatory Requirements

### Opinion

#### In our opinion:

- (a) the receipts, expenditure, investment of moneys and the acquisition and disposal of assets by the Board during the year are, in all material respects, in accordance with the provisions of the Act; and
- (b) proper accounting and other records have been kept, including records of all assets of the Board and of those subsidiaries incorporated in Singapore of which we are the auditors whether purchased, donated or otherwise.

#### Basis for opinion

We conducted our audit in accordance with SSAs. Our responsibilities under those standards are further described in the 'Auditors' responsibilities for the compliance audit' section of our report. We are independent of the Board in accordance with the ACRA Code together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on management's compliance.

#### Responsibilities of management for compliance with legal and regulatory requirements

Management is responsible for ensuring that the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Act, the Act and the requirements of any other written law applicable to moneys or managed by the Board. This responsibility includes monitoring related compliance requirements relevant to the Board, and implementing internal controls as management determines are necessary to enable compliance with the requirements.

#### Auditors' responsibilities for the compliance audit

Our responsibility is to express an opinion on management's compliance based on our audit of the financial statements. We planned and performed the compliance audit to obtain reasonable assurance about whether the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the PSG Act, the Act and the requirements of any other written law applicable to moneys or managed by the Board.



Our compliance audit includes obtaining an understanding of the internal control relevant to the receipts, expenditure, investment of moneys and the acquisition and disposal of assets; and assessing the risks of material misstatement of the financial statements from non-compliance, if any, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control. Because of the inherent limitations in any internal control system, non-compliances may nevertheless occur and not be detected.

KPMG LLP  
Public Accountants and  
Chartered Accountants

Singapore  
20 June 2019

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

STATEMENT OF COMPREHENSIVE INCOME  
For the financial year ended 31 March 2019

GROUP	Note	General Funds		Restricted Funds		Total	
		2019	2018	2019	2018	2019	2018
		\$	\$	\$	\$	\$	\$
<b>Income</b>							
- Admission fees		4,968,871	4,991,958	--	--	4,968,871	4,991,958
- Proceeds from special projects		474,249	562,505	--	--	474,249	562,505
- Fees from courses and programmes		1,503,915	1,158,554	--	--	1,503,915	1,158,554
- Collections from exhibits and events		227,873	704,358	--	--	227,873	704,358
- Sales of merchandise and publications		838,327	998,260	--	--	838,327	998,260
- Service income		145,987	669,277	--	--	145,987	669,277
- Rental income		231,898	73,142	--	--	231,898	73,142
- Photo-taking income		185,233	169,489	--	--	185,233	169,489
		<u>8,875,644</u>	<u>9,327,521</u>	<u>--</u>	<u>--</u>	<u>8,875,644</u>	<u>9,327,521</u>
Other income	4	2,151,908	2,082,082	887,023	1,048,222	3,038,929	3,130,284
Other (losses)/gains - net	5	(12,418)	(488)	82,898	88,823	40,178	88,315
<b>Expenses</b>							
- Employee compensation	6	(21,829,818)	(20,705,012)	(46,801)	(240,122)	(21,876,819)	(20,945,134)
- Materials for exhibits and events		(7,396,891)	(9,403,795)	(828,078)	(946,482)	(7,922,829)	(9,950,287)
- Repairs and maintenance		(8,606,595)	(5,311,479)	(29,893)	(13,276)	(8,636,478)	(8,324,755)
- Publicity and promotions		(3,829,866)	(2,999,997)	(27,519)	(19,131)	(3,857,385)	(2,989,128)
- Depreciation	16	(3,826,747)	(3,770,277)	(9,728)	(4,800)	(3,836,475)	(3,774,877)
- Other expenditure	7	(3,890,484)	(4,199,647)	(160,489)	(172,698)	(3,760,913)	(4,371,345)
- Finance expenses	8	--	(1,892)	--	--	--	(1,892)
		<u>(48,269,541)</u>	<u>(46,301,587)</u>	<u>(808,268)</u>	<u>(996,318)</u>	<u>(49,078,307)</u>	<u>(47,907,400)</u>
(Deficit)/surplus before grants		(34,853,898)	(35,591,982)	166,363	140,708	(34,687,535)	(35,411,278)
Operating grants from government	17	31,874,823	32,300,562	--	--	31,874,823	32,300,562
Grants from other government agencies	11	1,898,837	3,099,458	--	--	1,898,837	3,099,458
Deferred capital grants amortised	21	1,218,824	1,233,855	9,728	4,800	1,228,552	1,238,655
		<u>34,298,384</u>	<u>36,633,875</u>	<u>9,728</u>	<u>4,800</u>	<u>34,308,112</u>	<u>36,538,475</u>
(Deficit)/surplus before tax		(265,529)	581,893	116,879	145,308	(163,448)	1,127,199
Income tax credit	9	13,738	4,474	--	--	13,738	4,474
Net (deficit)/surplus and total comprehensive income		<u>(248,791)</u>	<u>586,367</u>	<u>116,879</u>	<u>145,308</u>	<u>(149,710)</u>	<u>1,131,673</u>

The accompanying notes form an integral part of these financial statements.

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

STATEMENT OF COMPREHENSIVE INCOME  
For the financial year ended 31 March 2019

BOARD	Note	General Funds		Restricted Funds		Total	
		2019	2018	2019	2018	2019	2018
		\$	\$	\$	\$	\$	\$
<b>Income</b>							
- Admission fees		4,082,448	4,022,018	--	--	4,082,448	4,022,018
- Proceeds from special projects		476,580	565,083	--	--	476,580	565,083
- Fees from courses and programmes		1,047,284	778,153	--	--	1,047,284	778,153
- Collections from exhibits and events		227,873	711,250	--	--	227,873	711,250
- Sales of merchandise and publications		776,374	787,172	--	--	776,374	787,172
- Service income		39,797	26,549	--	--	39,797	26,549
		<u>8,620,354</u>	<u>6,889,734</u>	<u>--</u>	<u>--</u>	<u>8,620,354</u>	<u>6,889,734</u>
Other income	4	2,118,875	2,085,641	887,023	1,048,222	3,076,898	3,133,883
Other (losses)/gains - net	5	(9,098)	(488)	82,898	88,823	43,498	88,315
<b>Expenses</b>							
- Employee compensation	6	(20,273,478)	(19,351,158)	(46,801)	(240,122)	(20,319,479)	(19,591,280)
- Materials for exhibits and events		(7,279,888)	(9,391,365)	(828,078)	(946,482)	(7,808,737)	(9,950,937)
- Repairs and maintenance		(8,829,773)	(5,736,250)	(29,893)	(13,276)	(8,859,666)	(8,748,026)
- Publicity and promotions		(2,876,947)	(2,378,894)	(27,519)	(19,131)	(2,912,168)	(2,398,025)
- Depreciation	16	(3,282,539)	(3,351,035)	(9,728)	(4,800)	(3,292,267)	(3,356,835)
- Other expenditure	7	(3,284,840)	(4,099,347)	(160,489)	(172,698)	(3,447,299)	(4,241,945)
- Finance expenses	8	--	(1,892)	--	--	--	(1,892)
		<u>(43,897,128)</u>	<u>(44,279,617)</u>	<u>(808,268)</u>	<u>(1,052,394)</u>	<u>(43,858,392)</u>	<u>(45,333,230)</u>
(Deficit)/surplus before grants		(34,266,994)	(35,304,950)	166,363	84,831	(34,168,442)	(35,220,324)
Operating grants from government	17	31,874,823	32,300,562	--	--	31,874,823	32,300,562
Grants from other government agencies	11	1,898,433	3,079,340	--	--	1,898,433	3,079,340
Deferred capital grants amortised	21	1,188,867	1,201,335	9,728	4,800	1,198,595	1,206,935
		<u>34,249,323</u>	<u>36,479,127</u>	<u>9,728</u>	<u>4,800</u>	<u>34,259,049</u>	<u>36,482,717</u>
Net (deficit)/surplus and total comprehensive income		<u>(17,872)</u>	<u>1,173,172</u>	<u>116,879</u>	<u>89,231</u>	<u>82,407</u>	<u>1,262,403</u>

The accompanying notes form an integral part of these financial statements.

**SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES**
**BALANCE SHEETS**
*As at 31 March 2019*

	Note	Group		Board	
		2019 \$	2018 \$	2019 \$	2018 \$
<b>ASSETS</b>					
<b>Current assets</b>					
Cash and cash equivalents	10	28,248,848	28,824,038	29,618,122	27,947,422
Trade and other receivables	11	1,937,438	3,424,059	1,867,819	3,452,283
Financial asset at fair value through profit or loss	12	4,370,401	4,317,805	4,370,401	4,317,805
Inventories	14	343,881	397,173	87,884	168,579
		<u>34,900,568</u>	<u>36,963,075</u>	<u>35,944,226</u>	<u>35,896,089</u>
<b>Non-current assets</b>					
Other investment	13	1,018,000	1,018,000	1,018,000	1,018,000
Investments in subsidiaries	15	-	-	1,780,002	1,780,002
Property, plant and equipment	16	21,798,900	22,628,747	22,854,841	21,878,734
		<u>22,726,900</u>	<u>23,646,747</u>	<u>23,732,843</u>	<u>24,354,736</u>
<b>Total assets</b>		<u>57,627,468</u>	<u>60,609,732</u>	<u>59,677,069</u>	<u>60,240,825</u>
<b>LIABILITIES</b>					
<b>Current liabilities</b>					
Government grants received in advance	17	9,974,719	11,204,228	9,974,719	11,204,228
Other government grants received in advance	11	770,343	1,060,216	770,343	1,060,216
Sponsorship received in advance	18	2,158,300	782,158	2,158,300	782,158
Trade and other payables	19	5,850,774	4,941,057	5,912,963	4,873,950
		<u>18,754,136</u>	<u>18,987,659</u>	<u>18,816,325</u>	<u>18,920,552</u>
<b>Non-current liabilities</b>					
Other payables		-	25,407	-	-
Deferred income tax liabilities	20	37,190	48,293	-	-
Deferred capital grants	21	14,932,183	15,115,822	14,878,550	15,027,412
		<u>14,969,373</u>	<u>15,190,522</u>	<u>14,878,550</u>	<u>15,027,412</u>
<b>Total liabilities</b>		<u>33,723,509</u>	<u>34,284,402</u>	<u>33,694,875</u>	<u>34,007,964</u>
<b>NET ASSETS</b>		<u>23,903,959</u>	<u>26,325,330</u>	<u>25,982,194</u>	<u>26,232,861</u>
<b>CAPITAL, FUNDS AND ACCUMULATED SURPLUS</b>					
Capital account	22	2,979,883	2,979,883	2,979,883	2,979,883
Share capital	23	9,989,432	7,989,330	9,989,432	7,989,330
Omni-theatre development fund	25	122,780	122,780	122,780	122,780
<b>Accumulated surplus:</b>					
General funds		6,088,482	6,600,269	5,749,983	7,029,655
Restricted funds	24	7,770,212	7,660,133	7,601,198	7,491,117
<b>Total capital, funds and accumulated surplus</b>		<u>23,903,959</u>	<u>26,325,330</u>	<u>25,982,194</u>	<u>26,232,861</u>

*The accompanying notes form an integral part of these financial statements.*
**SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES**
**STATEMENTS OF CHANGES IN CAPITAL, FUNDS AND ACCUMULATED SURPLUS**
*For the financial year ended 31 March 2019*

	Capital account \$	Share capital \$	Omni-theatre development fund \$	Accumulated surplus		Total \$
				General funds \$	Restricted funds \$	
<b>GROUP</b>						
<b>2018</b>						
Beginning of financial year	2,979,883	7,989,330	122,780	6,600,269	7,660,133	25,322,495
Issue of new shares (Note 23)	-	2,030,102	-	-	-	2,030,102
Total comprehensive (loss)/income	-	-	-	(349,787)	110,079	(139,708)
Dividends paid	-	-	-	(1,262,000)	-	(1,262,000)
<b>End of financial year</b>	<u>2,979,883</u>	<u>9,989,432</u>	<u>122,780</u>	<u>6,088,482</u>	<u>7,770,212</u>	<u>25,950,889</u>
<b>2019</b>						
Beginning of financial year	2,979,883	6,660,710	122,780	6,084,902	7,614,827	23,662,302
Issue of new shares (Note 23)	-	989,620	-	-	-	989,620
Total comprehensive income	-	-	-	988,367	145,308	1,133,675
Dividends paid	-	-	-	(451,000)	-	(451,000)
<b>End of financial year</b>	<u>2,979,883</u>	<u>7,650,330</u>	<u>122,780</u>	<u>6,600,269</u>	<u>7,860,133</u>	<u>25,322,495</u>

*The accompanying notes form an integral part of these financial statements.*

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

STATEMENTS OF CHANGES IN CAPITAL, FUNDS AND ACCUMULATED SURPLUS  
For the financial year ended 31 March 2019

	Capital account \$	Share capital \$	Omni- Theatre development fund \$	Accumulated surplus		
				General funds \$	Restricted funds \$	Total \$
<b>BOARD</b>						
<b>2019</b>						
Beginning of financial year	2,979,993	7,959,330	122,790	7,029,655	7,491,117	25,582,885
Issue of new shares (Note 23)	-	2,000,102	-	-	-	2,000,102
Total comprehensive (loss)/income	-	-	-	(17,672)	160,079	92,407
Dividends paid	-	-	-	(1,262,000)	-	(1,262,000)
End of financial year	2,979,993	9,959,432	122,790	5,749,983	7,651,196	26,442,374
<b>2018</b>						
Beginning of financial year	2,979,993	6,969,710	122,790	6,307,683	7,401,899	23,781,842
Issue of new shares (Note 23)	-	999,620	-	-	-	999,620
Total comprehensive income	-	-	-	1,173,172	89,291	1,262,463
Dividends paid	-	-	-	(451,000)	-	(451,000)
End of financial year	2,979,993	7,969,330	122,790	7,029,655	7,491,117	25,582,885

The accompanying notes form an integral part of these financial statements.

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENT OF CASH FLOWS  
For the financial year ended 31 March 2019

	Note	2019 \$	2018 \$
<b>Cash flows from operating activities</b>			
Deficit before grants		(34,453,596)	(35,411,270)
Adjustments for:			
- Depreciation	16	3,636,473	3,774,877
- Loss on disposal of property, plant and equipment		2,209	6,254
- Sponsorships and donations	4	(764,874)	(969,541)
- Fair value gain on financial asset at fair value through profit or loss	9	(52,599)	(98,800)
- Interest income	4	(346,139)	(266,550)
		(22,929,383)	(32,884,760)
Change in working capital			
- Inventories		53,582	178,577
- Trade and other receivables		2,141,235	(1,838,495)
- Trade and other payables		887,219	(2,025,458)
Cash used in operations		(28,927,299)	(36,401,143)
Income tax refunded/paid		2,635	(10,292)
Net cash used in operating activities		(28,924,631)	(36,411,432)
<b>Cash flows from investing activities</b>			
Purchases of property, plant and equipment	10	(2,715,935)	(1,279,179)
Placement of short-term bank deposits		(1,900,000)	-
Proceeds upon maturity of held-to-maturity financial assets		-	1,002,500
Interest received		346,139	200,280
Net cash used in investing activities		(3,269,796)	(10,080)
<b>Cash flows from financing activities</b>			
Government grants received	17	29,848,418	33,326,731
Sponsorship received		2,104,128	988,874
Other government grants received		279,965	6,399,952
Excess other government grants refunded	11	(81,274)	(180,103)
Excess sponsorship refunded		-	(193,000)
Issuance of share capital	23	2,000,102	999,620
Dividends paid		(1,262,000)	(451,000)
Net cash generated from financing activities		32,918,337	40,901,074
<b>Net increase in cash and cash equivalents</b>		623,910	4,479,242
Cash and cash equivalents at beginning of financial year		27,824,938	23,145,696
Cash and cash equivalents at end of financial year	10	28,248,848	27,624,938

The accompanying notes form an integral part of these financial statements.

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

### NOTES TO THE FINANCIAL STATEMENTS For the financial year ended 31 March 2019

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These notes form an integral part of and should be read in conjunction with the accompanying financial statements.

The financial statements were authorized for issue by members of the Board on 20 June 2019.

#### 1. General information

Science Centre Board (the "Board") is a Statutory Board incorporated under the Science Centre Act (Cap. 268) under the purview of the Ministry of Education ("Government" or "MOE"). The registered office and principal place of business of the Board is 15 Science Centre Road, Singapore 609081.

The principal activities of the Board are to:

- (a) Promote interest, learning and creativity in science and technology through imaginative and enjoyable experience and contribute to the nation's development of its human resource;
- (b) Conduct supplementary science classes, lectures, demonstrations and workshops to complement the school science syllabi;
- (c) Produce and publish scientific literature in the form of magazines and guidebooks;
- (d) Organise activities and programmes for targeted and general audiences so as to bring science closer to the people; and
- (e) Screen planetarium programmes and OMNIMAX films to students and the general public, using state-of-the-art audio-visual projection systems.

The principal activities of the subsidiaries are described in Note 15 to the financial statements.

#### 2. Significant accounting policies

##### 2.1 Basis of preparation

The financial statements have been prepared in accordance with Singapore Statutory Board Financial Reporting Standards ("SB-FRS"). The financial statements have been prepared under the historical cost convention, except as disclosed in the accounting policies below.

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

### NOTES TO THE FINANCIAL STATEMENTS For the financial year ended 31 March 2019

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#### 2. Significant accounting policies (continued)

##### 2.1 Basis of preparation (continued)

The preparation of financial statements in conformity with SB-FRS requires management to exercise its judgement in the process of applying the Group's accounting policies. It also requires the use of certain critical accounting estimates and assumptions. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements, are disclosed in Note 3.

##### *Interpretations and amendments to published standards effective in the financial year ended 31 March 2019*

The Group has applied the various new SB-FRSs and amendments to SB-FRSs for the first time for the annual period beginning on 1 April 2018. The effect of adopting these requirements is set out in Note 29 to these financial statements.

##### 2.2 Subsidiaries

Subsidiaries are entities over which the Group has power to govern the financial and operating policies so as to obtain benefits from its activities, generally accompanied by a shareholding giving rise to a majority of the voting rights. The existence and effect of potential voting rights that are currently exercisable or convertible are considered when assessing whether the Group controls another entity. Subsidiaries are consolidated from the date on which control is transferred to the Group. They are de-consolidated from the date on which control ceases.

In preparing the consolidated financial statements, transactions, balances and unrealised gains on transactions between group entities are eliminated. Unrealised losses are also eliminated but are considered an impairment indicator of the asset transferred.

##### 2.3 Revenue recognition

Revenue from sale of goods and services in the ordinary course of business is recognised when the Group satisfies a performance obligation ("PO") by transferring control of a promised good or service to the customer. The amount of revenue recognised is the amount of the transaction price allocated to the satisfied PO.

The transaction price is allocated to each PO in the contract on the basis of the relative stand-alone selling prices of the promised goods or services. The individual stand-alone selling price of a good or service that has not previously been sold on a stand-alone basis, or has a highly variable selling price, is determined based on the residual portion of the transaction price after allocating the transaction price to goods and/or services with observable stand-alone selling prices. A discount or variable consideration is allocated to one or more, but not all, of the performance obligations if it relates specifically to those performance obligations.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

**2. Significant accounting policies (continued)****2.3 Revenue recognition (continued)**

Transaction price is the amount of consideration in the contract to which the Group expects to be entitled in exchange for transferring the promised goods or services. The transaction price may be fixed or variable and is adjusted for time value of money if the contract includes a significant financing component. Consideration payable to a customer is deducted from the transaction price if the Group does not receive a separate identifiable benefit from the customer. When consideration is variable, the estimated amount is included in the transaction price to the extent that it is highly probable that a significant reversal of the cumulative revenue will not occur when the uncertainty associated with the variable consideration is resolved.

Revenue may be recognised at a point in time or over time following the timing of satisfaction of the PO as follows:

**(a) Admission fees**

Admission fees are recognised upon the sale of admission tickets to visitors and members. Where such tickets are sold via agents, revenue is recognised at the point of sale unless the difference from recognising revenue over the validity period of the tickets is expected to be material, in which case, an adjustment is made to recognise revenue over the validity period of the tickets.

**(b) Proceeds from special projects**

Proceeds from special projects are income from the organisation of temporary exhibitions. Income from such projects is recognised upon the sale of tickets to visitors.

**(c) Fees from courses and programmes**

Fees from courses and programmes are recognised over the duration of the courses and programmes.

**(d) Collections from exhibits and events**

Collections from exhibits and events comprise mainly of collections from rental of travelling exhibitions and events and are recognised on a straight-line basis over the rental period.

**(e) Sales of merchandise and publications**

Sales of merchandise and publications are recognised at the point of sales of the merchandise and publications.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

**2. Significant accounting policies (continued)****2.3 Revenue recognition (continued)****(f) Service income**

Service income from provision of services for set up of travelling exhibitions and organisation of corporate events are recognised when services have been rendered.

**(g) Photo-taking**

Income from photo-taking is recognised upon the sale of photos to visitors and members.

**2.4 Other income****(a) Donations and sponsorships**

Donations and sponsorships are received or receivables to meet approved expenditure for specific projects or purposes. Donations and sponsorships are recognised in profit or loss as income in the financial year when the expenditure for the specified projects or purposes is incurred. The amount that is not utilised for the specific projects or purposes is included in the sponsorship received in advance account.

**(b) Rental income**

Rental income from operating leases (net of any incentives given to the lessees) is recognised on a straight-line basis over the lease term.

**(c) Interest income**

Interest income is recognised using the effective interest method.

**(d) Management fee**

Management fee for the provision of services to government agencies is recognised over the period the services are rendered.

**2.5 Government grants**

Grants from the Ministry of Education are recognised as a receivable at their fair value when there is reasonable assurance that the grants will be received and the Group will comply with all the conditions associated with the grant.

Government grants receivable are recognised as income over the periods necessary to match them with the related expenses which they are intended to compensate, on a systematic basis. Government grants that are receivable as reimbursement for expenses already incurred are recognised in profit or loss in the period in which they become receivable.



## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

**2. Significant accounting policies (continued)****2.6 Deferred capital grants**

Government grants and contributions from other government organisations utilised for the purchase or construction of depreciable assets are recorded in the deferred capital grants account (shown as liability on the balance sheet).

Government grants whose primary condition is that the Group should purchase, construct or otherwise acquire non-current assets are recognised as deferred capital grants in the balance sheet and transferred to profit or loss over the useful lives of the related assets.

On the disposal of property, plant and equipment, the balance of the related grants is recognised in profit or loss to match the net book value of property, plant and equipment disposed.

**2.7 Employee compensation****(a) Defined contribution plans**

A defined contribution plan is a post-employment benefit plan under which the Group pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an employee benefit expense in profit or loss in the periods during which services are rendered by employees.

**(b) Employee leave entitlement**

Employee entitlements to annual leave are recognised when they accrue to employees. A provision is made for the estimated liability for annual leave as a result of services rendered by employees up to the balance sheet date.

**(c) Short-term employee benefits**

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided. A liability is recognised for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

**2. Significant accounting policies (continued)****2.8 Sponsorship Fund**

The Sponsorship Fund is set up to account for contributions received from private organisations and individuals for specified purposes. The Sponsorship Fund has been conferred the Institute of Public Character status under Section 37(2)(c) of the Charities Act since 1 April 2008. The income from the Sponsorship Fund will be used to further the objectives of the Sponsorship Fund. The principal sums of the Sponsorship Fund are presented separately in the balance sheet. The Sponsorship Fund is classified as a restricted fund in accordance with SB-FRS Guidance Note 3.

**2.9 Endowment Fund**

The Endowment Fund is set up to account for contributions received from private organisations, individuals and other government agencies for specified purposes. The Endowment Fund was conferred the Institute of Public Character status under Section 37(2)(c) of the Charities Act from 1 April 2008 to 31 March 2013. The income from the Endowment Fund will be used to further the objectives of the Science Centre Board and specific capacity training for staffs. The principal sums of the Endowment Fund are presented separately in the balance sheet. The Endowment Fund is classified as a restricted fund in accordance with SB-FRS Guidance Note 3.

**2.10 Omni-Theatre Development Fund**

The Omni-Theatre Development Fund was set up to account for contributions received from private organisations and individuals. The principal sums of the Omni-Theatre Development Fund, consisting of donations and sponsorships received, are kept intact. The Omni-Theatre Development fund is classified under general funds in accordance with SB-FRS Guidance Note 3.

**2.11 Finance costs**

The Group's finance income and finance costs include interest income and interest expense on borrowings.

Interest income or expense is recognised using the effective interest method. The 'effective interest rate' is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to the amortised cost of the financial liability. In calculating interest expense, the effective interest rate is applied to the amortised cost of the liability.

**2.12 Income taxes**

Tax expense comprises current and deferred tax. Current tax and deferred tax is recognised in profit or loss except to the extent that it relates to items recognised directly in equity or in other comprehensive income.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

**2. Significant accounting policies (continued)****2.12 Income taxes (continued)**

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years. The amount of current tax payable or receivable is the best estimate of the tax amount expected to be paid or received that reflects uncertainty related to income taxes, if any.

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognised for temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss.

The measurement of deferred taxes reflects the tax consequences that would follow the manner in which the Group expects, at the end of the reporting year, to recover or settle the carrying amount of its assets and liabilities. Deferred tax is measured at the tax rates that are expected to be applied to temporary differences when they reverse, based on the laws that have been enacted or substantively enacted by the reporting date.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised for unused tax losses, tax credits and deductible temporary differences, to the extent that it is probable that future taxable profits will be available against which they can be utilised. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

In determining the amount of current and deferred tax, the Group takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the year that such a determination is made.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

**2. Significant accounting policies (continued)****2.13 Inventories**

Inventories are measured at the lower of cost and net realisable value. Cost is based on weighted average cost formula, and includes expenditure incurred in acquiring the inventories and other costs incurred in bringing them to their existing location and condition.

Net realisable value is the estimated selling price in the ordinary course of business, less estimated costs of completion and estimated costs necessary to make the sale.

When inventories are sold, the carrying amount of those inventories is recognised as an expense in the period in which the related revenue is recognised. The amount of any allowance for write-down of inventories to net realisable value and all losses of inventories are recognised as an expense in the period the write-down or loss occurs. The amount of any reversal of any allowance for write-down of inventories, arising from an increase in net realisable value, is recognised as a reduction in the amount of inventories recognised as an expense in the period in which the reversal occurs.

**2.14 Property, plant and equipment****(a) Recognition and measurement**

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment losses.

**(b) Component of costs**

The cost of an item of property, plant and equipment initially recognised includes its purchase price, capitalised borrowing cost and any cost that is directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management.

Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives they are accounted for as separate items (major components) of plant and equipment.

Assets under construction are stated at cost, and comprise construction costs and development costs. Construction costs are recorded based on contract progress payments for certified works and services. Development costs include manpower costs and other construction overheads.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.14 Property, plant and equipment (continued)

## (c) Depreciation

Depreciation is based on the cost of an asset less its residual value. Significant components of individual assets are assessed and if a component has a useful life that is different from the remainder of that asset, that component is depreciated separately.

Depreciation is recognised as an expense in profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment unless it is included in the carrying amount of another asset.

Depreciation is recognised from the date that the property, plant and equipment are installed and are ready for use.

The estimated useful lives for the current and comparative years are as follows:

	Useful lives
Leasehold land	Over lease period of 99 years
Buildings	20 to 50 years
Leasehold improvements	5 years
Furniture and office equipment	3 to 5 years
Motor vehicles	10 years
OMNIMAX films	2 years

No depreciation is provided on assets under construction.

Depreciation methods, useful lives and residual values are reviewed at the end of each reporting period and adjusted as appropriate.

The following items are written off in the year of construction or purchase:

- Exhibits
- Films (other than OMNIMAX)
- Cost of publications and souvenirs
- Property, plant and equipment costing below \$2,000 each

## (d) Subsequent expenditure

The cost of replacing a component of an item of property, plant and equipment is recognised in the carrying amount of the item if it is probable that future economic benefits embodied within the component will flow to the Group and its cost can be measured reliably. The carrying amount of the replaced component is derecognised. The costs of the day-to-day servicing of property, plant and equipment are recognised in profit or loss as incurred.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.14 Property, plant and equipment (continued)

## (e) Disposal

On disposal of an item of property, plant and equipment, the difference between the disposal proceeds and its carrying amount is recognised in profit or loss within "Other losses/(gains) – net".

## 2.15 Investments in subsidiaries

Investments in subsidiaries are carried at cost less accumulated impairment losses in the Board's balance sheet. On disposal of investments in subsidiaries, the difference between disposal proceeds and the carrying amounts of the investments are recognised in profit or loss.

## 2.16 Impairment of non-financial assets

The carrying amounts of the Group's non-financial assets, other than inventories, are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, the assets' recoverable amounts are estimated. An impairment loss is recognised if the carrying amount of an asset exceeds its recoverable amount.

The recoverable amount of an asset is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets.

Impairment losses are recognised in profit or loss unless it reverses a previous revaluation, credited to equity, in which case it is charged to equity. Impairment losses are allocated to reduce the carrying amount of the assets (group of assets) on a pro rata basis.

Impairment losses recognised in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.17 Financial instruments

## (a) Recognition and initial measurement

**Non-derivative financial assets and financial liabilities**

Trade receivables are initially recognised when they are originated. All other financial assets and financial liabilities are initially recognised when the Group becomes a party to the contractual provisions of the instrument.

A financial asset (unless it is a trade receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at fair value through profit and loss ("FVTPL"), transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price.

## (b) Classification and subsequent measurement

**Non-derivative financial assets – Policy applicable from 1 April 2018**

On initial recognition, a financial asset is classified as measured at amortised cost.

Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

**Financial assets at FVTPL**

All financial assets not classified as measured at amortised cost as described above are measured at FVTPL. On initial recognition, the Group may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortised cost as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

**Financial assets at amortised cost**

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.17 Financial instruments (continued)

## (a) Recognition and initial measurement (continued)

**Business model assessment – Policy applicable from 1 April 2018**

The Group makes an assessment of the objective of the business model in which a financial asset is held at a portfolio level because this best reflects the way the business is managed and information is provided to management. The information considered includes:

- the stated policies and objectives for the portfolio and the operation of those policies in practice. These include whether management's strategy focuses on earning contractual interest income, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of any related liabilities or expected cash outflows or realising cash flows through the sale of the assets;
- how the performance of the portfolio is evaluated and reported to the Group's management;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and how those risks are managed;
- how managers of the business are compensated – e.g. whether compensation is based on the fair value of the assets managed or the contractual cash flows collected; and
- the frequency, volume and timing of sales of financial assets in prior periods, the reasons for such sales and expectations about future sales activity.

Transfers of financial assets to third parties in transactions that do not qualify for derecognition are not considered sales for this purpose, consistent with the Group's continuing recognition of the assets.

Financial assets that are held-for-trading or are managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

**Assessment whether contractual cash flows are solely payments of principal and interest – Policy applicable from 1 April 2018**

For the purposes of this assessment, "principal" is defined as the fair value of the financial asset on initial recognition. "Interest" is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as a profit margin.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.17 Financial instruments (continued)

## (b) Classification and subsequent measurement (continued)

In assessing whether the contractual cash flows are solely payments of principal and interest, the Group considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition.

A prepayment feature is consistent with the solely payments of principal and interest criterion if the prepayment amount substantially represents unpaid amounts of principal and interest on the principal amount outstanding, which may include reasonable additional compensation for early termination of the contract. Additionally, for a financial asset acquired at a significant discount or premium to its contractual par amount, a feature that permits or requires prepayment at an amount that substantially represents the contractual par amount plus accrued (but unpaid) contractual interest (which may also include reasonable additional compensation for early termination) is treated as consistent with this criterion if the fair value of the prepayment feature is insignificant at initial recognition.

**Non-derivative financial assets – Subsequent measurement and gains and losses – Policy applicable from 1 April 2018**

*Financial assets at FVTPL*

These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognised in profit or loss.

*Financial assets at amortised cost*

These assets are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognised in profit or loss. Any gain or loss on derecognition is recognised in profit or loss.

**Non-derivative financial assets – Policy applicable before 1 April 2018**

The Group classified its financial assets in the following categories: loans and receivables, fair value through profit or loss, and held-to-maturity. The classification depended on the nature of the asset and the purpose for which the assets were acquired. Management determined the classification of its financial assets at initial recognition and in the case of assets classified as held-to-maturity, re-evaluated this designation at each balance sheet date.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.17 Financial instruments (continued)

## (b) Classification and subsequent measurement (continued)

*Loans and receivables*

Loans and receivables were non-derivative financial assets with fixed or determinable payments that were not quoted in an active market. They were presented as current assets, except for those expected to be realised later than 12 months after the balance sheet date which were presented as non-current assets. Loans and receivables were presented as "trade and other receivables" (Note 11) and "cash and cash equivalents" (Note 10) on the balance sheet.

*Financial assets at fair value through profit or loss*

This category had two sub-categories: financial assets held for trading, and those designated at fair value through profit or loss at inception. A financial asset was classified as held for trading if it was acquired principally for the purpose of selling in the short term. Financial assets designated as at fair value through profit or loss at inception were those that are managed and their performances were evaluated on a fair value basis, in accordance with a documented investment strategy.

Assets in this category were classified as current assets if they were either held for trading or were expected to be realised within 12 months after the balance sheet date.

Financial assets, at fair value through profit or loss were subsequently carried at fair value. Changes in the fair value of financial asset at fair value through profit or loss were recognised in income or expenditure within "Other gains/(losses) – net" when the changes arose.

*Held-to-maturity financial assets*

Held-to-maturity financial assets were non-derivative financial assets with fixed or determinable payments and fixed maturities that the Group's management had the positive intention and ability to hold to maturity. If the Group were to sell other than an insignificant amount of held-to-maturity financial assets, the whole category would be tainted and reclassified as available-for-sale. They were presented as non-current assets, except for those maturing within 12 months after the balance sheet date which were presented as current assets.

## 2. Significant accounting policies (continued)

## 2.17 Financial instruments (continued)

## (b) Classification and subsequent measurement (continued)

**Non-derivative financial liabilities: Classification, subsequent measurement and gains and losses**

Financial liabilities are classified as measured at amortised cost.

Other financial liabilities are initially measured at fair value less directly attributable transaction costs. They are subsequently measured at amortised cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognised in profit or loss. These financial liabilities comprised trade and other payables.

**Trade and other payables**

Trade and other payables represent liabilities for goods and services provided to the Group prior to the end of financial year which are unpaid. They are classified as current liabilities if payment is due within one year or less. If not, they are presented as non-current liabilities.

## (c) Derecognition

**Financial assets**

The Group derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Group neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

The Group enters into transactions whereby it transfers assets recognised in its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognised.

**Financial liabilities**

The Group derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire. The Group also derecognises a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognised at fair value.

## 2. Significant accounting policies (continued)

## 2.17 Financial instruments (continued)

## (c) Derecognition (continued)

**Financial liabilities (continued)**

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognised in profit or loss.

## (d) Offsetting

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

## (e) Cash and cash equivalents

Cash and cash equivalents comprise cash balances and short-term deposits with maturities of one year or less from the date of acquisition that are subject to an insignificant risk of changes in their fair value, and are used by the Group in the management of its short-term commitments.

The Board is required to participate in the Centralised Liquidity Management Framework ("CLM") in accordance with the Accountant-General's Circular No.4/2009 dated 2 November 2009. All selected bank accounts of the Board maintained with selected banks are linked up with the Accountant-General's Department's ("AGD") bank accounts for available excess cash to be automatically aggregated for central management on a daily basis. The deposits held with AGD are short-term highly liquid investments that are readily convertible to known amounts of cash and are classified in cash and cash equivalents as "Deposits held with AGD".

Cash at bank and on hand represents funds that are derived from non-government sources/entities, which are not required to be included in the CLM.

## (f) Share capital

Ordinary shares to the Minister for Finance are classified as equity.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.17 Financial instruments (continued)

## (g) Capital account

The Capital account represents the grant given by the MOE to contribute towards the repayment of the outstanding accumulated interest on a Government loan taken.

## 2.18 Impairment

**Policy applicable from 1 April 2018**

The Group recognises loss allowances for expected credit losses ("ECLs") on financial assets measured at amortised costs.

Loss allowances of the Group are measured on either of the following bases:

- 12-month ECLs: these are ECLs that result from default events that are possible within the 12 months after the reporting date (or for a shorter period if the expected life of the instrument is less than 12 months); or
- Lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

*Simplified approach*

The Group applies the simplified approach to provide for ECLs for all trade receivables. The simplified approach requires the loss allowance to be measured at an amount equal to lifetime ECLs.

*General approach*

The Group applies the general approach to provide for ECLs on all other financial instruments. Under the general approach, the loss allowance is measured at an amount equal to 12-month ECLs at initial recognition.

At each reporting date, the Group assesses whether the credit risk of a financial instrument has increased significantly since initial recognition. When credit risk has increased significantly since initial recognition, loss allowance is measured at an amount equal to lifetime ECLs.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessment and includes forward-looking information.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.18 Impairment (continued)

**Policy applicable from 1 April 2018 (continued)***General approach (continued)*

If credit risk has not increased significantly since initial recognition or if the credit quality of the financial instruments improves such that there is no longer a significant increase in credit risk since initial recognition, loss allowance is measured at an amount equal to 12-month ECLs.

The Group considers a financial asset to be in default when the borrower is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realising security (if any is held).

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

*Measurement of ECLs*

ECLs are probability-weighted estimates of credit losses. Credit losses are measured at the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Group expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

*Credit-impaired financial assets*

At each reporting date, the Group assesses whether financial assets carried at amortised cost are credit-impaired. A financial asset is 'credit-impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Evidence that a financial asset is credit-impaired includes the following observable data:

- significant financial difficulty of the borrower or issuer;
- a breach of contract such as a default; or
- it is probable that the borrower will enter bankruptcy or other financial reorganisation.

*Presentation of allowance for ECLs in the statement of financial position*

Loss allowances for financial assets measured at amortised cost are deducted from the gross carrying amount of these assets.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

**2. Significant accounting policies (continued)****2.18 Impairment (continued)****Policy applicable from 1 April 2018 (continued)****Write-off**

The gross carrying amount of a financial asset is written off (either partially or in full) to the extent that there is no realistic prospect of recovery. This is generally the case when the Group determines that the debtor does not have assets or sources of income that could generate sufficient cash flows to repay the amounts subject to the write-off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group's procedures for recovery of amounts due.

**Policy applicable before 1 April 2018**

The Group assessed at each balance sheet date whether there was objective evidence that a financial asset or a group of financial assets was impaired and recognised an allowance for impairment when such evidence exists.

**Loans and receivables/Held-to-maturity financial assets**

Significant financial difficulties of the debtor, probability that the debtor would enter bankruptcy and default or significant delay in payments were objective evidence that these financial assets were impaired.

The carrying amount of these assets was reduced through the use of an impairment allowance account which was calculated as the difference between the carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate. When the asset became uncollectible, it was written off against the allowance account. Subsequent recoveries of amounts previously written off were recognised against the same line item in profit or loss.

The impairment allowance was reduced through profit or loss in a subsequent period when the amount of impairment loss decreased and the related decrease could be objectively measured. The carrying amount of the asset previously impaired was increased to the extent that the new carrying amount did not exceed the amortised cost had no impairment been recognised in prior periods.

**2.19 Fair value estimation of financial assets and liabilities**

The fair values of financial instruments that are not traded in an active market are determined by using valuation techniques. The Group uses a variety of methods and makes assumptions that are based on market conditions existing at each balance sheet date. Where appropriate, quoted market prices or dealer quotes for similar instruments are used.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

**2. Significant accounting policies (continued)****2.19 Fair value estimation of financial assets and liabilities (continued)**

The fair values of financial liabilities carried at amortised cost are estimated by discounting the future contractual cash flows at the current market interest rates that are available to the Group for similar financial liabilities.

Fair values are categorised into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- (i) quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1);
- (ii) inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices) (Level 2); and
- (iii) inputs for the asset or liability that are not based on observable market data (unobservable inputs) (Level 3).

**2.20 Leases****(a) When the Group is the lessee**

Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases by the Group.

Where the Group has the use of assets under operating leases, payments made under the leases are recognised in the profit or loss on a straight-line basis over the term of the lease. Lease incentives received are recognised in profit or loss as an integral part of the total lease payments made. Contingent rentals are charged to profit or loss in the accounting period in which they are incurred.

**(b) When the Group is the lessor**

Leases of retail space where the Group retains substantially all risks and rewards incidental to ownership are classified as operating leases.

Rental income from operating leases (net of any incentives given to the lessees) is recognised in profit or loss on a straight-line basis over the lease term. Contingent rents are recognised as income in profit or loss when earned.



## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 2. Significant accounting policies (continued)

## 2.20 Leases (continued)

## (b) When the Group is the lessor (continued)

Initial direct costs incurred by the Group in negotiating and arranging operating leases are added to the carrying amount of the leased assets and recognised as an expense in profit or loss over the lease term on the same basis as the lease income.

## 2.21 Provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation and the amount has been reliably estimated.

## 2.22 Dividends

Dividends are recognised when the dividends are approved for payment to the Ministry of Finance under the Capital Management Framework - Finance Circular Minute No. M36/2006.

## 2.23 Currency translation

## (a) Functional and presentation currency

Items included in the financial statements of each entity in the Group are measured using the currency of the primary economic environment in which the entity operates ("functional currency"). The financial statements are presented in Singapore Dollars, which is the functional currency of the Board.

## (b) Transactions and balances

Transactions in a currency other than functional currency ("foreign currency") are translated to functional currency using the exchange rates at the dates of the transactions. Currency translation differences resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at the closing rates at the balance sheet date are recognised in profit or loss.

Foreign exchange gains and losses impacting profit or loss are presented in the profit or loss within "Other (losses)/gains – net".

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 3. Critical accounting estimates, assumptions and judgements

Estimates, assumptions and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

## 3.1 Critical accounting estimates and assumptions

*Depreciation of property, plant and equipment*

Property, plant and equipment are depreciated on a straight-line basis over the estimated useful lives, after taking into account the estimated residual value. The Group reviews the estimated useful lives of the assets regularly in order to determine the amount of depreciation expense to be recorded during any reporting period. The useful lives are based on the Group's historical experience with similar assets and taking into account anticipated technological changes. Depreciation expense for future periods is adjusted if there are significant changes from previous estimates.

## 3.2 Critical judgements in applying the entity's accounting policies

*Financial assets at amortised cost*

The Endowment Fund follows the guidance of SB-FRS 109 on classifying non-derivative financial assets as subsequently measured at amortised cost. This classification requires significant judgement. In making this judgement, the Endowment Fund evaluates whether:

- the investment is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- contractual terms of the investments give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

If the Endowment Fund changes its business model for managing financial assets, the affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

## 4. Other income

	Group		Board	
	2019 \$	2018 \$	2019 \$	2018 \$
Donations and sponsorship	785,874	999,541	785,874	999,541
Rental income	919,548	934,248	987,993	889,248
Interest income	348,139	269,280	348,139	268,280
Management fee	670,200	770,500	764,560	872,960
Others	288,188	153,717	81,722	105,836
	<b>3,008,929</b>	<b>3,130,284</b>	<b>2,978,888</b>	<b>3,133,863</b>

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

5. Other (losses)/gains – net	Group		Board	
	2019	2018	2019	2018
	\$	\$	\$	\$
Fair value gain on financial asset at fair value through profit or loss	52,596	58,803	52,596	58,803
Net currency translation losses	(12,418)	(458)	(9,098)	(458)
	<u>40,178</u>	<u>58,345</u>	<u>43,498</u>	<u>58,345</u>
<b>6. Employee compensation</b>				
	Group		Board	
	2019	2018	2019	2018
	\$	\$	\$	\$
Wages and salaries	17,834,771	17,694,000	17,260,955	16,492,577
Employer's contribution to Central Provident Fund	2,775,193	2,834,489	2,692,841	2,787,815
Other staff benefits	365,856	315,855	365,683	315,855
	<u>21,075,819</u>	<u>20,844,344</u>	<u>20,319,479</u>	<u>19,596,247</u>
<b>7. Other expenditure</b>				
	Group		Board	
	2019	2018	2019	2018
	\$	\$	\$	\$
Professional, consultancy and other fees				
- subsidiaries	–	–	85,159	825,600
- non-related parties	960,193	883,612	888,779	763,910
Cost of merchandise and publications	436,497	667,536	366,263	450,659
Printing, stationery and office supplies	163,727	146,359	149,165	133,670
Rental of equipment and venue and lease fees of films	149,071	455,653	105,493	181,183
Postage, telephone and courier charges	87,242	89,991	74,949	69,483
Loss on disposal of property, plant and equipment	3,307	6,264	2,684	6,264
Transport and travelling expenses	418,640	424,251	378,196	386,365
Refreshment and entertainment expenses	158,142	177,258	156,914	176,530
Property tax	109,929	119,903	109,929	119,903
GST input tax (non-claimable)	1,062,639	1,140,685	1,062,639	1,140,685
Royalties	38,888	38,483	38,988	38,483
Others	168,718	243,360	63,389	140,965
	<u>3,758,913</u>	<u>4,371,345</u>	<u>3,447,299</u>	<u>4,241,640</u>

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

8. Finance expenses	Group and Board	
	2019	2018
	\$	\$
Interest expenses – others	–	1,660
	<u>–</u>	<u>1,660</u>
<b>9. Income taxes</b>		
<b>(a) Income tax expense</b>		
	Group	
	2019	2018
	\$	\$
Tax expense attributable to (deficit)/surplus is made up of:		
- Current income tax	–	–
- Deferred income tax (Note 20)	11,057	15,258
	<u>11,057</u>	<u>15,258</u>
Under/(over) provision in preceding financial years		
- Current income tax	(2,834)	2,751
- Deferred income tax (Note 20)	(22,160)	(22,913)
	<u>(24,994)</u>	<u>(19,752)</u>
Income tax credit	<u>(13,738)</u>	<u>(4,474)</u>
The tax expense on the Group's results differs from the theoretical amount that would arise using the Singapore standard rate of income tax as follows:		
	Group	
	2019	2018
	\$	\$
(Deficit)/Surplus before tax	<u>(153,446)</u>	<u>1,127,199</u>
Tax (credit)/expense calculated at a tax rate of 17% (2018: 17%)	<u>(26,086)</u>	<u>191,624</u>
Effects of:		
- Surplus of the Board exempted from tax	(15,799)	(214,609)
- Expenses not deductible for tax purposes	16,150	14,294
- Income not subject to tax	(8,207)	(7,466)
- Deferred tax assets not recognised	43,961	32,953
- Overprovision in preceding financial years	(24,795)	(19,752)
- Others	948	(1,455)
Income tax credit	<u>(13,738)</u>	<u>(4,474)</u>

As a statutory board, the Board is exempted from income tax.

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 9. Income taxes (continued)

## (a) Income tax expense (continued)

Deferred income tax assets are recognised for tax losses and capital allowances carried forward only to the extent that realisation of the related tax benefits through the future taxable profits is probable. Deferred tax assets have not been recognised in respect of tax losses and deductible temporary difference amounting to approximately \$622,212 (2018: \$790,055) and \$354,153 (2018: \$127,706), respectively, because it is not probable that future taxable profit will be available against which the Group can use the benefits therefrom.

## (b) Movements in current income tax liabilities

	Group	
	2019 \$	2018 \$
Beginning of financial year	-	7,541
Income tax refunded/paid	2,638	(10,292)
(Under)/Over provision in preceding financial years	(2,638)	2,751
End of financial year	-	-

## 10. Cash and cash equivalents

	Group		Board	
	2019 \$	2018 \$	2019 \$	2018 \$
Deposits held with AGD	24,192,838	23,071,543	24,192,838	23,071,543
Cash at bank and on hand	4,858,819	4,553,395	3,425,294	3,875,879
Short term bank deposits	2,000,000	1,000,000	2,000,000	1,000,000
	<u>30,248,848</u>	<u>28,624,938</u>	<u>29,618,122</u>	<u>27,947,422</u>

For the purpose of presenting the consolidated cash flow statement, the consolidated cash and cash equivalents comprise the following:

	Group	
	2019 \$	2018 \$
Cash and cash equivalents (as above)	30,248,848	28,624,938
Less: Short term bank deposits with maturity of more than 3 months	(2,000,000)	(1,000,000)
Cash and cash equivalents per consolidated cash flow statement	<u>28,248,848</u>	<u>27,624,938</u>

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 10. Cash and cash equivalents (continued)

Short term bank deposits bear interests at rates ranging from 1.23% to 2.01% (2018: 1.11% to 1.22%) per annum and have a tenure of 6 to 12 months (2018: 6 months).

Deposits held with the Accountant-General's Department ("AGD") earn interest based on fixed deposit rates determined by financial institutions with which AGD deposits the monies.

## 11. Trade and other receivables

	Group		Board	
	2019 \$	2018 \$	2019 \$	2018 \$
Trade receivables - subsidiaries	-	-	97,441	135,722
- external parties	428,398	2,432,065	327,824	2,378,143
Trade receivables - net	<u>428,398</u>	<u>2,432,065</u>	<u>425,265</u>	<u>2,513,865</u>
Non-trade receivables from subsidiary	-	-	-	3,881
Sponsorship receivables	165,896	95,743	165,896	95,743
Other government grants receivable (see below)	677,559	92,121	677,559	92,121
Government grant receivable	351,745	329,338	351,745	329,338
Deposits	58,830	23,608	-	-
Prepayments	193,754	163,692	154,175	141,819
Other receivables	101,298	285,395	93,179	274,519
	<u>1,837,438</u>	<u>3,424,069</u>	<u>1,887,819</u>	<u>3,492,283</u>

Other government grants refer to grants received from Ministries, Organs of States and other Statutory Boards.

## Other government grants

	Group and Board	
	2019 \$	2018 \$
Other government grants receivable	677,559	92,121
Other government grants received in advance	(770,343)	(1,000,216)
	<u>(92,784)</u>	<u>(1,898,095)</u>

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 11. Trade and other receivables (continued)

Movement in other government grants receivable/(received in advance) is as follows:

GROUP	Receivable		Received in advance		Total	
	2019	2018	2019	2018	2019	2018
	\$	\$	\$	\$	\$	\$
Beginning of financial year	62,121	1,812,168	(1,896,216)	(725,168)	(1,896,095)	1,186,970
Less: Grants received during the year	(143,758)	(1,805,437)	(148,487)	(4,484,502)	(294,145)	(6,309,939)
Add: Amount recognised in profit or loss	728,188	65,420	1,896,341	3,014,058	1,998,827	3,080,478
Add: Amount transferred to deferred capital grants (Note 21)	-	-	5,468	6,376	5,468	6,376
Less: Amount returned	-	-	81,271	180,103	81,271	180,103
Addless: Others	-	-	4,200	48,992	4,200	48,992
End of financial year	477,559	62,121	(779,343)	(1,896,216)	(302,784)	(1,896,095)

Board	Receivable		Received in advance		Total	
	2019	2018	2019	2018	2019	2018
	\$	\$	\$	\$	\$	\$
Beginning of financial year	62,121	1,812,168	(1,896,216)	(725,168)	(1,896,095)	1,186,970
Less: Grants received during the year	(143,758)	(1,805,437)	(127,803)	(4,471,287)	(271,641)	(6,376,744)
Add: Amount recognised in profit or loss	728,188	65,420	1,896,227	3,080,820	1,995,455	3,876,243
Add: Amount transferred to deferred capital grants (Note 21)	-	-	5,468	6,376	5,468	6,376
Less: Amount returned	-	-	81,271	180,103	81,271	180,103
Addless: Others	-	-	4,200	48,992	4,200	48,992
End of financial year	477,559	62,121	(779,343)	(1,896,216)	(302,784)	(1,896,095)

## 12. Financial asset at fair value through profit or loss

	Group and Board	
	2019	2018
	\$	\$

Fullerton Conservative Balanced Fund ("Fullerton Fund") 4,370,401 4,317,805

The Fullerton Fund has a nominal value amounting to \$3,900,000 (2018: \$3,900,000).

The fair value of the Fullerton Fund is provided by the Fund Manager and determined based on estimated valuations derived from market quotations and are within level 2 of the fair value hierarchy.

Changes in the fair value of the financial asset at fair value through profit or loss amounting to \$52,596 (2018: \$88,803) have been included in the statement of comprehensive income for the year.

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 13. Other investment

	Group and Board	
	2019	2018
	\$	\$
Debt investment		
- classified as held-to-maturity	-	1,018,000
- classified at amortised cost	1,018,000	-
	<u>1,018,000</u>	<u>1,018,000</u>

included in the debt investment classified at amortised cost (2018: held-to-maturity) is quoted corporate bond.

The quoted corporate bond has nominal value amounting to \$1,000,000 (2018: \$1,000,000), with coupon rate of 2.58% (2018: 2.58%) per annum and matures on 24 September 2020 (2018: 24 September 2020). The average effective interest rate of the bond is 2.17% (2018: 2.17%). The bond carries a fixed coupon rate.

The fair value of the bond is provided by bank employing generally market accepted valuation parameters and techniques. The bond has fair values amounting to \$1,002,600 (2018: \$999,000) and is within level 2 of the fair value hierarchy.

## 14. Inventories

	Group		Board	
	2019	2018	2019	2018
	\$	\$	\$	\$
Finished goods	<u>343,591</u>	<u>367,173</u>	<u>87,864</u>	<u>108,579</u>

inventories comprised finished goods held at cost for resale purposes.

The cost of inventories recognised as an expense and included in "Other expenditure" amounts to \$430,407 (2018: \$687,538) for the Group and \$368,203 (2018: \$460,805) for the Board.

At 31 March 2019, the write-down of inventories to net realisable value by the Group and Board amounted to \$28,222 (2018: \$40,270) and \$584 (2018: \$2,010) respectively.

## 15. Investments in subsidiaries

	Board	
	2019	2018
	\$	\$
Unquoted equity investments at cost	<u>1,760,000</u>	<u>1,760,000</u>

**SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES****NOTES TO THE FINANCIAL STATEMENTS***For the financial year ended 31 March 2019***15. Investments in subsidiaries (continued)**

Details of the subsidiaries are as follows:

Name of companies	Principal activities	Country of business/ incorporation	Equity holding	
			2019 %	2018 %
Singapore Science Centre Global <sup>(a)</sup>	Investment holding, marketing and promotional activities for related entities and participation in joint ventures and collaboration projects, with educational and entertainment elements, on an academic and commercial basis.	Singapore	100	100
Snow Venture Pte Ltd <sup>(a)</sup>	Proprietor and operator of entertainment centre	Singapore	100	100

<sup>(a)</sup> Audited by PPMO LLP, Singapore

**SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 March 2019*

**16. Property, plant and equipment**

Group

	<u>Leasehold land</u> \$	<u>Buildings</u> \$	<u>Leasehold improvements</u> \$	<u>Furniture and office equipment</u> \$	<u>Motor vehicles</u> \$	<u>OMNIMAX films</u> \$	<u>Assets under construction</u> \$	<u>Total</u> \$
<b>2019</b>								
<u>Cost</u>								
Beginning of financial year	3,754,976	42,740,996	22,815,078	16,742,779	268,315	602,594	2,660	86,927,398
Additions	–	2,450	2,212,671	219,788	–	–	281,026	2,715,935
Disposals	–	–	(216,606)	(335,634)	(244,556)	–	–	(796,796)
Reclassifications	–	–	–	2,660	–	–	(2,660)	–
End of financial year	3,754,976	42,743,446	24,811,143	16,629,593	23,759	602,594	281,026	88,846,537
<u>Accumulated depreciation</u>								
Beginning of financial year	1,320,516	27,641,891	20,215,742	14,256,540	261,368	602,594	–	64,298,651
Depreciation charge	36,377	1,084,773	1,472,844	1,039,523	1,956	–	–	3,635,473
Disposals	–	–	(216,606)	(334,482)	(242,399)	–	–	(793,487)
End of financial year	1,356,893	28,726,664	21,471,980	14,961,581	20,925	602,594	–	67,140,637
<b>Net book value</b>								
End of financial year	<b>2,398,083</b>	<b>14,016,782</b>	<b>3,339,163</b>	<b>1,668,012</b>	<b>2,834</b>	<b>–</b>	<b>281,026</b>	<b>21,705,900</b>

**SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 March 2019*

**16. Property, plant and equipment (continued)**

Group (continued)

	<u>Leasehold land</u> \$	<u>Buildings</u> \$	<u>Leasehold improvements</u> \$	<u>Furniture and office equipment</u> \$	<u>Motor vehicles</u> \$	<u>OMNIMAX films</u> \$	<u>Assets under construction</u> \$	<u>Total</u> \$
<b>2018</b>								
<u>Cost</u>								
Beginning of financial year	3,754,976	42,740,996	21,869,918	17,822,049	268,315	602,594	112,655	87,171,503
Additions	–	–	945,160	331,359	–	–	2,660	1,279,179
Disposals	–	–	–	(1,523,284)	–	–	–	(1,523,284)
Reclassifications				112,655	–	–	(112,655)	–
End of financial year	<u>3,754,976</u>	<u>42,740,996</u>	<u>22,815,078</u>	<u>16,742,779</u>	<u>268,315</u>	<u>602,594</u>	<u>2,660</u>	<u>86,927,398</u>
<u>Accumulated depreciation</u>								
Beginning of financial year	1,284,140	26,556,594	18,940,723	14,398,646	258,107	602,594	–	62,040,804
Depreciation charge	36,376	1,085,297	1,275,019	1,374,924	3,261	–	–	3,774,877
Disposals	–	–	–	(1,517,030)	–	–	–	(1,517,030)
End of financial year	<u>1,320,516</u>	<u>27,641,891</u>	<u>20,215,742</u>	<u>14,256,540</u>	<u>261,368</u>	<u>602,594</u>	<u>–</u>	<u>64,298,651</u>
<b>Net book value</b>								
End of financial year	<u>2,434,460</u>	<u>15,099,105</u>	<u>2,599,336</u>	<u>2,486,239</u>	<u>6,947</u>	<u>–</u>	<u>2,660</u>	<u>22,628,747</u>

**SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 March 2019*

**16. Property, plant and equipment (continued)**

Board

	<u>Leasehold land</u> \$	<u>Buildings</u> \$	<u>Leasehold improvements</u> \$	<u>Furniture and office equipment</u> \$	<u>Motor vehicles</u> \$	<u>OMNIMAX films</u> \$	<u>Assets under construction</u> \$	<u>Total</u> \$
<b>2019</b>								
<u>Cost</u>								
Beginning of financial year	3,754,976	41,478,610	21,376,843	16,042,720	268,315	602,594	2,660	83,526,718
Additions	–	–	2,186,616	175,204	–	–	281,026	2,642,846
Disposals	–	–	(147,656)	(287,096)	(244,556)	–	–	(679,308)
Transfers	–	–	–	2,660	–	–	(2,660)	–
End of financial year	<u>3,754,976</u>	<u>41,478,610</u>	<u>23,415,803</u>	<u>15,933,488</u>	<u>23,759</u>	<u>602,594</u>	<u>281,026</u>	<u>85,490,256</u>
<u>Accumulated depreciation</u>								
Beginning of financial year	1,320,516	26,413,404	19,353,502	13,998,600	261,368	602,594	–	61,949,984
Depreciation charge	36,377	1,060,134	1,241,181	922,407	1,956	–	–	3,262,055
Disposals	–	–	(147,656)	(286,569)	(242,399)	–	–	(676,624)
End of financial year	<u>1,356,893</u>	<u>27,473,538</u>	<u>20,447,027</u>	<u>14,634,438</u>	<u>20,925</u>	<u>602,594</u>	<u>–</u>	<u>64,535,415</u>
<b>Net book value</b>								
End of financial year	<u>2,398,083</u>	<u>14,005,072</u>	<u>2,968,776</u>	<u>1,299,050</u>	<u>2,834</u>	<u>–</u>	<u>281,026</u>	<u>20,954,841</u>



**SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 March 2019*

**16. Property, plant and equipment (continued)**

Board (continued)

	<u>Leasehold land</u> \$	<u>Buildings</u> \$	<u>Leasehold improvements</u> \$	<u>Furniture and office equipment</u> \$	<u>Motor vehicles</u> \$	<u>OMNIMAX films</u> \$	<u>Assets under construction</u> \$	<u>Total</u> \$
<b>2018</b>								
<u>Cost</u>								
Beginning of financial year	3,754,976	41,478,610	20,466,578	17,250,249	268,315	602,594	112,655	83,933,977
Additions	–	–	910,265	203,100	–	–	2,660	1,116,025
Disposals	–	–	–	(1,523,284)	–	–	–	(1,523,284)
Transfers	–	–	–	112,655	–	–	(112,655)	–
End of financial year	<u>3,754,976</u>	<u>41,478,610</u>	<u>21,376,843</u>	<u>16,042,720</u>	<u>268,315</u>	<u>602,594</u>	<u>2,660</u>	<u>83,526,718</u>
<u>Accumulated depreciation</u>								
Beginning of financial year	1,284,140	25,353,269	18,337,669	14,275,602	258,107	602,594	–	60,111,381
Depreciation charge	36,376	1,060,135	1,015,833	1,240,028	3,261	–	–	3,355,633
Disposals	–	–	–	(1,517,030)	–	–	–	(1,517,030)
End of financial year	<u>1,320,516</u>	<u>26,413,404</u>	<u>19,353,502</u>	<u>13,998,600</u>	<u>261,368</u>	<u>602,594</u>	<u>–</u>	<u>61,949,984</u>
<u>Net book value</u>								
End of financial year	<u>2,434,460</u>	<u>15,065,206</u>	<u>2,023,341</u>	<u>2,044,120</u>	<u>6,947</u>	<u>–</u>	<u>2,660</u>	<u>21,576,734</u>

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 17. Government grants received in advance

	Group and Board	
	2019	2018
	\$	\$
Beginning of financial year	11,204,228	10,153,612
Add: Grants received during the year	29,846,416	33,326,734
Less: Amount transferred to deferred capital grants (Note 21)	-	(75,665)
Less: Amount recognised in profit or loss	(31,874,933)	(32,200,652)
End of financial year	9,974,719	11,204,228

## 18. Sponsorship received in advance

	Group and Board	
	2019	2018
	\$	\$
Beginning of financial year	762,156	666,650
Add: Sponsorship granted during the year	1,937,615	870,322
Less: Amount transferred to deferred capital grants (Note 21)	(26,263)	(3,475)
Less: Amount recognised in profit or loss	(678,168)	(666,641)
End of financial year	2,135,360	762,156

## 19. Trade and other payables

	Group		Board	
	2019	2018	2019	2018
	\$	\$	\$	\$
Trade payables to				
- external parties	1,906,718	998,157	1,778,267	866,368
- subsidiaries	-	-	26,650	134,850
	1,906,718	998,157	1,804,917	998,136
Non-trade payables to				
- non-related parties	903,802	1,084,262	896,109	1,082,491
- other government agency	84,833	146,548	81,668	118,536
- subsidiaries	-	-	1,825	62,623
Other payables	-	60,977	-	-
Deposits received	97,377	190,863	113,417	208,263
Advances from customers	547,591	387,471	413,067	227,674
Other accruals for operating expenses	2,313,463	2,073,749	2,203,604	1,956,337
	6,663,774	4,941,057	6,812,683	4,873,690

Non-trade payables to subsidiaries are unsecured, interest-free and repayable on demand.

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 20. Deferred income taxes

	Group	
	2019	2018
	\$	\$
Beginning of financial year	48,253	55,478
Tax charged to profit or loss (Note 9(a))	(11,103)	(7,225)
End of financial year	37,150	48,253

The movement in deferred income tax liabilities during the financial year is as follows:

## Deferred income tax liabilities

	Accelerated tax depreciation	
	2019	Total
	\$	\$
2019		
Beginning of financial year	48,253	48,253
Tax charged to profit or loss	(11,103)	(11,103)
End of financial year	37,150	37,150
2018		
Beginning of financial year	55,478	55,478
Tax charged to profit or loss	(7,225)	(7,225)
End of financial year	48,253	48,253

## 21. Deferred capital grants

	Government		Others		Total	
	2019	2018	2019	2018	2019	2018
	\$	\$	\$	\$	\$	\$
Beginning of financial year	16,658,158	16,918,992	208,764	351,379	16,866,922	17,269,971
Add: Transferred from						
- government grants (Note 17)	-	75,665	-	-	-	75,665
- other government grants (Note 11)	-	-	6,468	6,376	6,468	6,376
- sponsorship (Note 18)	-	-	36,343	3,475	36,343	3,475
Less: Amount recognised in profit or loss	(1,643,328)	(1,056,516)	(171,973)	(152,448)	(1,206,684)	(1,208,663)
End of financial year	14,994,830	15,908,136	77,294	208,764	14,994,830	15,118,923
Total deferred capital grants received (included in government grants received) since inception of the Board	74,629,658	74,521,929	13,875,781	13,823,650	88,372,749	88,325,929

SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

21. Deferred capital grants (continued)

Board

	Government		Others		Total	
	2019	2018	2019	2018	2019	2018
	\$	\$	\$	\$	\$	\$
Beginning of financial year	16,942,668	16,212,620	86,744	229,329	16,927,412	17,147,951
Add: Transferred from						
- government grants (Note 17)	-	75,666	-	-	-	75,666
- other government grants (Note 17)	-	-	6,468	6,376	6,468	6,376
- sponsorship (Note 18)	-	-	26,262	2,475	26,262	2,475
Less: Amount recognised in profit or loss	(1,993,288)	(1,020,699)	(146,246)	(152,445)	(1,195,682)	(1,205,628)
End of financial year	14,949,380	15,191,921	76,720	28,714	14,975,259	16,027,412
Total deferred capital grants received (included in government grants received) since inception of the Board	74,921,668	74,501,669	13,476,828	13,828,027	88,178,767	88,126,566

22. Capital account

The Board's capital account represents:

- (a) the grant of \$1,640,347 given by the MOE in the financial year 1993/94 to contribute towards the repayment of the outstanding accumulated interest on a Government loan taken in 1984 for the purchase of a piece of leasehold land for the Omni-Theatre; and
- (b) the conversion of a Government loan and the related outstanding accumulated interest amounting to \$1,339,030. The loan was utilised by the Board in 1988 to finance the building of the Omni-Theatre. The conversion of the loan and outstanding accumulated interest to capital was approved by the Ministry of Finance in the financial year ended 31 March 2001.

23. Share capital

	Group and Board	
	2019	2018
	\$	\$
Beginning of financial year	7,969,330	8,969,710
Issue of new shares	3,030,102	680,620
End of financial year	9,999,432	7,969,330

SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

23. Share capital (continued)

For the year ended 31 March 2019, the Board issued 2,030,102 (2018: 989,620) ordinary shares for a total consideration of \$2,030,102 (2017: \$989,620) as part of the Capital Management Framework for Statutory Boards under Finance Circular Minute M26/2008. The shares are fully paid and are held by the Minister for Finance, a body corporate incorporated by the Minister for Finance (Incorporation) Act (Chapter 183).

The holders of these shares are entitled to receive dividends as and when declared by the Board. The shares carry neither voting rights nor par value.

24. Restricted funds

Restricted funds comprise of the Sponsorship Fund and the Endowment Fund:

Statement of Comprehensive Income - Restricted Funds

Board	Sponsorship	Endowment	Total
	\$	\$	\$
2019			
Other income	816,534	192,811	919,345
Expenses	(805,600)	(3,666)	(809,266)
Net surplus for the year	10,934	99,145	110,079
Accumulated surplus brought forward	80,812	7,410,306	7,491,117
Accumulated surplus carried forward	91,746	7,509,450	7,601,196
2018			
Other income	1,007,069	124,666	1,141,825
Expenses	(1,004,141)	(48,263)	(1,052,394)
Net surplus for the year	2,928	88,353	89,231
Accumulated surplus brought forward	77,884	7,324,022	7,401,898
Accumulated surplus carried forward	80,812	7,410,306	7,491,117

Sponsorship income relates to expenditure incurred which will be subsequently reimbursed by the sponsors of the events. The amount reimbursable is correspondingly recorded as sponsorship receivables under trade and other receivables (Note 11).

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS  
For the financial year ended 31 March 2019

## 24. Restricted funds (continued)

## Balance Sheet - Restricted Funds

Board	Sponsorship \$	Endowment \$	Total \$
<b>2018</b>			
<b>ASSETS</b>			
<b>Current assets</b>			
Cash and cash equivalents	2,138,171	2,117,609	4,255,780
Trade receivables	33,426	-	33,426
Other receivables	4,912	7,184	12,096
Sponsorship receivable (Note 11)	165,898	-	165,898
Financial asset at fair value through profit or loss (Note 12)	-	4,370,401	4,370,401
	<u>2,342,406</u>	<u>6,495,194</u>	<u>8,837,600</u>
<b>Non-current assets</b>			
Other investment (Note 13)	-	1,018,000	1,018,000
Property, plant and equipment	37,640	-	37,640
	<u>37,640</u>	<u>1,018,000</u>	<u>1,055,640</u>
<b>Total assets</b>	<u>2,380,046</u>	<u>7,513,194</u>	<u>9,893,239</u>
<b>LIABILITIES</b>			
<b>Current liabilities</b>			
Trade and other payables	145,459	3,744	149,203
Sponsorship received in advance (Note 18)	2,105,200	-	2,105,200
	<u>2,250,659</u>	<u>3,744</u>	<u>2,254,403</u>
<b>Non-current liabilities</b>			
Deferred capital grants	37,640	-	37,640
	<u>37,640</u>	<u>-</u>	<u>37,640</u>
<b>Total liabilities</b>	<u>2,288,299</u>	<u>3,744</u>	<u>2,292,043</u>
<b>NET ASSETS</b>	<u>91,746</u>	<u>7,509,450</u>	<u>7,601,196</u>

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS  
For the financial year ended 31 March 2019

## 24. Restricted funds (continued)

## Balance Sheet - Restricted Funds (continued)

Board	Sponsorship \$	Endowment \$	Total \$
<b>2018</b>			
<b>ASSETS</b>			
<b>Current assets</b>			
Cash and cash equivalents	2,155,343	2,120,502	4,275,845
Trade receivables	93,178	-	93,178
Other receivables	4,766	2,626	7,391
Sponsorship receivable (Note 11)	95,740	-	95,740
Financial asset at fair value through profit or loss (Note 12)	-	4,317,805	4,317,805
	<u>2,350,016</u>	<u>6,440,923</u>	<u>8,790,939</u>
<b>Non-current assets</b>			
Other investment (Note 13)	-	1,018,000	1,018,000
Property, plant and equipment	11,003	-	11,003
	<u>11,003</u>	<u>1,018,000</u>	<u>1,029,003</u>
<b>Total assets</b>	<u>2,361,019</u>	<u>7,458,923</u>	<u>9,819,942</u>
<b>LIABILITIES</b>			
<b>Current liabilities</b>			
Trade and other payables	1,507,048	48,018	1,555,066
Sponsorship received in advance (Note 18)	792,156	-	792,156
	<u>2,299,204</u>	<u>48,018</u>	<u>2,347,222</u>
<b>Non-current liabilities</b>			
Deferred capital grants	11,003	-	11,003
	<u>11,003</u>	<u>-</u>	<u>11,003</u>
<b>Total liabilities</b>	<u>2,310,207</u>	<u>48,018</u>	<u>2,358,225</u>
<b>NET ASSETS</b>	<u>90,812</u>	<u>7,410,905</u>	<u>7,491,117</u>

## 25. Omni-Theatre Development Fund

The Omni-Theatre Development Fund was set up with contributions received from private organisations and individuals. The income of this fund is taken to the profit or loss and is used for:

- (i) replacing the various specialised and highly technical projector systems and sound equipment;
- (ii) leasing of CINIMAX movies; and
- (iii) producing Planetarium shows.

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 25. Omni-Theatre Development Fund (continued)

	Group and Board	
	2019	2018
	\$	\$
Beginning and end of financial year	122,780	122,780
Represented by:		
Cash at bank and in hand	122,780	122,780

## 26. Commitments

(a) Operating lease commitments - where the Group is a lessee

The Group and the Board lease land and office equipment from non-related parties under non-cancellable operating lease agreements. The leases have varying terms, escalation clauses and renewal rights.

The future minimum lease payables under non-cancellable operating leases contracted for at the balance sheet date but not recognised as liabilities, are as follows:

	Group and Board	
	2019	2018
	\$	\$
Not later than one year	5,289	3,253
Between one and five years	8,132	4,337
Later than five years	1,695	1,731
	15,116	9,321

(b) Operating lease commitments - where the Group is a lessor

The Group and the Board lease out retail space to non-related parties under non-cancellable operating leases. The lessees are required to pay either absolute fixed annual increase to the lease payments or contingent rents computed based on their sales achieved during the lease period.

The future minimum lease receivables under non-cancellable operating leases contracted for at the balance sheet date but not recognised as receivables, are as follows:

	Group		Board	
	2019	2018	2019	2018
	\$	\$	\$	\$
Not later than one year	643,004	264,745	716,004	348,745
Between one and five years	702,455	57,735	617,455	85,735
	1,345,459	322,480	1,333,459	434,480

## SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 27. Financial risk management

Financial risk factors

The Group's activities expose it to a variety of financial risks: market risk (including currency risk, price risk and interest rate risk), credit risk and liquidity risk.

The Board is responsible for setting the objectives and underlying principles of financial risk management for the Group. The Board then establishes detailed policies such as risk identification and measurement and exposure limits.

The information presented below is based on information received by the key management.

(a) Market risk(i) Currency risk

The Group has no significant exposure to foreign currencies as its operations are substantially denominated in Singapore dollars, which is also its functional currency.

(ii) Price risk

To manage its price risk arising from these investments, the Group manages its investment portfolio in accordance with investment guidelines and limits set by the Group for the portfolio. For its equity securities designated at fair value through profit or loss, the impact of a 5% increase in the fair value of the Fund at the reporting date on net surplus would have been an increase of \$218,520 (2018: \$215,890). An equal change in the opposite direction would have decrease net surplus by \$218,520 (2018: \$215,890).

(iii) Interest rate risk

Interest rate risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

The Group's exposure to cash flow interest rate risk arises from interest-bearing assets consisting mainly of cash balances and fixed deposits maintained/managed by AGD. The cash balances and fixed deposits maintained/managed by AGD under centralised liquidity management are placed with high credit quality financial institution and are expected to move in tandem with market interest rate movements. The Group is not exposed to interest rate risk arising from held-to-maturity financial assets as the bonds carry a fixed coupon rate.

SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

27. Financial risk management (continued)

(a) Market risk (continued)

(i) Interest rate risk (continued)

As the Group does not have other significant interest-bearing assets at floating rates, the Group's income is substantially independent of changes in market interest rates. Accordingly, no sensitivity analysis is presented. Information relating to the Group's interest rate exposure are disclosed in the respective notes to the financial statements.

(b) Credit risk

Credit risk refers to the risk that counterparty will default on its contractual obligations resulting in financial loss to the Group. The major classes of financial assets of the Group are cash and cash equivalents, trade and other receivables, financial asset at fair value through profit or loss and held-to-maturity financial assets.

For trade receivables, the Group adopts the policy of dealing only with customers of appropriate credit history, and obtaining sufficient security where appropriate to mitigate credit risk. For other financial assets including deposits held with AGD, the Group adopts the policy of dealing only with high credit quality counterparties such as reputable financial institutions. Concentrations of credit risk with respect to trade receivables are limited due to the Group's large number of customers. Due to these factors, management believes that no additional credit risk beyond the amount of allowance for impairment made is inherent in the Group's trade receivables.

The maximum exposure to credit risk for each class of financial instruments is the carrying amount of that class of financial instruments presented on the balance sheet. The Group does not hold any collateral in respect of their financial assets.

**Expected credit loss assessment as at 1 April 2018 and 31 March 2019**

The Group uses an allowance matrix to measure the ECLs of trade receivables. In calculating the expected credit loss rates, the Group considers historical loss rates and, if relevant, adjustment for forward looking economic factors affecting the customers' ability to settle the outstanding receivables. As of 2019, no scalar factor has been applied.

Trade receivables mainly arise from customers that have a good payment record with the Group. The Group believes that no impairment allowance is necessary in respect of these receivables as the ECL is not material.

SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

27. Financial risk management (continued)

(b) Credit risk (continued)

The following table provides information about the exposure to credit risk for trade receivables as at 31 March 2019:

	2019	
	Group \$	Board \$
Current	239,641	302,695
Past due 0 to 2 months	109,477	62,663
Past due over 2 months	79,269	69,907
	<u>428,387</u>	<u>425,265</u>

Cash and cash equivalents

Cash and cash equivalents that are neither past due nor impaired are mainly deposits with banks with high credit-ratings assigned by international credit-rating agencies. Deposits held with AGD are available for withdrawal upon request from AGD. Impairment on cash and cash equivalents has been measured on the 12-month expected loss basis and reflects the short maturities of the exposures. The amount of the allowance on cash and cash equivalents was negligible.

**Comparative information under SB-FRS 39**

The following table provides information about the exposure to credit risk for trade receivables as at 1 April 2018:

	2018	
	Group \$	Board \$
Current	1,243,760	1,310,833
Past due 0 to 2 months	1,067,452	1,088,772
Past due over 2 months	120,873	114,260
	<u>2,432,085</u>	<u>2,513,865</u>

Impairment under SB-FRS 39

Management has assessed and determined that there has been no significant change in credit quality from the date of credit was initially granted and hence the receivables are still considered recoverable.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 27. Financial risk management (continued)

## (c) Liquidity risk

Liquidity risk is the risk that the Board will not be able to meet its financial obligations as and when they fall due. The Board's approach to maintain liquidity is to ensure sufficient funding from the government and other government agencies and maintains a level of cash and cash equivalents deemed adequate by management to finance its operations.

The table below analyses non-derivative financial liabilities of the Group and the Board into relevant maturity groupings based on the remaining period from the balance sheet date to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows.

	2019 \$	2018 \$
<b>Group</b>		
Trade and other payables*		
- Less than 1 year	5,306,193	4,503,586
- Between 1 and 5 years	-	35,407
	<u>5,306,193</u>	<u>4,538,993</u>
<b>Board</b>		
Trade and other payables*		
- Less than 1 year	5,099,916	4,446,376

\* excludes deferred income

## (d) Capital risk

The Board's objectives when managing capital are to ensure that the Board is adequately capitalised and to fulfil objectives for which monies of the Board may be applied under the Act. To achieve these objectives, the Board may secure grants from Government or other government agencies, return as capital to shareholders, issue new shares, or obtain new borrowings.

The Board is not subject to any capital requirements under the Act or any other externally imposed capital requirements, except for those mandated by the Ministry of Finance.

The Board defines capital as share capital, capital account, funds and accumulated surplus. The Board monitors its net surplus/deficits. The Board's approach to capital management remains unchanged from the previous financial year ended 31 March 2018.

Information on the determination of fair values of financial assets at fair value through profit or loss and debt investment classified at amortised cost has been separately disclosed in Notes 12 and 13.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 27. Financial risk management (continued)

## (e) Fair values

## Financial assets

In 2019 and 2018, there were no transfers between the different levels of the fair value hierarchy.

## Other financial assets and liabilities

The carrying values of other financial assets and liabilities with a maturity of less than one year (including trade and other receivables, cash and cash equivalents, and trade and other payables) are assumed to approximate their fair values because of the short period to maturity.

## (f) Financial instruments by category

The aggregate carrying amount of financial assets and financial liabilities are as follows:

	Group		Board	
	2019 \$	2018 \$	2019 \$	2018 \$
Loans and receivables	-	31,686,315	-	31,267,666
Financial assets at amortised cost	31,692,632	-	31,331,766	-
Other investment	1,018,000	1,018,000	1,018,000	1,018,000
Financial assets at fair value through profit or loss	4,376,401	4,317,805	4,376,401	4,317,805
Financial liabilities at amortised cost	(5,306,193)	(4,578,993)	(5,099,916)	(4,446,376)

## 28. Related party transactions

In addition to the information disclosed elsewhere in the financial statements, the following transactions took place between the Group and related parties at terms agreed between the parties:

## (a) Sales of goods and/or services to government

	Group	
	2019 \$	2018 \$
Admission fees received from government	30,613	30,657
Proceeds from special projects received from government	13,545	9,367
Fees from courses and programmes from government	260,280	189,306
Sales of merchandise and publications to government	29,775	3,569

SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

26. Related party transactions (continued)

(b) Donations and sponsorships

	Group	
	2019	2018
	\$	\$
Donations and sponsorships from other government agencies	24,178	43,771

(c) Key management personnel compensation

Key management personnel compensation is as follows:

	Group		Board	
	2019	2018	2019	2018
	\$	\$	\$	\$
Wages and salaries	1,097,654	1,060,650	673,360	636,370
Post-employment benefits - contributions to CPF	67,659	73,113	56,206	59,720
	<u>1,164,813</u>	<u>1,133,872</u>	<u>1,029,566</u>	<u>695,090</u>

28. Adoption of new standards

With effect from 1 April 2018, the Group adopted the new and revised SB-FRS and interpretations that are effective for financial year beginning on 1 April 2018. Other than SB-FRS 109 *Financial Instruments*, the adoption of these SB-FRS and interpretations has no significant impact to the Group's financial statements.

An explanation of how the adoption of SB-FRS 109 has affected the Group's financial statements is set out below.

**SB-FRS 109 *Financial Instruments***

SB-FRS 109 sets out requirements for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. It also introduces a new ECL model and a new general hedge accounting model. This standard replaces SB-FRS 39 *Financial Instruments: Recognition and Measurement*.

SCIENCE CENTRE BOARD AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

29. Adoption of new standards (continued)

(a) Classification and measurement: financial assets and financial liabilities

SB-FRS 109 contains three principal classification categories for financial assets: measured at amortised cost, fair value through other comprehensive income ("FVOCI") and FVTPL. The classification of financial assets under SB-FRS 109 is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics. SB-FRS 109 eliminates the previous SB-FRS 39 categories of held to maturity, loans and receivables and available for sale. Under SB-FRS 109, derivatives embedded in contracts where the host is a financial asset in the scope of the standard are never separated. Instead, the hybrid financial instrument as a whole is assessed for classification.

For an explanation of how the Group classifies and measures financial instruments under SB-FRS 109, see Note 2.17.

SB-FRS 109 largely retains the existing requirements in SB-FRS 39 for the classification and measurement of financial liabilities.

The adoption of SB-FRS 109 has not had a significant effect on the Group's accounting policies related to financial liabilities.

The following table and the accompanying notes below explain the original measurement categories under SB-FRS 39 and the new measurement categories under SB-FRS 109 for each class of the Group's financial assets as at 1 April 2018.

	Note	Original classification under SB-FRS 39	New classification under SB-FRS 109	1 April 2018	
				Original carrying amount under SB-FRS 39	New carrying amount under SB-FRS 109
					\$
<b>Financial assets</b>					
<b>Group</b>					
Cash and cash equivalents		Loans and receivables	Amortised cost	28,024,938	28,024,938
Trade and other receivables	(i)	Loans and receivables	Amortised cost	3,424,009	3,424,009
Financial asset at fair value through profit or loss	(ii)	Designated at FVTPL	Mandatorily at FVTPL	4,317,806	4,317,806
Debt investment	(iii)	Held-to-maturity financial asset	Amortised cost	1,018,000	1,018,000
<b>Total financial assets</b>				<u>37,384,812</u>	<u>37,384,812</u>



## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 28. Adoption of new standards (continued)

## (a) Classification and measurement financial assets and financial liabilities (continued)

	Note	Original classification under SB-FRS 39	New classification under SB-FRS 109	1 April 2018	
				Original carrying amount under SB-FRS 39	New carrying amount under SB-FRS 109
Financial assets					
Board					
Cash and cash equivalents		Loans and receivables	Amortised cost	27,947,422	27,947,422
Trade and other receivables	(i)	Loans and receivables	Amortised cost	3,452,283	3,452,283
Financial asset at fair value through profit or loss	(ii)	Designated at FVTPL	Mandatorily at FVTPL	4,317,805	4,317,805
Debt investment	(iii)	Held-to-maturity financial asset	Amortised cost	1,018,000	1,018,000
<b>Total financial assets</b>				<b>36,735,510</b>	<b>36,735,510</b>

- (i) Trade and other receivables that were classified as loans and receivables under SB-FRS 39 are now classified at amortised cost. The transition does not have a material effect on the opening retaining earnings of the Group.
- (ii) Under SB-FRS 39, the investment was designated as at FVTPL because it was managed on a fair value basis and its performance was monitored on this basis. This asset has been classified as mandatorily measured under FVTPL under SB-FRS 109.
- (iii) Debt investment that was previously classified as held-to-maturity are not classified at amortised cost. The Group intends to hold the assets to maturity to collect contractual cash flows and these cash flows consist solely of payments of principal and interest on the principal amount outstanding. The transition does not have a material effect on the opening retaining earnings of the Group.

## (b) Impairment of financial assets

SB-FRS 109 replaces the 'incurred loss' model in SB-FRS 39 with an 'expected credit loss' ("ECL") model. The new impairment model applies to financial assets measured at amortised cost, contract assets and debt investments at FVOCI, but not to investments in equity instruments. Under SB-FRS 109, credit losses are recognised earlier than under SB-FRS 39.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 28. Adoption of new standards (continued)

## (b) Impairment of financial assets (continued)

For assets in the scope of the SB-FRS 109 impairment model, impairment losses are generally expected to increase and become more volatile. The Group has determined that the application of SB-FRS 109's impairment requirements at 1 April 2018 did not have a material impact on the financial statements.

Additional information about how the Group measures the allowance for impairment is described in Note 2.18.

## (c) Transition

Changes in accounting policies resulting from the adoption of SB-FRS 109 have been generally applied by the Group retrospectively, except as described below.

- The Group has used an exemption not to restate comparative information for prior periods with respect to classification and measurement (including impairment) requirements. Differences in the carrying amounts of financial assets and financial liabilities resulting from the adoption of SB-FRS 109 are recognised in retained earnings and reserves as at 1 April 2018, if any. Accordingly, the information presented for 2017 does not generally reflect the requirements of SB-FRS 109, but rather those of SB-FRS 39.
- The following assessments were made on the basis of facts and circumstances that existed at 1 April 2018.
  - The determination of the business model within which a financial asset is held; and
  - The determination of whether the contractual terms of a financial asset give rise to cash flows that are solely payments of principal and interest on the principal amount outstanding.
- If a debt investment has low credit risk at 1 April 2018, the Group had assumed that the credit risk on the asset has not increased significantly since its initial recognition.

## 30. New standards and interpretations not adopted

A number of new standards and amendments to standards are effective for annual periods beginning after 1 April 2018 and earlier application is permitted; however, the Group has not early applied the adopted new or amended standards in preparing the financial statements.

The following new SB-FRSs, interpretations and amendments to SB-FRSs are effective for annual periods beginning after 1 April 2018:

- SB-FRS 116 *Leases*
- INT SB-FRS INT 123 *Uncertainty over Income Tax Treatments*

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 30. New standards and interpretations not adopted (continued)

The Group has assessed the estimated impact that initial application of SB-FRS 116 will have on the financial statements. The Group's assessment of SB-FRS 116, which is expected to have a more significant impact on the Group, is as described below.

**SB-FRS 116 Leases**

SB-FRS 116 introduces a single, on-balance sheet lease accounting model for lessees. A lessee recognises a right-of-use (ROU) asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. There are recognition exemptions for short-term leases and leases of low-value items. Lessor accounting remains similar to SB-FRS 17 Leases. SB-FRS 116 replaces existing lease accounting guidance, including SB-FRS 17, INT SB-FRS 104 *Determining whether an Arrangement contains a Lease*, INT SB-FRS 15 *Operating Leases – Incentives*, and INT SB-FRS 27 *Evaluating the Substance of Transactions Involving the Legal Form of a Lease*. The standard is effective for annual periods beginning on or after 1 April 2019, with early adoption permitted.

The Group plans to apply SB-FRS 116 initially on 1 April 2019, using the modified retrospective approach. Therefore, the cumulative effect of adopting SB-FRS 116 will be recognised as an adjustment to the opening balance of retained earnings at 1 April 2019, with no restatement of comparative information. The Group plans to apply the practical expedient to grandfather the definition of a lease on transition. This means that they will apply SB-FRS 116 to all contracts entered into before 1 April 2019 and identified as lease in accordance with SB-FRS 17 and INT SB-FRS 104.

(a) The Group as a lessee

The Group expect their existing operating lease arrangements to be recognised as ROU assets with corresponding lease liabilities under SB-FRS 116.

The Group expects to measure lease liabilities by applying a single discount rate to their portfolio of leases. For lease contracts that contain the option to renew, the Group is expected to use hindsight in determining the lease term.

As at 1 April 2019, the Group expects an increase in ROU assets of \$12,424, an increase in lease liabilities of \$12,854, and a decrease in retained earnings of \$430.

The nature of expenses related to those leases will change as SB-FRS 116 replaces the straight-line operating lease expense with depreciation charge for ROU assets and interest expense on lease liabilities.

No significant impact is expected for the Group's finance leases.

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2019

## 30. New standards and interpretations not adopted (continued)

(b) The Group as lessor

SB-FRS 116 substantially carries forward the current existing lessor accounting requirements. Accordingly, the Group continues to classify its leases as operating leases or finance leases, and to account for these two types of leases using the existing lease and finance lease accounting models respectively.

No significant impact is expected for other leases in which the Group is a lessor.

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